

City Council Regular Meeting

Thursday, June 12, 2025
6:00 p.m.

Chandler City Council Chambers
88 E. Chicago St., Chandler, AZ

CHANDLER arizona
Community of Innovation



Back row
Councilmember Matt Orlando, Councilmember OD Harris, Councilmember Jane Poston, Councilmember Jennifer Hawkins

Front row
Vice Mayor Christine Ellis, Mayor Kevin Hartke, Councilmember Angel Encinas

Our Vision

We are a world class City that provides an exceptional quality of life.

Our Brand

A safe, diverse, equitable and inclusive community that connects people, chooses innovation and inspires excellence.

Innovative Focus

Innovation is the lifeblood of our community. The introduction of new ideas and methods is rooted in Chandler's culture and heritage. This thread of innovation embodies how we connect, plan and serve our city to be a contemporary, financially responsible and safe place to live and work.

Pursuant to Resolution No. 4464 of the City of Chandler and to A.R.S. 38-431.02, notice is hereby given to the members of the Chandler City Council and to the general public that the Chandler City Council will hold a REGULAR MEETING open to the public on Thursday, June 12, 2025, at 6:00 p.m., in the Chandler City Council Chambers, 88 E. Chicago Street, Chandler, Arizona. One or more members of the Chandler City Council may attend this meeting by telephone.

Persons with disabilities may request a reasonable modification or communication aids and services by contacting the City Clerk’s office at 480-782-2181 (711 via AZRS). Please make requests in advance as it affords the City time to accommodate the request.

Agendas are available in the Office of the City Clerk, 175 S. Arizona Avenue.



Regular Meeting Agenda

City Council Strategic Framework Focus Areas: Legend

- Community Safety
- Neighborhoods
- Quality of Life
- Sustainability and Technology
- Connectivity
- Economic Vitality

Call to Order

Roll Call

Invocation - Pastor James Hoefer, Epiphany Lutheran Church

Pledge of Allegiance

Consent Agenda

Items listed on the Consent Agenda may be enacted by one motion and one vote. If a discussion is required by members of the governing body, the item will be removed from the Consent Agenda for discussion and determination will be made if the item will be considered separately.

Proposed Motion: Move to approve the Consent Agenda of the June 12, 2025, Regular Meeting, Items 1 - 29.



Airport

1. **Construction Agreement No. AI2302.401 with Combs Construction Company, Inc., for Taxiway B Improvements Phase 1**

   Move City Council award Construction Agreement No. AI2302.401 to Combs Construction Company, Inc., for Taxiway B Improvements Phase 1, for an amount not to exceed $1,236,949.70.

   Council Focus Area(s):



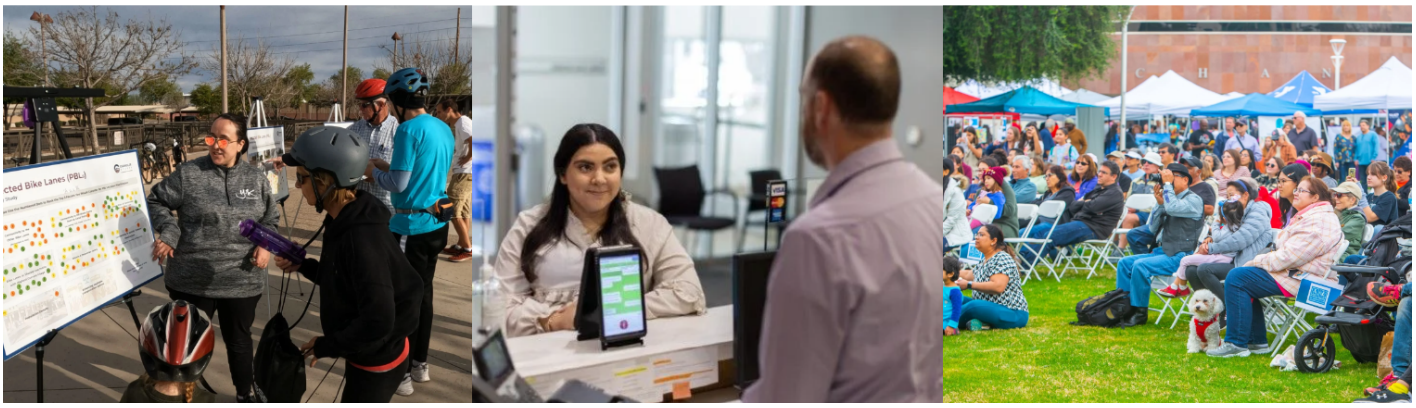
City Clerk

2. **Approval of Minutes**

   Move City Council approve the Council meeting minutes of the Special Meeting of April 29, 2025, the Special Meeting of May 12, 2025, the 4:00 PM Special Meeting of May 19, 2025, the 4:30 PM Special Meeting of May 19, 2025, and the Study Session of May 19, 2025.

3. **Boards and Commissions Member Appointments**

   Move City Council approve the Board and Commission appointments as recommended.



City Manager

4. **Resolution No. 5917, Master Energy Services Agreement between Ameresco, Inc., and the City of Chandler for New Solar Installations**

Move City Council pass and adopt Resolution No. 5917, authorizing the Master Energy Services Agreement between Ameresco, Inc., and the City of Chandler, for New Solar Installations at City Facilities, in an amount not to exceed $34,028,753; authorizing the City Manager or designee to execute work orders for each solar site; and approving a contingency transfer from General Fund, Non-Departmental, Contingency Account, to the General Capital Projects Fund, Sustainability Programs Project, in the amount of $18,953,753.

Council Focus Area(s): 

5. **Resolution No. 5909 Authorizing Submittal of an Indian Gaming Revenue Sharing Grant Application from St. Joseph The Worker to Ak-Chin Indian Community**

Move City Council pass and adopt Resolution No. 5909 authorizing the submittal of a $25,000 pass-through Indian Gaming Revenue Sharing Grant Application from St. Joseph The Worker for its Workforce Development Program.

Council Focus Area(s): 

6. **Resolution No. 5908 Authorizing Submittal of an Indian Gaming Revenue Sharing Grant Application from Dignity Health Foundation - East Valley to Ak-Chin Indian Community**

Move City Council pass and adopt Resolution No. 5908 authorizing the submittal of a $146,879 pass-through Indian Gaming Revenue Sharing Grant Application from the Dignity Health Foundation – East Valley to the Ak-Chin Indian Community to purchase four Point of Care Ultrasound Units.

Council Focus Area(s): 

7. **Resolution No. 5904, Authorizing a Grant Application for, and Acceptance of Grant Funds from, the Arterial Rehabilitation and Reconstruction Program for Improvements to Chandler Boulevard from Dobson Road to Price Road**

Move City Council pass and adopt Resolution No. 5904, authorizing a grant application for, and acceptance of grant funds from, the Arterial Rehabilitation and Reconstruction Program to fund the repaving of and other improvements to Chandler Boulevard from Dobson Road to Price Road.

Council Focus Area(s): 



Cultural Development

8. **Job Order Project Agreement No. CA2206.402 with Achen-Gardner Construction, LLC, Pursuant to Job Order Master Agreement No. JOC2404.401, for Downtown Alley Improvements from California Street to San Marcos Alleyway**

Move City Council award Job Order Project Agreement No. CA2206.402 to Achen-Gardner Construction, LLC, Pursuant to Job Order Master Agreement No. JOC2404.401, for Downtown Alley Improvements from California Street to San Marcos Alleyway, in an amount not to exceed $373,634.88.

Council Focus Area(s):



Development Services

9. **Introduction and Tentative Adoption of Ordinance No. 5131, Rezoning and Preliminary Development Plan, PLH24-0035 California Duplex, Generally Located 1/2 mile South of the Southwest Corner of Chandler Boulevard and Arizona Avenue**

Rezoning

Move City Council introduce and tentatively adopt Ordinance No. 5131, approving PLH24-0035 California Duplex, Rezoning from Planned Area Development (PAD) for Single-Family Residential to PAD for a Duplex, subject to the conditions as recommended by Planning and Zoning Commission.

Preliminary Development Plan
Move City Council approve Preliminary Development Plan PLH24-0035 California Duplex for site layout and building architecture, subject to the conditions as recommended by Planning and Zoning Commission.

Council Focus Area(s):



Economic Development

10. **Resolution No. 5915, Approving an Intergovernmental Agreement Between the City of Chandler and the Arizona Board of Regents, on Behalf of Arizona State University and Its L. William Seidman Research Institute, W.P. Carey School of Business, to Provide a 20-Year Economic Vitality Report for the City, and Authorizing the Acceptance of Grant Funds from the Chandler Industrial Development Authority**

Move City Council pass and adopt Resolution No. 5915 approving an Intergovernmental Agreement between the City of Chandler and the Arizona Board of Regents, on behalf of Arizona State University and its L. William Seidman Research Institute, W.P. Carey School of Business, to provide a 20-year economic vitality report for the city, in an amount not to exceed $145,000; and authorizing the acceptance of grant funds from the Chandler Industrial Development Authority in the amount of $150,000.

Council Focus Area(s):

11. **Resolution No. 5916, Approving a Second Amendment to the Intergovernmental Agreement Between the City of Chandler and the Arizona Board of Regents, on Behalf of Arizona State University, for the Delivery of Business Incubator and Ecosystem Building Services, in an Amount Not to Exceed $275,000 Annually, for the Period of Two Years, Beginning July 1, 2025, Through June 30, 2027**

Move City Council pass and adopt Resolution No. 5916, approving a second amendment to the Intergovernmental Agreement between the City of Chandler and the Arizona Board of Regents, on behalf of Arizona State University, for the delivery of business incubator and ecosystem building services, in an amount not to exceed $275,000 annually, for the period of two years, beginning July 1, 2025, through June 30, 2027.

Council Focus Area(s):



Information Technology

12. **Agreement No. 4904, for Applications Managed Support Services**

Move City Council approve Agreement No. 4904, with Parsus Solutions, LLC, for applications managed support services, in an amount not to exceed $860,000, for the period of one year, beginning June 15, 2025, through June 14, 2026.

Council Focus Area(s):

13. **Purchase of Information Technology Temporary Staffing Services**

Move City Council approve the purchase of information technology temporary staffing services, from Computer Aid, Inc., utilizing the Sourcewell Contract No. 071321-CAI, in an amount not to exceed $4,852,400, for a period of one year, beginning July 1, 2025, through June 30, 2026.

Council Focus Area(s):

14. **Purchase of Utility Billing System Annual Support and Maintenance**

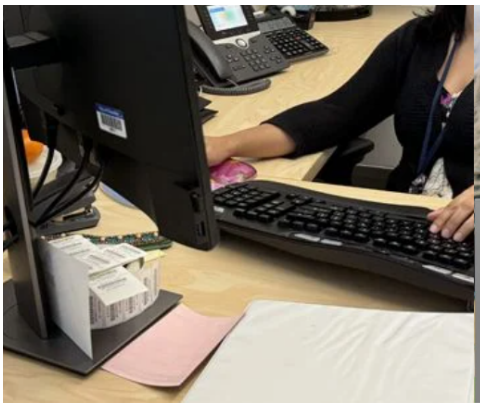
Move City Council approve the purchase of utility billing system annual support and maintenance services, from N. Harris Computer Corporation, in the amount of $267,989.85, for the period of one year, beginning July 1, 2025, through June 30, 2026.

Council Focus Area(s):

15. **Purchase of Oracle Annual Support and Maintenance**

Move City Council to approve the purchase of Oracle annual support and maintenance from Mythics, Inc., utilizing the Omnia Partners Contract No. R190801, in the amount of $424,970, for the period of one year, beginning August 1, 2025, through July 31, 2026.

Council Focus Area(s):





Management Services

16. **License Series 12, Restaurant Liquor License Application for Jared Michael Repinski, Agent, Tap N Taco CH 1, LLC, DBA Tap N Taco**

Move for recommendation to the State Department of Liquor Licenses and Control for approval of the State Liquor Job No. 340168, a Series 12, Restaurant Liquor License, for Jared Michael Repinski, Agent, Tap N Taco CH1, LLC, DBA Tap N Taco, located at 141 S. Arizona Avenue, and approval of the City of Chandler, Series 12, Restaurant Liquor License No. 309493.

Council Focus Area(s):

17. **License Series 10, Beer and Wine Store Liquor License Application for Andrea Dahlman Lewkowitz, Agent, Trimark Chandler Hospitality II, LLC, DBA TownePlace Suites Phoenix Chandler Fashion Center**

Move for recommendation to the State Department of Liquor Licenses and Control for approval of the State Liquor Job No. 337993, a Series 10, Beer and Wine Store Liquor License, for Andrea Dahlman Lewkowitz, Agent, Trimark Chandler Hospitality II, LLC, DBA TownePlace Suites Phoenix Chandler Fashion Center, located at 3635 W. Chandler Boulevard, and approval of the City of Chandler, Series 10, Beer and Wine Store Liquor License No. 305670.

Council Focus Area(s):

18. **New License Series 12, Restaurant Liquor License Application for Gerardo Reyes Gomez, Agent, Morning Glory Restaurant 3, LLC, DBA Morning Glory Brunchery**

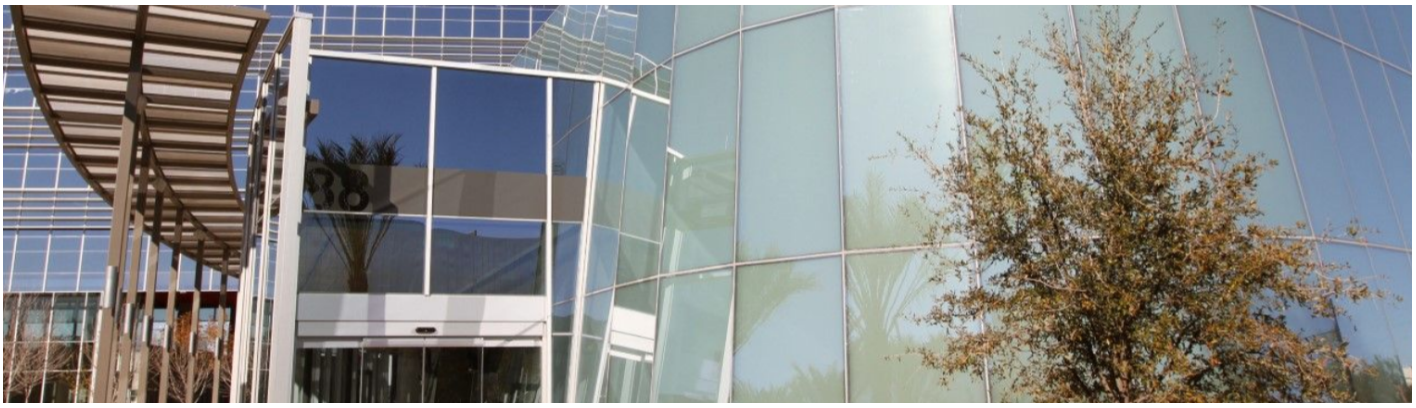
Move for recommendation to the State Department of Liquor Licenses and Control for approval of the State Liquor Job No. 340292, a Series 12, Restaurant Liquor License, for Gerardo Reyes Gomez, Agent, Morning Glory Restaurant 3, LLC, DBA Morning Glory Brunchery, located at 70 E. Riggs Road, Suite 1, and approval of the City of Chandler, Series 12, Restaurant Liquor License No. 309522.

Council Focus Area(s):

19. **License Series 12, Restaurant Liquor License Application for Luther Jeremy Rainer III, Agent, Pizza Solutions, LLC II, DBA Rosati's Pizza**

Move for recommendation to the State Department of Liquor Licenses and Control for approval of the State Liquor Job No. 343458, a Series 12, Restaurant Liquor License, for Luther Jeremy Rainer III, Agent, Pizza Solutions, LLC II, DBA Rosati's Pizza, located at 1050 E. Ray Road, Suite 2, and approval of the City of Chandler, Series 12, Restaurant Liquor License No. 309547.

Council Focus Area(s):



Mayor and Council

20. **Final Adoption of Ordinance No. 5132, Forming a City Charter Amendment Resident Advisory Committee**

Move Council adopt Ordinance No. 5132, forming a City Charter Amendment Resident Advisory Committee, to review and identify potential amendments to the City's Charter.

Council Focus Area(s):

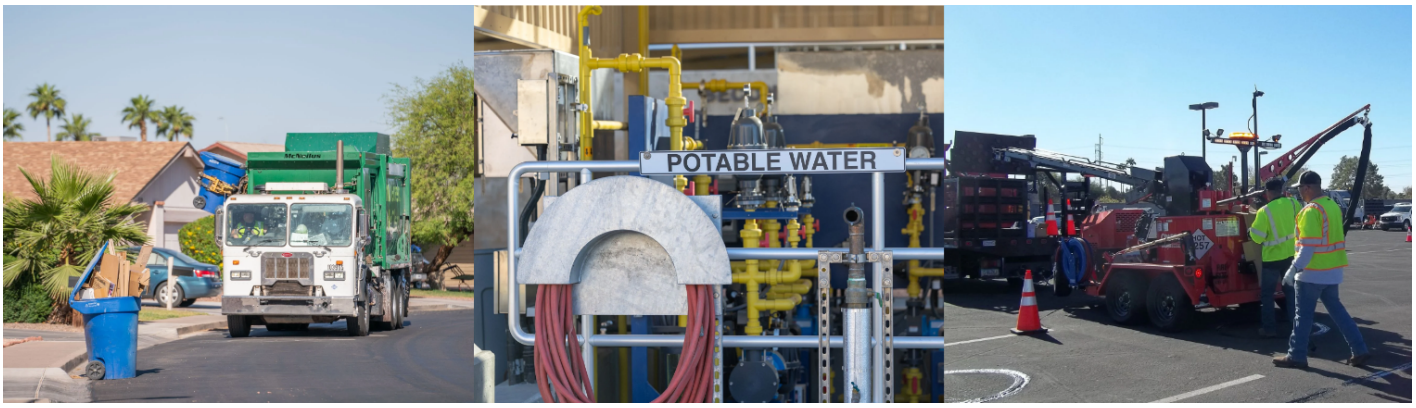


Police Department

21. **Purchase of Secure Communication Software**

Move City Council approve the purchase of secure communication software, from Genasys, Inc., utilizing the Sourcewell Contract No. 051321-GYS, in an amount not to exceed $173,250.01, for Fiscal Years 2024-2025 through 2029-2030.

Council Focus Area(s):



Public Works and Utilities

22. **Agreement No. 4521, Amendment No. 3, Supervisory Control and Data Acquisition (SCADA) Maintenance Services**

Move City Council approve Agreement No. 4521, Amendment No. 3, with Schneider Electric Systems USA, Inc., for the sole source purchase of SCADA maintenance services, in an amount not to exceed $149,903, for the period of one year, July 1, 2025, through June 30, 2026.

Council Focus Area(s):

23. **Construction Agreement No. WW2206.404, with Arrowmark, LLC, for the Reclaimed Water Pipe Extension - Germann Road and Hamilton Street**

Move City Council award Construction Agreement No. WW2206.404, to Arrowmark, LLC, for the Reclaimed Water Pipe Extension - Germann Road and Hamilton Street, in an amount not to exceed $835,000.

Council Focus Area(s):

24. **Professional Services Agreement No. WW2206.454, with Wilson Engineers, LLC, for the Reclaimed Water Pipe Extension - Germann Road and Hamilton Street Construction Management Services**

Move City Council award Professional Services Agreement No. WW2207.454, to Wilson Engineers, LLC for the Reclaimed Water Pipe Extension Germann Road and Hamilton Street Construction Management Services, in the amount not to exceed $141,990.

Council Focus Area(s): 

25. **Construction Services Agreement No. ST2103.504, SRP Contract No. 4225073, with Salt River Project (SRP), for the Ray Road and Dobson Road Intersection Improvements**

Move City Council award Construction Services Agreement No. ST2103.504, SRP Contract No. 4225073, to SRP, for the Ray Road and Dobson Road Intersection Improvements, in an amount not to exceed $328,834.

Council Focus Area(s): 

26. **Construction Services Agreement No. ST2103.505, SRP Contract No. 4225072, with Salt River Project (SRP), for the Ray Road and Dobson Road Intersection Improvements**

Move City Council award Construction Services Agreement No. ST2103.505, SRP Contract No. 4225072, to SRP, for the Ray Road and Dobson Road Intersection Improvements, in an amount not to exceed $352,235.

Council Focus Area(s): 

27. **Purchase of Flow Meters, Level Meters, and Repair Services**

Move City Council approve the purchase of flow meters, level meters, and repair services from Western Environmental Equipment Co., utilizing City of Phoenix Contract No. 4701010048, in an amount not to exceed $162,932.49.

Council Focus Area(s): 

28. **Purchase of Replacement Furniture**

Move City Council approve the purchase of replacement furniture for Public Works and Utilities, Wastewater Collections Building, utilizing State of Arizona Contract No. CTR067399, with Elontec, LLC, in an amount not to exceed $206,168.10.

Council Focus Area(s): 

29. **Purchase of Heat, Ventilation, and Cooling (HVAC) Equipment, Installation, and Services**

Move City Council approve the purchase of HVAC equipment, installation, and services, utilizing Mohave Educational Services Cooperative Contract No. 24B-SMC-0905, with Sun Mechanical Contracting, Inc., in an amount not to exceed $325,000.

Council Focus Area(s): 

Public Hearing

30. **Public Hearing on Adoption of the FY 2025-26 Annual Budget, 2026-2035 Capital Improvement Program (CIP), and Setting the FY 2025-26 Property Tax Levies**

1. Open Public Hearing
2. Staff Presentation
3. Council Discussion
4. Discussion from the Audience
5. Close Public Hearing

Council Focus Area(s): 

Unscheduled Public Appearances

Adjourn

CHANDLER arizona
Community of Innovation

City Council Memorandum Airport Memo No. CP25-122

Date: June 12, 2025
To: Mayor and Council
Thru: Joshua H. Wright, City Manager
Dawn Lang, Deputy City Manager - CFO
Steven Turner, Sustainability & Performance Officer • City Manager
Ryan Reeves, Airport Manager
Daniel Haskins, Capital Projects Division Manager
From: Hafiz Noor, Construction/Design Project Manager
Subject: Construction Agreement No. AI2302.401 with Combs Construction Company, Inc., for Taxiway B Improvements Phase 1

Proposed Motion:

Move City Council award Construction Agreement No. AI2302.401 to Combs Construction Company, Inc., for Taxiway B Improvements Phase 1, for an amount not to exceed $1,236,949.70.

Background/Discussion:

Taxiway B Improvements Phase 1 is a partial extension of Taxiway B from Taxiway N, where the existing taxiway ends, to Taxiway L. Taxiway B will be designed to Aircraft Design Group II and Taxiway Design Group II standards. The taxiway will be 40’ wide, matching existing taxiways. The project will alleviate congestion near the threshold of Runway 4L-22R and Taxiway N.

This project was identified in the FAA’s Runway Safety Action Team process, as well as the 2021 Airport Master Plan approved by City Council.

The project scope of work consists of extending the existing Taxiway B by approximately 1,300 feet, connecting Taxiway L and Taxiway N. The project includes a new taxiway and shoulder pavement, pavement markings, grading, lighting, and electrical improvements. The taxiway will be 40 feet wide, and the paved shoulders will be 10 feet wide, both to match the existing taxiways. The Agreement completion time is 90 calendar days following Notice to Proceed.

This project is included in the Capital Improvement Program. The construction work will be funded entirely by an Arizona Department of Transportation Grant. No local match is required.

Evaluation:

Eight (8) bids were opened on April 23, 2025. The bid results were as follows. Combs Construcution Company, Inc., is the successful bidder.

Contractor	Bid Total
Combs Construction Company, Inc.	$1,236,949.70
Sunland Asphalt & Construction, LLC	$1,335,621.50
Nesbitt Contracting Co.	$1,361,680.10
J. Banicki Construction, Inc.	$1,468,174.60
Primavera Grading & Paving, LLC	$1,497,673.50
Granite Construction Company	$1,680,946.00
Red Point Contracting	$1,788,754.60
KE & G Construction, Inc.	$2,195,492.50

Financial Implications:

This project is included in the Capital Improvement Program. The project is funded entirely by an Arizona Department of Transportation grant. No local funding is required.

Fiscal Impact

Account No.	Fund Name	Program Name	Dollar Amount	CIP Funded Y/N
417.4110.6910.0000.6AI238	Grant Capital -ADOT	Taxiway B Extension Construction	$1,236,949.70	Y

Attachments

Agreement
Location Map

City of Chandler, Arizona
Public Works & Utilities Department
Capital Projects Division

CONSTRUCTION BID

TAXIWAY B IMPROVEMENTS PHASE 1
CITY PROJECT NO.: AI2302.401; ADOT NO.: E3S4C

MAYOR
Kevin Hartke

VICE MAYOR
Christine Ellis

COUNCIL
OD Harris Matt Orlando
Angel Encinas Jane Poston Jennifer Hawkins

for **Daniel Haskins, P.E.**
CIP City Engineer

CITY OF CHANDLER, ARIZONA

CONSTRUCTION BID

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INVITATION TO BID

BID SUBMITTAL LIST

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PROJECT SPECIFIC SPECIAL PROVISIONS

GENERAL CONDITIONS

TECHNICAL SPECIFICATIONS

GIS/GPS DATA DELIVERY REQUIREMENTS
(NOT applicable)

FEDERAL PROVISIONS
(NOT applicable)

LEGAL AD DEPARTMENT

INVITATION TO BID

TAXIWAY B IMPROVEMENTS PHASE 1
CITY PROJECT NO.: AI2302.401; ADOT No.: E3S4C

NOTICE IS HEREBY GIVEN that sealed bids will be received and date/time stamped by the City of Chandler Capital Projects Office, 215 East Buffalo Street, Chandler, Arizona 85225 until the bid submission date specified below.

All firms must be registered on the Arizona Procurement Portal (https://app.az.gov/) vendor registration system prior to submitting a Bid. Non-registered firms will not receive addenda notifications. Download the Bid Documents and any Addenda at www.chandleraz.gov/business/vendor-services/capital-projects/construction-bids. It is the contractor's sole responsibility to obtain all addenda from the City website prior to submitting their bid proposal, and to acknowledge receipt and acceptance of the addenda in their bid proposal submittal. No separate notification of addenda will be issued. The City recommends Contractors regularly check the website for updated information.

PRE-BID CONFERENCE:

	THERE WILL BE NO PRE-BID CONFERENCE

SOLICITATION QUESTIONS DUE DATE:

April 11, 2025 **5:00 p.m.** **Arizona time**	All solicitation questions must be emailed to Bid.Questions@chandleraz.gov with the subject line of: **"CITY PROJECT No.: AI2302.401; ADOT No.: E3S4C Taxiway B Improvements Phase 1 BID QUESTION".** Questions received after the due date and time will NOT be considered.

BID SUBMISSION:

April 23, 2025 **3:00 p.m.** **Arizona time**	Sealed bids must be delivered to: City of Chandler Capital Projects Office located at 215 East Buffalo Street, Chandler, Arizona, 85225. **Bids must be received on or before date and time specified.** At that time, bids will be publicly opened and read aloud in the: **Saguaro Conference Room** Bids received after the due date and time will be returned unopened without consideration. All bids must be submitted in a sealed envelope plainly marked as follows: BID OF _____, CONTRACTOR FOR: *"Taxiway B Improvements Phase 1"* *"CITY PROJECT No.: AI2302.401; ADOT No.: E3S4C"*

Work under this Agreement includes:

The Taxiway B Improvements Phase I: Taxiway L to Taxiway N project includes a partial extension of the existing Taxiway B by approximately 1,300 feet. The project includes new taxiway and shoulder pavement, pavement markings, grading, lighting, and electrical improvements. The taxiway will be 40 feet wide, and the paved shoulders will be 10 feet wide, both to match existing. Work must be completed within **90** consecutive calendar days from the Notice to Proceed.

Bids must be submitted on the Proposal Form provided and be accompanied by the Bid Bond for not less than ten percent (10%) of the total bid, payable to the City of Chandler, Arizona, or a certified or cashier's check. PERSONAL OR INDIVIDUAL SURETY BONDS ARE NOT ACCEPTABLE.

The successful bidder will be required to execute the standard form of agreement for construction prior to Council award

The successful bidder must furnish a Payment Bond and Performance Bond in the amount equal to one hundred percent (100%) of the Agreement Price.

The right is hereby reserved to accept or reject any or all bids or parts thereto, to waive any informalities in any proposal and reject the bids of any persons who have been delinquent or unfaithful to any agreement with the City of Chandler.

All Bids will remain open for 90 days after the Bid opening day, but the City may, in its sole discretion, release any Bid and return the bid security prior to that date. No Bidder may withdraw his Bid during this period without written permission from the City.

Find PRELIMINARY BID RESULTS at: https://www.chandleraz.gov/business/vendor-services/capital-projects

Protest Policy - A protest of a proposed award must be filed WITH THE PURCHASING OFFICE within 5 calendar days of the first posting of the award recommendation. Award recommendations are posted on the Capital Projects web site or the City Clerk web site. If the due date occurs on a weekend or holiday the protest must be filed the next business day.

A Protest must include:

- The name, address and telephone number of the protester;
- The signature of the protester or its representative;
- Identification of the project and the solicitation or agreement number;
- A detailed statement of the legal and factual grounds of the protest including copies of relevant documents; and
- The form of relief requested.

City will review the protest and issue a written response.

PUBLISHED DATE:	**3/26/2025** **4/2/2025** Arizona Republic AFFIDAVIT OF PUBLICATION

BID SUBMITTAL LIST

This list may not include all required bid submission items. It is the Contractor's responsibility to read the entire bid and determine all items required by the submission date and time.

DO NOT DOUBLE-SIDE ANY PART OF THE BID SUBMITTAL

PROJECT NAME: **Taxiway B Improvements Phase 1**

CITY PROJECT NO.**:** **AI2302.401; ADOT No.: E3S4C**

PLEASE INCLUDE THE FOLLOWING ITEMS IN YOUR SUBMITTAL ACCORDING TO THE DATE AND TIME LISTED IN THE INVITATION TO BID ADVERTISEMENT:

A. Bid Bond (Original – with Seal)

B. Signed Proposal Acknowledgement, and licenses

C. Bid Schedule

D. Subcontractor's List Form

E. Non-Collusion Bidding Certification

F. Certificate of Insurability and Bonding

G. Arizona Department of Revenue Privilege Tax License

BID BOND

ARIZONA STATUTORY BID BOND PURSUANT TO
TITLES 28, 34 AND 41,
OF THE ARIZONA REVISED STATUTES
(Penalty of this bond must not be less than 10% of the bid amount)

KNOW ALL MEN BY THESE PRESENTS: That, Combs Construction Company, Inc., (hereinafter "Principal"), as Principal, and Western Surety Company, (hereinafter "Surety"), a corporation organized and existing under the laws of the State of South Dakota, with its principal offices in Sioux Falls, holding a certificate of authority to transact surety business in Arizona issued by the Director of the Department of Insurance pursuant to Title 20, Chapter 2, Article 1, as Surety, held and firmly bound unto City of Chandler, Arizona, (hereinafter "Obligee"), as Obligee, in the amount of Ten Percent (10%) of the amount of the bid of Principal, submitted by Principal to the Obligee for the work described below, for the payment of which sum, the Principal and Surety bind themselves, and their heirs, administrators, executors, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has submitted a bid for construction of:

Taxiway B Improvements Phase 1
City Project No.: AI2302.401; ADOT No.: E3S4C

NOW, THEREFORE, if the Obligee shall accept the proposal of the Principal and the Principal shall enter into an agreement with the Obligee in accordance with the terms of the proposal and give the bonds and certificates of insurance as specified in the agreement document with good and sufficient surety for the faithful performance of the agreement and for the prompt payment of labor and materials furnished in the prosecution of the agreement, or in the event of the failure of the Principal to enter into the agreement and give the bonds and certificates of insurance, if the Principal pays to the Obligee the difference not to exceed the penalty of the bond between the amount specified in the proposal and such larger amount for which the Obligee may in good faith contract with another party to perform the work covered by the proposal then this obligation is void. Otherwise it remains in full force and effect provided, however, that this bond is executed pursuant to the provisions of Section 34-201, Arizona Revised Statutes, and all liabilities on this bond shall be determined in accordance with the provisions of that section to the extent as if it were copied at length herein.

Witness our hands this 9th day of April, 20 25

Combs Construction Company, Inc.	Western Surety Company
Principal SEAL	**SURETY** SEAL
By:	By: Erin Brown
	Erin Brown, Attorney-in-Fact
Its: PRESIDENT	Lockton Companies, LLC
	AGENCY OF RECORD
	14850 N. Scottsdale Rd, Ste. 225
	Scottsdale, AZ 85254
	AGENCY ADDRESS

Rev. 11/28/22

Western Surety Company

POWER OF ATTORNEY APPOINTING INDIVIDUAL ATTORNEY-IN-FACT

Know All Men By These Presents, That WESTERN SURETY COMPANY, a South Dakota corporation, is a duly organized and existing corporation having its principal office in the City of Sioux Falls, and State of South Dakota, and that it does by virtue of the signature and seal herein affixed hereby make, constitute and appoint

Marina Tapia, Janina Monroe, Tom McCall, Michelle Haase, Paul Boucher, Timothy J Noonan, Edward C Spector, Aidan Smock, Erin Brown, Charles R Teter III, Adriana Valenzuela, Simone Gerhard, B Aleman, Dennis Langer, K D Wapato, Lisa Marie Saumur, D Garcia, Jennifer Ochs, Martha Barreras, Ethan Spector, Individually

of Los Angeles, CA, its true and lawful Attorney(s)-in-Fact with full power and authority hereby conferred to sign, seal and execute for and on its behalf bonds, undertakings and other obligatory instruments of similar nature

- In Unlimited Amounts -

and to bind it thereby as fully and to the same extent as if such instruments were signed by a duly authorized officer of the corporation and all the acts of said Attorney, pursuant to the authority hereby given, are hereby ratified and confirmed.

This Power of Attorney is made and executed pursuant to and by authority of the By-Law printed on the reverse hereof, duly adopted, as indicated, by the shareholders of the corporation.

In Witness Whereof, WESTERN SURETY COMPANY has caused these presents to be signed by its Vice President and its corporate seal to be hereto affixed on this 11th day of February, 2022.

WESTERN SURETY COMPANY

Paul T. Bruflat, Vice President

State of South Dakota
County of Minnehaha } ss

On this 11th day of February, 2022, before me personally came Paul T. Bruflat, to me known, who, being by me duly sworn, did depose and say: that he resides in the City of Sioux Falls, State of South Dakota; that he is the Vice President of WESTERN SURETY COMPANY described in and which executed the above instrument; that he knows the seal of said corporation; that the seal affixed to the said instrument is such corporate seal; that it was so affixed pursuant to authority given by the Board of Directors of said corporation and that he signed his name thereto pursuant to like authority, and acknowledges same to be the act and deed of said corporation.

My commission expires
March 2, 2026

M. BENT
NOTARY PUBLIC
SOUTH DAKOTA

M. Bent, Notary Public

CERTIFICATE

I, L. Nelson, Assistant Secretary of WESTERN SURETY COMPANY do hereby certify that the Power of Attorney hereinabove set forth is still in force, and further certify that the By-Law of the corporation printed on the reverse hereof is still in force. In testimony whereof I have hereunto subscribed my name and affixed the seal of the said corporation this APR. 09 2025 day of

WESTERN SURETY COMPANY

L. Nelson, Assistant Secretary

Form F4280-7-2012

Go to www.cnasurety.com > Owner / Obligee Services > Validate Bond Coverage, if you want to verify bond authenticity.

PROPOSAL ACKNOWLEDGEMENT

THIS BID IS SUBMITTED BY: COMBS CONSTRUCTION COMPANY, INC,
a corporation organized under the laws of the State of ARIZONA; a
partnership consisting of _____;
or individual trading as _____
and is the holder of an Arizona State Contractor's License: 100380

ATTACH PHOTOCOPY
Classification A-GENERAL No. 100380

Failure to fill in the information above, regarding the bidder being a holder of Arizona State Contractor's License is grounds for rejection of the bid.

Joint venture bid proposals will not be accepted for projects bidding in the amount (for base bid) of less than $5 million dollars.

Contractors are reminded it is a violation of State law to submit a bid if not properly licensed. Bids submitted without designating the Contractor's license classification and number, in the spaces provided above, shall be rejected. Bids submitted by Contractors without the required license shall be rejected.

Contractor acknowledges by signing below that bid prices submitted include all applicable sales and/or use taxes, and no further compensation shall be approved for these items. If there is a conflict between the unit bid price and the unit price extension for a particular pay item, the unit prices shall govern, per MAG 102.5. Also, per MAG 102.7, a proposal shall be considered irregular and may be rejected if there are unauthorized additions, statements, conditional or alternate bids, or irregularities of any kind.

Respectfully submitted,

COMBS CONSTRUCTION COMPANY, INC
Firm

86-0744516
Federal Tax ID Number

PO BOX 10789 GLENDALE AZ 85318
Address City, State and Zip Code

602.237.4029
Phone

By (Signature Required)

MIKE STEG VICE PRESIDENT
Name and Title (Print)

MIKE@COMBSAZ.COM
Email Address

CITY OF CHANDLER
CHANDLER, ARIZONA

Taxiway B Improvements Phase 1
City Project No.: AI2302.401; ADOT No.: E3S4C

PROPOSAL ACKNOWLEDGEMENT

PROPOSAL to the City Engineer of the City of Chandler,
In compliance with the Advertisement for Bids, the undersigned bidder:

Having examined the agreement documents, site of work, and being familiar with the conditions to be met, hereby submits the following Proposal for furnishing the material, equipment, labor and everything necessary for the completion of the work listed and agrees to execute the agreement documents and furnish the required bonds and certificates of insurance for the completion of said work, at the locations and for the prices set forth on the inside pages of this form.

Understands that construction of this project shall be in accordance with all applicable Uniform Standard Specifications and Standard Details except as otherwise required by the Project Plans and Project Specific Provisions.

Understands that the Proposal shall be submitted with a Proposal guarantee of cash, certified check, cashier's check, or surety bond for an amount of not less than ten percent (10%) of the amount bid.

Agrees that upon receipt of Notice of Award from the City of Chandler, the undersigned bidder will execute the agreement documents.

Work shall be completed within **90** consecutive calendar days, beginning with the day following the starting date specified in the Notice to Proceed. Said Notice will be issued in accordance with the Project Specific Provisions "NOTICE TO PROCEED," or, when, in the opinion of the Engineer, sufficient materials are, or will be available for the continuous prosecution of the work.

Acknowledges that bid prices submitted include all applicable sales and/or use taxes, and no further compensation will be approved for these items.

The Bidder hereby acknowledges receipt of and agrees that the submitter's Proposal is based on the following Addenda:

Addendum	Date Received	Addendum No.	Date Received
1	4/16/2025		

CHANDLER arizona
Community of Innovation

CITY OF CHANDLER, ARIZONA

TAXIWAY B IMPROVEMENTS PHASE 1

City Project No. AI2302.401; ADOT No.: E3S4C

ADDENDUM NO. 1

Date: 4/16/2025

1. Bidder must acknowledge the receipt of this addendum on the Proposal Acknowledgement page of the **BID SUBMITTAL**. This addendum, containing **1 page**, is hereby incorporated into the Construction Agreement by this reference.

2. **Question:** Bid item 28, Single-Way 1-2" Conduit, direct buried appears to be in asphalt shoulders. Does this bid item require concrete or slurry encasement since it's under pavement?

   Response: Bid Item 28 will need to be revised to state: **Single-Way 1-2" Conduit Slurry Encased with Counterpoise.**

   Specification Section L-110 Basis of payment Item No. 28, Spec No. L-110-5.1 need to be revised to state: **Single-Way 1-2" Conduit Slurry Encased with Counterpoise – per Linear Foot.**

   Note 4 on Sheets E3.0 and E3.1 should be revised to state: **1-2" Conduit Slurry Encased with Counterpoise.**

If you have any questions, please email Bid.Questions@chandleraz.gov.

Daniel Haskins

Daniel Haskins, P.E.
CIP City Engineer
Public Works & Utilities Dept. – Capital Projects

RECEIVED SEP 18 2023

IMPORTANT NOTICE
YOU MUST:

1.) REPORT DISASSOCIATION OF QUALIFYING PARTY **IN WRITING** WITHIN 15 DAYS. [SEE A.R.S. §32-1154(A)(18)]
2.) REPORT A CHANGE OF ADDRESS **IN WRITING** WITHIN 30 DAYS. [SEE A.R.S. § 32-1122(B)(1)]
3.) REPORT ANY TRANSFER OF OWNERSHIP OF 50% OR MORE IMMEDIATELY [SEE A.R.S. § 32-1151.01]
4.) REPORT ANY CHANGE IN LEGAL ENTITY, SUCH AS ANY CHANGE OF THE OWNERSHIP IN A SOLE PROPRIETORSHIP OR CHANGE OF A PARTNER IN A PARTNERSHIP OR THE CREATION OF A NEW CORPORATE ENTITY [SEE A.R.S. § 32-1124 (B)(F) § RULE R-4-9-110]

Combs Construction Company Inc

Po Box 10789
Glendale, AZ 85318-0789

THIS IS YOUR IDENTIFICATION CARD
DO NOT DESTROY

LICENSE EFFECTIVE THROUGH:
STATE OF ARIZONA November 30, 2025
Registrar of Contractors CERTIFIES THAT

Combs Construction Company Inc

CONTRACTORS LICENSE NO. ROC 100380 CLASS A

General Commercial
General Engineering

THIS CARD MUST BE PRESENTED UPON DEMAND

Cynthia D. Casaus, Interim Director

IMPORTANT NOTICE
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THIS CARD MUST BE PRESENTED UPON DEMAND

Cynthia D. Casaus, Interim Director

NAME OF BIDDER: COMBS CONSTRUCTION COMPANY, INC

CITY OF CHANDLER

Taxiway B Improvements Phase 1
City Project No.: AI2302.401; ADOT No.: E3S4C

BID SCHEDULE

No.	Spec.No.	Description	Est. Qty.	Unit	Unit Price	Extended Price
1	C-100.14.1	Contractor Quality Control Program (CQCP)	1	LS	90,000	90,000.00
2	C-102-6.1	Storm Water Pollution Prevention Plan (SWPPP)	1	LS	10,000	10,000.00
3	C-105-6.1	Mobilization	1	LS	96,000.00	96,000.00
4	SP-50.01.1	Location of Underground Utilities	1	LS	2,500.00	2,500.00
5	SP-60.05.1	Airfield Safety and Security	1	LS	138,360.00	138,360.00
6	SP-80.01.1	Riprap (D50=6-Inch, T = 12-Inch)	31	SY	$70.30	$2,179.30 TS
7	P-101-5.1	Sawcut AC Pavement (Full Depth ± 4-Inch)	421	LF	$4.00	$1,684.00
8	P-101-5.2	Remove AC Pavement (Full Depth ± 4-Inch)	583	SY	$13.40	$7,812.20
9	P-152-4.1	Unclassified Excavation	1,100	CY	$52.40	$57,640.00
10	P-152-4.2	Unsuitable Excavation and Replacement, Backfill and Compaction	220	CY	$60.00	$13,200.00
11	P-152-4.3	Compacted Subgrade (12-Inch Depth)	9,251	SY	$3.00	$27,753.00
12	P-208-5.1	Taxiway Aggregate Base Course (9-Inch Depth)	6,318	SY	$23.20	$146,577.60
13	P-208-5.2	Shoulder Aggregate Base Course (6-Inch Depth)	2,933	SY	$17.20	$50,447.60
14	P-401-8.1	Taxiway Asphalt Surface Course (4-Inch Depth, PG 70-22)	6,318	SY	30.50	192,699.00
15	P-403-8.1	Shoulder Asphalt Surface Course (3-Inch Depth, PG 70-22)	2,933	SY	22.50	65,992.50
16	P-620-5.1	Obliterate & Seal Pavement Markings	1,583	SF	$9.00	$14,247.00
17	P-620-5.2	Temporary Pavement Markings	3,975	SF	$0.60	$2,385.00
18	P-620-5.3	Permanent Pavement Markings	3,975	SF	$1.80	$7,155.00
19	T-901-5.1	Seeding	1.9	AC	$5,600.00	$10,640.00 TS
20	L-100-5.1	Remove and Salvage Existing Taxiway Edge Light and Isolation Transformer Demolish Base Can	6	EA	$225.00	$1,350.00
21	L-100-5.2	Remove and Salvage Existing Taxiway Edge Light and Isolation Transformer and Return to Owner - Base Can to Remain	3	EA	$75.00	$225.00
22	L-100-5.3	Remove Existing Conductors Back to Next Adjacent Light fixture or Hand Hole, Conduit to Remain	726	LF	$1.20	$871.20
23	L-100-5.4	Excavate and Remove Existing Conduit and Conductors	418	LF	$3.35	$1,400.30
24	L-100-5.5	Remove and Salvage Existing Airfield Guidance Sign and Return to Owner - Remove Concrete Sign Base	2	EA	$600.00	$1,200.00
25	L-100-5.6	Remove and Salvage Existing Airfield Guidance Sign and Isolation Transformer and	1	EA	$370.00	$370.00

Taxiway B Improvements Phase 1
City Project No.: AI2302.401; ADOT No.: E3S4C

BID SCHEDULE - CONTINUED

		Return to Owner, Sign Base to Remain				
26	L-108-5.1	L-824, Type C, 1/C #8 AWG, 5kV Cable	4,525	LF	$3.00	$13,575.00
27	I-108-5.2	L-824, Type C, 2/C #8 AWG, 5kV Cable	941	LF	$6.00	$5,646.00
28	L-110-5.1	Single-Way 1-2" Conduit Direct Buried	3,424	LF	$35.00	$119,840.00
29	L-110-5.2	Multiple-Way 2-2" Conduit Concrete Encased	180	LF	$55.00	$9,900.00
30	L-110-5.3	Multiple-Way 4-2" Conduit Concrete Encased	95	LF	$65.00	$6,175.00
31	L-115-5.1	New 2'x3'x3' Hand Hole with Aircraft-Rated Lid with Spring Assisted Opening	2	EA	$12,000.00	$24,000.00
32	L-115-5.2	Install New Steel Blank Cover on Existing L-867 Base Can with New Bolts	3	EA	$175.00	$525.00
33	L-125-5.1	New L-861T Quartz Taxiway Edge Light and Isolation Transformer on New L-867 Base Can	37	EA	$2,000.00	$74,000.00
34	L-125-5.2	New L-858 (L) LED Size 2, Style 3, Class 2, 2-Module Airfield Guidance Sign on New Concrete Base	2	EA	$6,150.00	$12,300.00
35	L-125-5.3	New L-858 (L) LED Size 2, Style 3, Class 2, 3-Module Airfield Guidance Sign on New Concrete Base	3	EA	$6,800.00	$20,400.00
36	L-125-5.4	New L-858(L) LED Size 2, Style 3, Class 2, 3-Module Airfield Guidance Sign on Existing Concrete Sign Base	1	EA	$4,350.00	$4,350.00
37	L-125-5.5	New L-858 Size 2, Unlighted Taxiway Ending Marker Sign on New Concrete Sign Base	1	EA	$3,550.00	$3,550.00

BASE BID (Items 1- 37 inclusive) $ 1,236,949.70
(In Numbers)

one million two hundred thirty six thousand nine hundred forty nine
(In Words) Dollars

seventy cents
(In Words) Cents

Note 1: Bidders must fill in all blank spaces with an entry. Bids submitted with blank spaces will be considered "Non-Responsive".

Note 2: Bids will be opened and read aloud at an open public meeting at the time and place designed in the invitation for bids. Bids will not be modified after the bid opening. A bidder withdrawing a bid after the bid opening will be deemed non-responsible and the City may make a claim against the bidder's bid bond.

Note 3: The City reserves the right to determine the low bidder based on the Base Bid with or without any Bid Alternate(s).

SUBCONTRACTOR'S LIST FORM

Taxiway B Improvements Phase 1
City Project No.: AI2302.401; ADOT No.: E3S4C

If Bidder intends to subcontract any portion of this Agreement, the bidder must submit the name, address, and contractor's license number (if applicable) of each subcontractor, including the work component of such subcontracting. Include this form with the bid submittal documents. Prime Contractor must self-perform according to MAG Specification 108.2. Bidder may make multiple copies of this form as needed.

Company Name:	RURAL ELECTRIC	**Company Name:**	QUALITY TESTING
Contact Name:	JEFF TAWZER	Contact Name:	FRANK HATHAWAY
Contact Email:	JEFFT@RURALELECTRIC.COM	Contact Email:	FHATHAWAY@QT-AZ.COM
Contact Phone:	480-850-3565	Contact Phone:	480-968-9604
Work Component:	ELECTRICAL	Work Component:	QUALITY CONTROL
Percentage of Total Work Performed:	18.61 TS	Percentage of Total Work Performed:	1.51

Company Name:	PAVECO INC	**Company Name:**	MILLING SERVICES
Contact Name:	STEVE COMBS	Contact Name:	MELISSA SMITH
Contact Email:	STEVE@PAVECOAZ.COM	Contact Email:	MSMITH@MILLINGSERVICES.COM
Contact Phone:	602-288-8273	Contact Phone:	480-271-2914
Work Component:	PLACE ASPHALT	Work Component:	ASPHALT MILLING
Percentage of Total Work Performed:	4.99	Percentage of Total Work Performed:	0.56

Company Name:	METRO SURVEY	**Company Name:**	BED ROCK
Contact Name:	BRANDON GALLIMORE	Contact Name:	DAN DONALDSON
Contact Email:	BRANDON@METROAZ.NET	Contact Email:	DAN@BEDROCKGLENDALE.COM
Contact Phone:	623-466-6640	Contact Phone:	623-939-7596
Work Component:	SURVEY	Work Component:	TRUCKING
Percentage of Total Work Performed:	2.47	Percentage of Total Work Performed:	1.76
Subcontractor Total Work Performed:	$ 411,843.98	Overall Bid Total:	$ 1,236,949.70 TS
Overall Prime Contractor Self-performance %:	67.0		

SUBCONTRACTOR'S LIST FORM

Taxiway B Improvements Phase 1
City Project No.: AI2302.401; ADOT No.: E3S4C

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Company Name:	DESERT SEEDERS	**Company Name:**	
Contact Name:	SAM STRIBLING	Contact Name:	
Contact Email:	SAM@DESERTSEEDERSAZ.COM	Contact Email:	
Contact Phone:	505-872.0846	Contact Phone:	
Work Component:	SEEDING	Work Component:	
Percentage of Total Work Performed:	0.72	Percentage of Total Work Performed:	

Company Name:	CACTUS ASPHALT	**Company Name:**	
Contact Name:	JEFF ABRAM	Contact Name:	
Contact Email:	JA@PAVEMENTPRESERVATIONGROUP.COM	Contact Email:	
Contact Phone:	602.377.5651	Contact Phone:	
Work Component:	SEALING	Work Component:	
Percentage of Total Work Performed:	1.16	Percentage of Total Work Performed:	

Company Name:	FALCON CONTRACTING	**Company Name:**	
Contact Name:	MORGAN SCHULTZ	Contact Name:	
Contact Email:	morgan@falcon-contracting.com	Contact Email:	
Contact Phone:	602-944-3614	Contact Phone:	
Work Component:	STRIPING	Work Component:	
Percentage of Total Work Performed:	1.22	Percentage of Total Work Performed:	
Subcontractor Total Work Performed:	$ 38,380.46	Overall Bid Total:	$ 1,236,949.70 TS
Overall Prime Contractor Self-performance %:	67.0		

NON-COLLUSION BIDDING CERTIFICATION

(STATE OF) ARIZONA
SS.
(COUNTY OF) MARICOPA

I, MIKE STEG of the City of PHOENIX,
in the County of MARICOPA and the State of ARIZONA, of full age,
being duly sworn according to the law of my oath depose and say that:

I am MIKE STEG (Name) a, VICE PRESIDENT (Title, Position, etc.)

of the firm of COMBS CONSTRUCTION COMPANY INC, the Bidder making the Bid for City of Chandler, **Taxiway B Improvements Phase 1**, **City Project No. AI2302.401; ADOT No.: E3S4C** and that I executed the said Bid with full authority so to do; that said Bidder has not, directly or indirectly entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free, competitive bidding in connection with the above named Project; and that all statements contained in said Bid and in this affidavit are true and correct, and made with full knowledge that the City of Chandler relies upon the truth of the statements contained in said Bid and in the statements contained in this affidavit in awarding the Contract for the said Project.

I further warrant that no person or selling agency has been employed or retained to solicit or secure such Contract upon an agreement of understanding, for a commission, percentage, brokerage or contingent fee, except bonafide employees or bonafide established commercial or selling agencies maintained by:

(Signature of Bidder)

MIKE STEG
(Printed or Typed Name of Bidder)

Sworn to before me this 23 day of APRIL, 2025, in the County of

MARICOPA, State of ARIZONA.

(Notary Public)

APRIL LAWSON
Notary Public - Arizona
Maricopa County
Commission # 644442
My Commission Expires February 13, 2027

CERTIFICATE OF INSURABILITY AND BONDING

I hereby certify that as Bidder to City of Chandler **Taxiway B Improvements Phase 1, City Project No.: AI2302.401; ADOT No.: E3S4C**, I am fully aware of the City of Chandler's Insurance and Bonding Requirements for Contractors and that by the submission of this Bid Proposal, assure the City of Chandler that I am able to produce the insurance and bonding coverage required should I be selected to be the successful bidder.

Should I be selected to be the successful bidder by the City of Chandler, and then become unable to produce the insurance and bonding coverage specified within ten working days I am fully aware and understand that my Bid Proposal will be rejected by the City of Chandler, and that I will forfeit my posted Bid Bond.

Signature of Bidder

VICE PRESIDENT
Title

4/23/25
Date

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT **CIVIL CODE § 1189**

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California)

County of Los Angeles)

On APR 09 2025 before me, D. Garcia, Notary Public

Date *Here Insert Name and Title of the Officer*

Personally appeared Erin Brown

Name(s) of Signer(s)

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature _____

Signature of Notary Public

D. GARCIA
COMM. #2354770
Notary Public - California
Los Angeles County
My Comm. Expires Apr. 18, 2025

Place Notary Seal Above

---------- ***OPTIONAL*** ----------

Though this section is optional, completing this information can deter alteration of the document or fraudulent reattachment of this form to an unintended document.

Description of Attached Document

Title or Type of Document _____ Document Date _____

Number of Pages _____ Signer(s) Other Than Named Above _____

Capacity(ies) Claimed by Signer(s)

Signer's Name _____

☐ Corporate Officer—Title(s) _____
☐ Partner ☐ Limited ☐ General
☐ Individual ☒ Attorney in Fact
☐ Trustee ☐ Guardian or Conservator
☐ Other _____

Signer Is Representing _____

Signer's Name _____

☐ Corporate Officer—Title(s) _____
☐ Partner ☐ Limited ☐ General
☐ Individual ☐ Attorney in Fact
☐ Trustee ☐ Guardian or Conservator
☐ Other _____

Signer Is Representing _____

ARIZONA DEPARTMENT OF REVENUE
PRIVILEGE TAX LICENSE

PROJECT NAME: Taxiway B Improvements Phase 1

CITY PROJECT NUMBER: AI2302.401; ADOT No.: E3S4C

ATTACH, TO THIS FORM, CURRENT PRIVILEGE TAX LICENSE CERTIFICATE.

ARIZONA DEPARTMENT OF REVENUE
ATTN: License and Registration
PO BOX 29082
PHOENIX AZ 85038-9082

2025
COMBS CONSTRUCTION COMPANY
INCORPORATED
PO BOX 10789
GLENDALE AZ 85318-0789

707704-02-00017

00017010460000P707704020017

RECEIVED JAN 22 2025

ARIZONA DEPARTMENT OF REVENUE
ATTN: Customer Care and Outreach
PO BOX 29032
Phoenix, AZ 85038-9032

ARIZONA DEPARTMENT OF REVENUE

TRANSACTION PRIVILEGE TAX LICENSE

NOT TRANSFERABLE

The licensee listed below is licensed to conduct business upon the condition that taxes are paid to Arizona Department of Revenue as required under provisions of A.R.S. Title 42, Chapter 5, Article 1.

2025

ISSUED TO: COMBS CONSTRUCTION COMPANY
INCORPORATED
PO BOX 10789
GLENDALE AZ 85318-0789

ALL communications and reports MUST REFER to this LICENSE NO.

LICENSE: 07468584
START DATE: 12/09/1993
ISSUED: 01/10/2025
EXPIRES: 12/31/2025

LOCATION: CODE 002
COMBS CONSTRUCTION COMPANY
INCORPORATED
2801 N 49TH AVE
PHOENIX, AZ 85043
2500069290480

BUSINESS CODE	REGION	JURISDICTION
015 - CONTRACTING - PRIME	MAR - MARICOPA	COUNTY
015 - CONTRACTING - PRIME	AV - AVONDALE	CITY

This License is issued to the business named above for the address shown. Licenses, by law, cannot be transferred from one person to another, nor can they be transferred from one location to another. Arizona law requires licensees to notify the Department of Revenue if there is a change in business name, trade name, location, mailing address, or ownership. In addition, when the business ceases to operate or the business location changes and a new license is issued, this license must be returned to the Arizona Department of Revenue. According to R15-5-2201, license must be displayed in a conspicuous place.

00318020202P0000P707704020031B

LICENSE: 07468584

BUSINESS CODE	REGION	JURISDICTION
015 - CONTRACTING - PRIME	SC - SCOTTSDALE	CITY
029 - USE TAX	SC - SCOTTSDALE	CITY
030 - USE TAX FROM INVENTORY	SC - SCOTTSDALE	CITY
015 - CONTRACTING - PRIME	SE - SEDONA	CITY
015 - CONTRACTING - PRIME	SL - SHOW LOW	CITY
015 - CONTRACTING - PRIME	SP - SURPRISE	CITY
015 - CONTRACTING - PRIME	TE - TEMPE	CITY
017 - RETAIL	TE - TEMPE	CITY
029 - USE TAX	TE - TEMPE	CITY
015 - CONTRACTING - PRIME	TN - TOLLESON	CITY
015 - CONTRACTING - PRIME	TU - TUCSON	CITY
029 - USE TAX	TU - TUCSON	CITY
015 - CONTRACTING - PRIME	WC - WILLCOX	CITY
015 - CONTRACTING - PRIME	WL - WILLIAMS	CITY
015 - CONTRACTING - PRIME	WT - WELLTON	CITY
015 - CONTRACTING - PRIME	YM - YUMA	CITY

0001704041000OP707040200017

ARIZONA DEPARTMENT OF REVENUE
ATTN: Customer Care and Outreach
PO BOX 29032
Phoenix, AZ 85038-9032

ARIZONA DEPARTMENT OF REVENUE

TRANSACTION PRIVILEGE TAX LICENSE

NOT TRANSFERABLE

The licensee listed below is licensed to conduct business upon the condition that taxes are paid to Arizona Department of Revenue as required under provisions of A.R.S. Title 42, Chapter 5, Article 1.

2025

ISSUED TO: COMBS CONSTRUCTION COMPANY INCORPORATED
PO BOX 10789
GLENDALE AZ 85318-0789

ALL communications and reports MUST REFER to this LICENSE NO.

LICENSE: 07468584
START DATE: 12/09/1993
ISSUED: 01/10/2025
EXPIRES: 12/31/2025

LOCATION: CODE 001
COMBS CONST COMPANY INCORPORATED
2801 S 49TH AVE
PHOENIX, AZ 85043
2500069290480

BUSINESS CODE	REGION	JURISDICTION
015 - CONTRACTING - PRIME	NAM - NAVAJO (NAVAJO)	RESERVATION
015 - CONTRACTING - PRIME	PMT - TOHONO O'ODHAM (PIMA)	RESERVATION
015 - CONTRACTING - PRIME	APA - APACHE	COUNTY
215 - PRE-6/2010 CONTRACTING	APA - APACHE	COUNTY
015 - CONTRACTING - PRIME	COC - COCONINO	COUNTY
215 - PRE-6/2010 CONTRACTING	COC - COCONINO	COUNTY
015 - CONTRACTING - PRIME	COH - COCHISE	COUNTY
215 - PRE-6/2010 CONTRACTING	COH - COCHISE	COUNTY
015 - CONTRACTING - PRIME	GLA - GILA	COUNTY
215 - PRE-6/2010 CONTRACTING	GLA - GILA	COUNTY
015 - CONTRACTING - PRIME	GRA - GRAHAM	COUNTY
015 - CONTRACTING - PRIME	GRN - GREENLEE	COUNTY
015 - CONTRACTING - PRIME	LAP - LA PAZ	COUNTY
014 - PERSONAL PROPERTY RENTAL	MAR - MARICOPA	COUNTY
015 - CONTRACTING - PRIME	MAR - MARICOPA	COUNTY
017 - RETAIL	MAR - MARICOPA	COUNTY
215 - PRE-6/2010 CONTRACTING	MAR - MARICOPA	COUNTY
015 - CONTRACTING - PRIME	MOH - MOHAVE	COUNTY
017 - RETAIL	MOH - MOHAVE	COUNTY
215 - PRE-6/2010 CONTRACTING	MOH - MOHAVE	COUNTY
015 - CONTRACTING - PRIME	NAV - NAVAJO	COUNTY

This License is issued to the business named above for the address shown. Licenses, by law, cannot be transferred from one person to another, nor can they be transferred from one location to another. Arizona law requires licensees to notify the Department of Revenue if there is a change in business name, trade name, location, mailing address, or ownership. In addition, when the business ceases to operate or the business location changes and a new license is issued, this license must be returned to the Arizona Department of Revenue. According to R15-5-2201, license must be displayed in a conspicuous place.

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LICENSE: 07468584

BUSINESS CODE	REGION	JURISDICTION
215 - PRE-6/2010 CONTRACTING	NAV - NAVAJO	COUNTY
015 - CONTRACTING - PRIME	PMA - PIMA	COUNTY
017 - RETAIL	PMA - PIMA	COUNTY
215 - PRE-6/2010 CONTRACTING	PMA - PIMA	COUNTY
015 - CONTRACTING - PRIME	PNL - PINAL	COUNTY
215 - PRE-6/2010 CONTRACTING	PNL - PINAL	COUNTY
015 - CONTRACTING - PRIME	YAV - YAVAPAI	COUNTY
017 - RETAIL	YAV - YAVAPAI	COUNTY
215 - PRE-6/2010 CONTRACTING	YAV - YAVAPAI	COUNTY
015 - CONTRACTING - PRIME	YMA - YUMA	COUNTY
015 - CONTRACTING - PRIME	AJ - APACHE JUNCTION	CITY
015 - CONTRACTING - PRIME	AV - AVONDALE	CITY
015 - CONTRACTING - PRIME	BE - BUCKEYE	CITY
015 - CONTRACTING - PRIME	BH - BULLHEAD CITY	CITY
015 - CONTRACTING - PRIME	CE - CAMP VERDE	CITY
015 - CONTRACTING - PRIME	CG - CASA GRANDE	CITY
015 - CONTRACTING - PRIME	CH - CHANDLER	CITY
029 - USE TAX	CH - CHANDLER	CITY
015 - CONTRACTING - PRIME	CK - CAVE CREEK	CITY
015 - CONTRACTING - PRIME	CL - COOLIDGE	CITY
015 - CONTRACTING - PRIME	CV - CHINO VALLEY	CITY
015 - CONTRACTING - PRIME	CW - COTTONWOOD	CITY
015 - CONTRACTING - PRIME	DL - DOUGLAS	CITY
015 - CONTRACTING - PRIME	EL - ELOY	CITY
015 - CONTRACTING - PRIME	EM - EL MIRAGE	CITY
015 - CONTRACTING - PRIME	FH - FOUNTAIN HILLS	CITY
015 - CONTRACTING - PRIME	FS - FLAGSTAFF	CITY
029 - USE TAX	FS - FLAGSTAFF	CITY
015 - CONTRACTING - PRIME	GB - GILBERT	CITY
015 - CONTRACTING - PRIME	GE - GLENDALE	CITY
016 - CONSTRUCTION CONTRACTING - SPECULATIVE BUILDERS	GE - GLENDALE	CITY
029 - USE TAX	GE - GLENDALE	CITY
015 - CONTRACTING - PRIME	GL - GLOBE	CITY
015 - CONTRACTING - PRIME	GY - GOODYEAR	CITY
015 - CONTRACTING - PRIME	LH - LAKE HAVASU CITY	CITY
015 - CONTRACTING - PRIME	MA - MARANA	CITY
015 - CONTRACTING - PRIME	ME - MESA	CITY
015 - CONTRACTING - PRIME	MP - MARICOPA	CITY
015 - CONTRACTING - PRIME	PE - PEORIA	CITY
029 - USE TAX	PE - PEORIA	CITY
015 - CONTRACTING - PRIME	PG - PAGE	CITY
015 - CONTRACTING - PRIME	PK - PARKER	CITY
015 - CONTRACTING - PRIME	PR - PRESCOTT	CITY
015 - CONTRACTING - PRIME	PX - PHOENIX	CITY
029 - USE TAX	PX - PHOENIX	CITY
015 - CONTRACTING - PRIME	QC - QUEEN CREEK	CITY

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CITY OF CHANDLER, ARIZONA
PUBLIC WORKS & UTILITIES DEPARTMENT
CAPITAL PROJECTS DIVISION

CONSTRUCTION AGREEMENT

TAXIWAY B IMPROVEMENTS PHASE 1

CITY PROJECT NO.: AI2302.401; ADOT No.: E3S4C

MAYOR
Kevin Hartke

VICE MAYOR
Christine Ellis

COUNCIL
OD Harris Matt Orlando
Angel Encinas Jane Poston Jennifer Hawkins

Daniel Haskins

Daniel Haskins, P.E.
CIP City Engineer

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CITY OF CHANDLER, ARIZONA

TAXIWAY B IMPROVEMENTS PHASE 1

CITY PROJECT NO.: AI2302.401; ADOT No.: E3S4C

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CONSTRUCTION SERVICES AGREEMENT
CITY PROJECT NO.: AI2302.401; ADOT No.: E3S4C

This Agreement ("Agreement") is made and entered into on the _____ day of _____, 2025, by and between City of Chandler, an Arizona municipal corporation, hereinafter called "City" and Combs Construction Company, Inc. the "Contractor" designated below (City and Contractor may individually be referred to as "Party" and collectively referred to as "Parties").

City and Contractor agree as follows:

ARTICLE 1 - PARTICIPANTS AND PROJECT

CITY: CIP City Engineer: Daniel Haskins, P.E.
Public Works & Utilities Department
P.O. Box 4008, Mail Stop 407 Chandler, AZ 85244-4008
Phone: 480-782-3335 Email: Daniel.haskins@chandleraz.gov

CITY: Construction Project Manager: Raymond.Potts
Public Works & Utilities Department
P.O. Box 4008, Mail Stop 407 Chandler, AZ 85244-4008
Phone: 480-782-3326 Email: Raymond.Potts@chandleraz.gov

Contractor:

Legal Company Name:	Combs Construction Company, Inc.
Mailing Address:	PO Box 10789 Glendale, AZ 85318
Physical Address:	1903 West Parkside Lane Suite 100 Phoenix, AZ 85027
Arizona Roc No.:	100380
Federal Tax Id No.:	85-0744516
State Where Organized:	Arizona
Business Organization:	Corporation
Statutory Agent Name:	Ryan Combs
Statutory Agent Mailing Address:	PO Box 10789 Glendale, AZ 85318
Statutory Agent Physical Address:	1903 West Parkside Lane Suite 100 Phoenix, AZ 85027

Contractor's Authorized Project Representative:

Name:	Ryan Combs
Title:	President
Phone:	602-920-9314
Email:	ryan@combsaz.com

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PROJECT DESCRIPTION:

The Taxiway B Improvements Phase I: Taxiway L to Taxiway N project includes a partial extension of the existing Taxiway B by approximately 1,300 feet. The project includes new taxiway and shoulder pavement, pavement markings, grading, lighting, and electrical improvements. The taxiway will be 40 feet wide, and the paved shoulders will be 10 feet wide, both to match existing.

PROJECT LOCATION:

Chandler Municipal Airport

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ARTICLE 2 - AGREEMENT DOCUMENTS

2.1 AGREEMENT DOCUMENTS

The Agreement between City and Contractor will consist of the following Agreement Documents:

1. This Construction Services Agreement and all of its Exhibits, including Project Plans and Technical Specifications.
2. General Conditions and General Conditions Appendices, incorporated by reference.
3. Project Specific Special Provisions as set forth in Exhibit A, incorporated by reference.
4. Project Bid Proposal.

2.2 In the event of any inconsistency, conflict, or ambiguity between or among the Agreement Documents, the Agreement Documents will take precedence as described in Section 14.1.4 of the General Conditions.

2.3 DEFINITIONS

The definitions in Section 2 of the General Conditions apply to all the Agreement Documents, including this Agreement.

ARTICLE 3 - CONSTRUCTION SERVICES

3.1 GENERAL

3.1.1 Scope of Work. All terms and conditions are set forth in the Agreement. Any terms and conditions and exceptions noted in the Contractor's proposal or other documents do not apply unless agreed to in this Agreement or an approved addendum.

3.1.2 Contractor agrees this is a Unit Price Agreement. Contractor agrees at its own cost and expense, to do all Work necessary required to fully, timely and properly complete the construction of the Project in strict accordance with the Agreement Documents in a good and workmanlike manner, free and clear of all claims, liens, and charges whatsoever, in the manner and under the conditions specified, within the Agreement time.

3.1.3 Contractor must provide all of the labor and materials, and perform the Work in accordance with Section 4 of the General Conditions. Some, but not all, of the major components of the Construction Services and the corresponding subsections of Section 4 of the General Conditions are set forth below.

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3.1.4 At all times relevant to this Agreement and performance of the Work, the Contactor must fully comply with all Laws, Regulations, or Legal Requirements applicable to City, the Project and the Agreement, including, without limitation, those set forth on attached Exhibit A.

3.1.5 Contractor must perform the Work under this Agreement using only those firms, team members and individuals designated by Contractor consistent with Contractor's accepted Bid, or otherwise, approved by City pursuant to the General Conditions. No other entities or individuals may be used without the prior written approval of the Project Manager.

3.1.6 Contractor must comply with all terms and conditions of the General Conditions.

3.1.7 In the event of a conflict between this Agreement and the General Conditions or an exhibit hereto or appendix thereto, the terms of this Agreement will control.

3.1.8 Ownership of Work Product. Notwithstanding anything to the contrary in this Agreement, all Work Product prepared or otherwise created in connection with the performance of this Agreement, including the Work, are to be and remain the property of City. For purposes of this provision, "Work Product" will include all designs, drawings, plans, specifications, ideas, renderings and other information or matter, in whatever form created (e.g., electronic or printed) and in all media now known or hereinafter created. All Work Product will be considered Work Made for Hire as defined in the United States Copyright Act 17 U.S.C. § 101 (Copyright Act). If for any reason, any such Work is found not to be a Work Made for Hire, Contractor hereby transfers and assigns ownership of the copyright in such Work to City. The rights in this Section are exclusive to City in perpetuity.

3.2 CONTRACTOR'S PRE-AGREEMENT AND PRE-WORK DELIVERABLES

3.2.1 The Contractor must provide the Deliverables in accordance with Section 4.2 of the General Conditions.

3.3 PRE-CONSTRUCTION CONFERENCE

Contractor must attend the Pre-Construction Conference in accordance with Section 4.3 of the General Conditions.

3.4 PERFORMANCE OF THE WORK (INCLUDING FIELD MEASUREMENTS, SUBCONTRACTORS, AND SUPPLIERS)

Contractor must perform the Work in accordance with Section 4.4 of the General Conditions.

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3.5 **CONTROL OF THE PROJECT SITE**

Contractor must control and maintain the Project Site in accordance with Section 4.5 of the General Conditions.

3.6 **PROJECT SAFETY**

Contractor must implement and enforce Project safety in accordance with Section 4.6 of the General Conditions.

3.7 **MATERIALS QUALITY, SUBSTITUTIONS AND SHOP DRAWINGS**

Contractor must provide materials testing and submit substitute materials and Shop Drawings in accordance with Section 4.7 of the General Conditions.

3.8 **PROJECT RECORD DOCUMENTS**

Contractor must maintain and make available the Project Record Documents in accordance with Section 4.8 of the General Conditions.

3.9 **WARRANTY AND CORRECTION OF DEFECTIVE WORK**

Contractor must provide warranties and correct defective Work in accordance with Section 4.9 of the General Conditions.

ARTICLE 4 - CITY RESPONSIBILITIES

4.1 City will have the responsibilities, and provide the information specified in, and subject to the conditions set forth in, Section 5 of the General Conditions.

ARTICLE 5 - AGREEMENT TIME

5.1 **GENERAL**

5.1.1 The total Agreement Duration is 90 Calendar Days (including Substantial Completion by 60 Calendars Days and Final Acceptance by 90 Calendar Days).

5.1.2 The Agreement Time will start with the Notice to Proceed (NTP) and end with Final Acceptance, as set forth in Article 5.4 below.

5.1.3 The Agreement Time will be as set forth in the Project Schedule. Contractor agrees that it will commence performance of the Work and complete the Project through Final Acceptance within the Agreement Time.

5.1.4 Time is of the essence of this Agreement for the Project, and for each phase and designated Milestone thereof.

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5.1.5 Failure on the part of Contractor to adhere to the approved Project Schedule will be deemed a material breach and sufficient grounds for termination of this Agreement by City.

5.2 PROJECT SCHEDULE

5.2.1 The Project Schedule will be updated and maintained throughout Contractor's performance under this Agreement in accordance with Section 6.2 of the General Conditions.

5.2.2 Work must be completed to meet the following milestones after the Notice to Proceed:

	Milestone		Time	Liquidated damages for delay	
1.		within	days	$	per calendar day

5.3 SUBSTANTIAL COMPLETION

Substantial Completion must be achieved no later than the Substantial Completion Date set forth in the Project Schedule. Substantial Completion will be determined in accordance with Section 6.3 of the General Conditions.

5.4 FINAL ACCEPTANCE

5.4.1 Final Acceptance will be obtained within the time period set forth in the Project Schedule.

5.4.2 Final Acceptance will be issued pursuant to Section 6.5 of the General Conditions.

5.5 LIQUIDATED DAMAGES

5.5.1 Substantial Completion Liquidated Damages. Contractor acknowledges and agrees that if Contractor fails to obtain Substantial Completion of the Work within the Agreement Time, City will sustain extensive damages and serious loss as a result of such failure. The exact amount of such damages will be extremely difficult to ascertain. Therefore, City and Contractor agree that if Contractor fails to achieve Substantial Completion of the Work within the Agreement Time, City will be entitled to retain or recover from Contractor, as liquidated damages and not as a penalty, the sum per calendar day as indicated in MAG § 108.9.

5.5.2 Final Acceptance Liquidated Damages. For the same reasons set forth in Article 5.5.1 above, City and Contractor further agree that if Contractor fails to achieve Final Acceptance of the Work within the Agreement Time, City will be entitled to retain or recover from Contractor, as liquidated damages and not as a penalty, the sum per

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calendar day as indicated in MAG § 108.9 commencing from the actual date of Substantial Completion or Final Acceptance as required under the Agreement.

5.5.3 MAG Liquidated Damages. Liquidated damages provisions in MAG § 108.9 will apply.

5.5.4 City may deduct liquidated damages described in this Article 5.5 from any unpaid amounts then or thereafter due Contractor under this Agreement. Any liquidated damages not so deducted from any unpaid amounts due Contractor will be payable to City at the demand of City, together with interest from the date of the demand at the highest lawful rate of interest payable by Contractor.

5.6 MUTUAL WAIVER OF CONSEQUENTIAL DAMAGES ONLY

5.6.1 Contractor and City waive claims against each other for consequential damages arising out of or relating to this Agreement. This mutual waiver includes.

1. Damages incurred by City for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and

2. Damages incurred by Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit except anticipated profit arising directly from the Work.

5.6.2 This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination of this Agreement. Nothing contained in this Article 5.6 will be deemed to preclude an award of liquidated damages, when applicable, in accordance with Article 5.5 above.

5.6.3 Nothing herein will be deemed to constitute a waiver of any other remedy available to City in the event of Contractor's default under this Agreement prior to full performance of the Work including, as applicable, specific performance or completion of the Work on behalf of Contractor, the cost and expense of which will be offset against any monies then or thereafter due to Contractor (if any) and otherwise immediately reimbursed to City by Contractor.

ARTICLE 6 - AGREEMENT PRICE

6.1 AGREEMENT PRICE

6.1.1 In exchange for Contractor's full, timely, and acceptable performances and construction of the Work under this Agreement, and subject to all of the terms of

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this Agreement, City will pay Contractor the "Agreement Price," which is $1,236,949.70**.**

6.1.2 The Agreement Price is all-inclusive and specifically includes all fees, cost, insurance and bond premiums, and taxes of any type necessary to fully, properly and timely perform and construct Work.

6.2 **CHANGES TO AGREEMENT PRICE**
Shall be determined under Section 9 of the General Conditions.

ARTICLE 7 - PAYMENT

Payments will be made to Contractor in accordance with Section 8 of the General Conditions.

ARTICLE 8 - CHANGES TO THE AGREEMENT

Changes to the Agreement may be made in strict accordance with Section 9 of the General Conditions.

ARTICLE 9 - SUSPENSION AND TERMINATION

This Agreement may be suspended or terminated in accordance with Section 10 of the General Conditions.

ARTICLE 10 - INSURANCE AND BONDS

10.1 Contractor must provide insurance in accordance with Sections 11.1 through 11.3 of the General Conditions. Contractor must provide proof of such insurance and all required endorsements in forms acceptable to City prior to commencing any Work under this Agreement.

10.2 Contractor must provide performance and payment bonds to City in Accordance with Section 11.4 of the General Conditions and A.R.S. § 34-222.

10.3 Failure to provide proof of insurance and the required endorsements, or the required bonds, in forms acceptable to City, will be a material breach and grounds for termination for cause of this Agreement.

ARTICLE 11 - INDEMNIFICATION

Contractor must have and assume the indemnity obligations set forth in Section 12 of the General Conditions.

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ARTICLE 12 - DISPUTE RESOLUTION

Any claims or disputes relating to this Agreement will be resolved according to the dispute resolution process set forth in Section 13 of, and Appendix 6 to, the General Conditions.

ARTICLE 13 - FORCED LABOR OF ETHNIC UYGHURS PROHIBITED By entering into this Agreement, Contractor certifies and agrees Contractor does not currently use and will not use for the term of this Agreement: (i) the forced labor of ethnic Uyghurs in the People's Republic of China; or (ii) any goods or services produced by the forced labor of ethnic Uyghurs in the People's Republic of China; or (iii) any contractors, subcontractors or suppliers that use the forced labor or any goods or services produced by the forced labor of ethnic Uyghurs in the People's Republic of China.

SIGNATURE PAGE TO FOLLOW

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IN WITNESS WHEREOF, the Parties hereto have executed this Agreement through their duly authorized representatives and bind their respective entitles as of the effective date.

"CITY"
CITY OF CHANDLER

Mayor

RECOMMENDED BY:

Daniel Haskins May 5, 2025

Daniel Haskins, P.E.
CIP City Engineer

APPROVED AS TO FORM:

City Attorney

ATTEST:

City Clerk Seal

"CONTRACTOR"
COMBS CONSTRUCTION COMPANY, INC.

May 2, 2025

Signature Date

Ryan Combs

Print Name

President

Title

ryan@combsaz.com

Signer Email Address

EXHIBIT A

PROJECT SPECIFIC
SPECIAL PROVISIONS

4.2.7 Aerial Construction Photography
General Conditions Section 4 Subsections 4.2.7.1 & 4.2.7.2 are not applicable to this project.

4.2.8 Government Approvals and Permits
General Conditions Section 4 Subsection 4.2.8.1, City permit fees will be paid internally by the City and all other fees will be the responsibility of the Contractor.

Subletting of Agreement
Contractor must perform, with his own organization, work amounting to not less than 50 percent of the total Agreement cost.

Failure to submit Subcontractor's List Form, demonstrating self-performance not less than 50 percent of the total Agreement cost, will cause the bid to be deemed non-responsive.

Bidders should contact the Arizona Registrar of Contractors for information on license requirements.

EXHIBIT B

GENERAL CONDITIONS

GENERAL CONDITIONS

Approved date: July 20, 2022

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SECTION 1 - SCOPE OF THESE GENERAL CONDITIONS

These General Conditions encompass provisions that apply, and are incorporated into all construction Agreements entered into by the City of Chandler, unless otherwise specifically excluded in the executed Agreement.

SECTION 2 - GENERAL DEFINITIONS

Allowance: A specific amount for a specific item of Work, if any, that City agrees has not been sufficiently designed, detailed, or selected (including design changes from 90% to 100% as authorized by and at the discretion of the City) at the time the Agreement Price is agreed to for Contractor to provide a definitive price.

Alternate Systems Evaluations or Alternative Analysis: Alternatives for design, means and methods or other scope considerations that are evaluated using value analysis principles and have the potential to reduce construction costs while still delivering a quality and functional Project that meets City requirements.

Change Order: A written instrument issued after execution of the Agreement Documents signed by City and Contractor, stating their agreement upon all of the following: the addition, deletion or revision in the scope of services or deliverables; the amount of the adjustment to the Agreement Price, the extent of the adjustment to the Agreement Time, or modifications of other agreement terms. The Agreement Price and the Agreement Time may be changed only by Change Order.

Consultant: Person or firm that provides professional services.

City (Owner or OWNER): City of Chandler, a municipal corporation, with whom Contractor has entered into the Agreement and for whom the Work or Services are to be provided pursuant to the Agreement(s).

Contingent Bid Items: This is a minor bid item which is likely, but not certain, to occur during the course of work. If the Engineer determines that this work is required, the Contractor will accomplish the work and payment will be made based on the contingent unit bid price included in the proposal. Since the quantity listed in the proposal is primarily for bid comparison, the amount of work required by the Engineer may vary materially from this.

Agreement: The written agreement executed between City and Contractor, including all of the Agreement Documents.

Agreement Documents: The documents which together form the Agreement between City and Contractor, as identified in Article 2 of the Agreement, or are otherwise incorporated into the Agreement, including the Agreement, the exhibits thereto, these General Conditions, any Notice to Proceed, and any Job Order (if applicable), the Plans and Specifications, Project Schedule, written and properly executed Change Orders, MAG Specifications and City's amendments thereto, and any other documents so designated in the Agreement.

Agreement Price: The agreed-upon price to be paid to Contractor for full, timely, and acceptable completion of the Work or Services under the terms of the Agreement.

Agreement Time(s): The number of calendar days or the dates related to the applicable phase, Substantial Completion, or Final Acceptance as stated in Agreement Documents. Agreement Time starts

with the Notice to Proceed (NTP) and ends with Final Acceptance. The Agreement Time is set forth in the Agreement and is based upon the Project Schedule agreed to by City in writing.

Contractor: The person or business association with whom City has entered into an agreement for construction related Work or Services in relation to the Project at issue.

Contractor Payment Request: The form that is accepted by City and used by Contractor in requesting progress payments or final payment and which must include such supporting documentation as is required by the Agreement Documents or City.

Construction Budget: The City's budget for construction of the Project.

Construction Documents: The Plans, Specifications, and Drawings prepared and issued by the Design Professional and approved by City for construction, meaning the documents are sealed by the Design Professional (as required), acceptable for permitting and incorporated into the Agreement by this reference. All amendments and modifications to the Construction Documents must be approved in writing by City prior to incorporation into the Agreement.

Cost of the Work: The term Cost of the Work will mean costs necessarily incurred by Contractor in the proper performance of the Work. Such costs will be at rates not higher than the standard paid at the place of the Project except with prior consent of City.

Critical Path Method (CPM): A scheduling technique which identifies the logical sequence of the activities occurring in a Construction Project, the anticipated time required to complete each activity in the Project, and the activities that must be completed on schedule to finish the Project within the anticipated time. Typically, activities are arranged in a network that shows both activities and their dependencies. CPM is also used as a management technique which enables contracting parties to predict when activities may occur so that resources can be effectively used and limitations can be identified.

Critical Path: Critical Path is the sequence of project network activities which add up to the longest overall duration. Once established in the Project Schedule, the Critical Path for the Project must not be changed without prior written approval of City.

Day: Calendar day(s) unless otherwise specifically stated in the Agreement Documents.

Design Professional: The qualified, licensed person, firm or corporation who furnishes design and construction administration services required under the Agreement Documents. These services may include, but are not limited to: development of Construction Drawings and Documents, review of Contractor Submittal(s), review of and response to Requests for Information, approval and certification of progress payment applications, construction administration, and construction agreement close out.

Differing Site Conditions: Concealed or latent physical conditions or subsurface conditions at the Site that, (i) materially differ from the conditions indicated in the Agreement Documents, or (ii) are of an unusual nature, differing materially from the conditions ordinarily encountered and generally recognized as inherent in the Work at the general area of the Site. Caliche, rock, hard-digging or sandy/silty soil encountered on a project is not considered a "Differing Site Condition."

Drawings (Plans): Documents, which visually represent the scope, extent and character of the Work to be furnished and performed by Contractor during the construction phase and which have been prepared

or approved by the Design Professional and City. These documents include Drawings that have reached a sufficient state of completion and released by Design Professional solely for the purposes of review and use in performing constructability or bid-ability reviews by Contractor and in preparing cost estimates (e.g. Master Planning and Programming, Schematic Design, Design Development, and Construction Drawings), but *"not for construction*." Shop Drawings are not Drawings as so defined.

Final Acceptance: The City's acceptance of the facility or project from the Contractor after all Work is completed, tested, and inspected in accordance with the Agreement requirements. Final Acceptance results in a Letter of Acceptance (LOA).

Fixed Price: A fixed price or amount for an Agreement Price, Scope of Work, materials, or other item under an Agreement, Change Order, or other agreement, which City agrees, in writing, to pay instead of the actual cost.

Float: The number of Days by which an activity can be delayed without lengthening the Critical Path and extending the Agreement Time. Unless otherwise expressly agreed in writing, all Float belongs to City.

Laws, Regulations, or Legal Requirements: Any and all applicable laws, rules, regulations, ordinances, codes and orders applicable to the Project of any and all governmental bodies, agencies, authorities and courts having jurisdiction and any applicable provisions of the Development Agreement for the Project (if any), including, without limitation, those provisions relating to the design and construction of the Project.

Line Item: The individual elements of Work identified on a bid or other schedule and associated with a price or a unit price and quantity particular to that individual element of the Work. Also refers to individual items of work within the Schedule of Values.

Liquidated Damages: Designated damages for the City to collect as compensation upon a specific breach (example: late delivery).

Long-Lead Item: Long-lead item refers to the equipment, product, or system that is identified at the earliest stage of a project to have a delivery time long enough to affect directly the Critical Path/the overall lead time of the project.

MAG: The Maricopa Association of Governments.

MAG Specifications: The most current version of the Uniform Standard Specifications for Public Works Construction published by MAG.

MAG Standard Details: The most current version of the Uniform Standard Details as published by MAG.

Minor change: A change in the Work having no impact on cost or time or the City-approved design intent, as determined by City.

Notice to Proceed (NTP): A written notice given by City to Contractor fixing the date on which Contractor will start to perform Contractor's obligations under the Agreement.

Project: The Project specified in the Agreement (including a Job Order).

Project Manager: The Project Manager designated in Article 1 of the Agreement, or any successor thereto

designated by City. The Project Manager has the authority to act on behalf of City, as delineated and limited by the Agreement Documents and applicable law. And City will communicate with Contractor through the Project Manager. However, the Project Manager has no authority to bind City or City Council in contravention of any City code, State or Federal statute or regulation, or these General Conditions.

Project Schedule: The schedule for the completion of the Project agreed to and required by City.

Project Specific Conditions: Additional conditions which apply to the specific Project and Scope of Work which are set forth in Exhibit D of the Agreement.

Project Team: The Project Team consisting of the Design Professional, Contractor, Project Manager, and such others as City may designate.

Punch List: The list initially prepared by Contractor pursuant to the Agreement Documents, reviewed and supplemented by the Project Manager (and at the sole option of the Project Manager, the Design Professional) and approved by City containing items of incomplete work not impacting Substantial Completion, if allowed for under the Agreement, and to be completed or corrected by Contractor after Substantial Completion and before Final Acceptance in accordance with the Agreement Documents.

Quality Assurance (QA) Testing: Testing performed to verify the accuracy and applicability of the QC testing results and to ascertain that the materials installed meet the specified levels of quality in accordance with the Agreement Documents.

Quality Control (QC) Testing: Testing performed to assure that the materials installed comply with the requirements in the Agreement Documents.

Requests for Information (RFIs): Formal written request from Contractor to City or Design Professional for the Project seeking clarification or additional information needed for Contractor to properly complete the Work or Services under the Agreement. City may require RFI's to be submitted on a specific form or in a specified format.

Schedule of Values (SOV): The specified document prepared by Contractor, and approved and accepted by City, which divides the Agreement Price into pay items, such that the sum of all pay items equals the Agreement Price for the construction phase Work, or for any portion of the Work having a separate specified Agreement Price.

Scope of Work: The scope of work agreed to or required by City and incorporated into the Agreement as Exhibit A.

Shop Drawings: All drawings, diagrams, schedules and other data specifically prepared for the Work by Contractor or a Subcontractor, Sub-subcontractor, manufacturer, supplier or distributor to illustrate some portion of the Work.

Site: The land or premises on which the Project is located.

Specifications: The part(s) of the Agreement Documents for the construction phase consisting of written technical descriptions of materials, equipment, construction systems, standards and workmanship as applied to the Work and certain administrative details applicable thereto. Where specified, the Project must be constructed using the current Uniform Standard Specifications and Details for Public Works

Construction as furnished by the Maricopa Association of Governments, as amended by City.

Subconsultant: A person, firm or corporation having an Agreement with Consultant/Contractor to furnish services required as its independent professional associate or consultant with respect to the Project.

Subcontractor: An individual or firm having a direct Agreement with Contractor or any other individual or firm having an Agreement with the aforesaid contractors at any tier, who undertakes to perform a part of pre-construction services or construction phase Work at the Site for which Contractor is responsible. Subcontractors must be selected through the Subcontractor selection process described in the Agreement Documents, if any.

Substantial Completion: The date when the City determines that the Work (or separable units of Phases as provided in the Agreement Documents) is essentially and satisfactorily complete in accordance with the Agreement Documents such that the Project is ready for use by the City for its intended purpose, opening to the general public, full occupancy or use by City (including, without limitation, all separate units, or rooms, facilities, access, income-generating areas, and all areas serving the general public, as applicable, must be ready for full operation without material inconvenience or discomfort), including, to the extent applicable to the Work, the following: all materials, equipment, systems, controls, features, facilities, accessories, and similar elements are installed in the proper manner and in operating condition, inspected, and approved; surfaces have been painted; masonry and concrete cleaned with any sealer or other finish applied; utilities and systems connected and functioning; site work complete; permanent heating, ventilation, air conditioning, vertical transportation, and other systems properly operating with proper controls; lighting and electrical systems installed, operable and controlled; paving completed, signage installed, and other work as applicable, has been performed to a similar state of essential and satisfactory completion.

Supplier: A manufacturer, fabricator, distributor, or vendor having a direct Agreement with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the construction phase Work by Contractor or any Subcontractor.

Total Float: Number of Days by which pre-construction services or construction phase Work or any part of the same may be delayed without necessarily extending a pertinent Agreement Time or schedule milestone in the Project Schedule.

Work: The entire completion of construction or the various separately identifiable parts thereof, required to be furnished during the construction phase. Work includes and is the result of performing or furnishing labor and furnishing and incorporating materials, resources and equipment into the construction, and performing or furnishing services and documents as required by the Agreement Documents for the construction phase.

Writing: Typing, printing, photography and other modes of representing or reproducing words in a visible form, including email, and expressions.

SECTION 3 - STANDARD SPECIFICATIONS AND DETAILS

3.1 City operates under the latest revision of the MAG Specifications and MAG Standard Details as amended by City. City's current amendment to the MAG Specifications, part of the City's Unified Development Manual, may be found and downloaded from City's website at http://www.chandleraz.gov.

3.2 Copies of the MAG Specifications and MAG Standard Details are available at the Maricopa Association of Governments office, 302 N. 1st Avenue, Suite 300, Phoenix, Arizona. They may also be downloaded from their website at: http://www.azmag.gov/Newsroom/Publications

3.3 The MAG Specifications and Standard Details and City's amendments thereto are incorporated into the Agreement by this reference.

SECTION 4 - CONTRACTOR'S RESPONSIBILITIES FOR CONSTRUCTION SERVICES

4.1 **GENERAL**

4.1.1 Contractor must construct the Work in accordance with the Agreement Documents and as outlined in Exhibit A of the Agreement to the satisfaction of City, exercising the degree of professional care, skill, diligence, quality and judgment that a professional construction manager engaged, experienced and specializing in the construction management of construction and facilities of similar scope, function, size, quality, complexity and detail in urban areas throughout the United States comparable to Chandler, Arizona would exercise at such time, under similar conditions. Contractor must, at all times, perform the Work in conformance with sound and generally accepted engineering principles and construction management and construction contracting practices.

4.1.2 If Contractor observes errors, discrepancies or omissions in the Agreement Documents, Contractor must promptly notify the Design Professional and City and request clarification. If Contractor, with the exercise of reasonable care, should have recognized such error, inconsistency, omission, or difference and fails to report it to City, and if Contractor proceeds with the Work affected by such observed errors, discrepancies or omissions, without receiving such clarifications, Contractor does so at its own risk and will be liable to City for damages resulting from proceeding without clarification.

4.1.3 Project Team and agents of each of them, testing agencies and governmental agencies with jurisdictional interests will be provided access to the Work at reasonable times for their observation, inspection, and testing. Contractor must provide proper and safe conditions for such access.

4.1.4 Contractor must comply with, and require all Subcontractors to comply with, the Arizona Contractors' license laws, including all requirements with respect to being duly registered and licensed.

4.1.5 Contractor must ensure that all employees performing any Work for which Contractor is responsible have a legal right to live and work in the United States. In addition, all compensation of any such employee must meet all applicable requirements of the Fair Labor Standards Act (FLSA) and Federal Minimum Wage laws.

4.1.6 Contractor must comply with the Immigration Reform and Control Act of 1986 (IRCA). Contractor understands and acknowledges the applicability of the IRCA activities. Contractor agrees to comply with the IRCA while performing their work and to permit City inspection of Contractor personnel records to verify such compliance.

4.1.7 Pursuant to MAG Specifications §§ 107.4, Contractor must report immediately any discovery of archeological ruins or artifacts. Excavation must stop immediately so that City can decide on the pertinent steps to follow such discovery.

4.1.8 All property owners that may be affected by the proposed construction activities must be notified of the scope, duration of the construction activities and possible interference with their day-to-day activities by Contractor prior to start of construction. In addition, individual residential or commercial interferences, such as driveway restrictions, water outages, and all other Work adjacent to residence/business, require 48-hour notification in advance of specific adjoining Work. Notification may be through door hangers or other procedures approved by the City.

4.1.9 Access must be maintained to adjacent properties at all times during construction. Where property has more than one point of access, no more than one access will be restricted or closed at any one time. Access to adjacent private driveways will be maintained during all non-working hours.

4.1.10 Contractor must furnish and erect construction signs in accordance with Project Specifications. The signs must be professionally prepared and subject to approval by City, must be maintained by Contractor for the duration of the project, and must be removed by Contractor during the final project clean up.

4.1.11 The number of signs required, the size, shape, installation requirements and information to be included for construction signs is established on the detail sheet, provided, however, signs must be a minimum of 4 foot by 8 foot and must be installed so that the bottom of the sign is at least 4 foot above grade. No direct payment will be made for furnishing and erecting construction signs. The cost thereof must be included in other items for which direct payment is made. Sign locations will be determined by City.

4.1.12 All required construction signs must be installed by Contractor within 7 Days of Notice to Proceed.

4.1.13 The Work to be accomplished under these Agreement Documents has been designed for City by a Design Professional retained by City for this purpose. It is understood that normal construction Administration for the purpose of interpretation of the Agreement Documents is provided by City. Should any services of the Design Professional be required to assist in the corrections of errors or omissions by Contractor, or services of the Design Professional be required because of changes in structure or equipment where Contractor has requested approval of substitute methods or material, or any other items detailed herein below, those services will be provided by the Design Professional at the standard hourly rates previously negotiated with City and must be paid for by the Contractor.

4.1.14 Contractor must reimburse City for costs incurred by the Design Professional for additional services to the Project through no fault of City or the Design Professional including, but not limited to, the following conditions:

a. Additional Site visits, investigations, inspections, design work or reports by the Design Professional which are required due to damages to existing facilities or completed Work caused by the Contractor in his performance, Contractor's negligence, or Contractor's Work which is rejected as defective or as failing to conform to the Agreement Documents;

b. Design Professional construction phase services rendered on the project during the time the project remains incomplete after the Agreement date of final completion will be charged to Contractor at a rate previously negotiated City; and

c. All retesting required due to the failure of Contractor's Work to meet the requirements of the Agreement Documents will be at Contractor's expense. All standby and travel time by the City's testing lab, the Design Professional or City due to Contractor's inability to be prepared for testing at the agreed upon time will be at the Contractor's expense.

4.1.15 City may withhold from any payment otherwise due to Contractor any amounts necessary to pay the Design Professional for such additional services as provided herein above.

4.1.16 Contractor will not be required to bear additional costs incurred by City due to errors by the Design Professional.

4.2 **CONTRACTOR'S PRE-AGREEMENT AND PRE-WORK DELIVERABLES**

4.2.1 Prior to award of the Agreement, Contractor must execute Agreement and deliver to City. Failure to do so may delay Agreement award. Contractor must also provide to City its Contractor's License classification and number and its Federal Tax I.D. number.

4.2.2 Before beginning any Work under the Agreement, Agreement must be fully executed by City.

4.2.3 After Agreement award, City will issue to Contractor an award letter. At that time Contractor must deliver to City such bonds and certificates of insurance with endorsements in such amounts (and other evidence of insurance requested by City) required under Section 11 of these General Conditions, and as the Agreement requires.

4.2.4 As evidence of Workmen's Compensation Insurance, Contractor must, upon request, provide a letter of certification from the Industrial Commission of Arizona that Contractor is insured by the State Compensation Fund or is an authorized self-insurer or a certificate of insurance issued by an insurance company authorized by the Insurance Department of Arizona to write Workmen's Compensation and Occupational Disease Insurance in the State of Arizona.

4.2.5 Within 10 Days of the date of the executed Agreement letter issued by City, Contractor must submit to City for review and acceptance the following items:

4.2.5.1 Comprehensive construction Project Schedule including a Critical Path Method (CPM) diagram schedule as described in Section 6.2. Project Schedule must be in Microsoft Project standard file format. Within 10 Days of receipt of City's comments, Contractor must make all required corrections, adjustments, and additions to complete the Project Schedule and resubmit to City for review.

4.2.5.2 Preliminary schedule of submittals and Shop Drawings. Within 10 Days of receipt of City's comments, Contractor must submit the corrected and completed schedule of Shop Drawings submissions for approval. Contractor's schedule of Shop Drawings and sample submittals will be acceptable to City if it provides a workable arrangement for reviewing and processing the required submittals.

4.2.5.3 Schedule of Values in a form specified by City reflecting the subcontracts and other categories that will be used to submit Pay Applications for the Work. The total amount of the Schedule of Values must not be greater than the Agreement Price. The Schedule of Values will be reviewed at the Pre-Construction Conference and revised by Contractor within 10 Days after Pre-Construction Conference in response to comments and questions from

City. Once accepted by City in writing, the Schedule of Values for the Project must not be changed without the prior written approval of City.

4.2.6 Video Recording Requirement. Prior to performing any Work, Contractor must document the existing conditions of the Site, all other areas where Work will occur and all adjacent areas that may be impacted by the Work via digital video format. Contractor must video record and index all areas, features, buildings and other public and private improvements that could potentially be impacted by the Work. Video recording must be coordinated with City. When video recording private property, Contractor must also coordinate the video recording with the private property owner, if possible. Contractor must provide City with a copy of said digital video format prior to performing any Work.

4.2.7 Aerial Drone Construction Photography.

4.2.7.1 If Agreement duration is greater than 90 calendar days, Contractor must engage a professional unmanned aerial vehicle (UAV) aerial pilot to photograph the Site prior to construction mobilization, at three-month intervals during construction, and following final inspection. Drone camera specifications must meet the following minimum requirements:

a. 1-inch CMOS
b. Pixels: 20M
c. FOV 84 8.8 mm/24 mm (35 mm format equivalent) f/2.8-f/11 auto focus at 1 m-
d. For photographing: 16.9 Aspect Ratio: 5472x3078
e. For video shooting: MP4/MOV/H.264
f. FHD: 1920x1080 120p @100Mbps
g. File format: High Definition (HD) JPEG for digital photos and HD MPEG 4 for digital video.
h. All metadata to be recorded including GPS data and preserved with photographs provided.

Interval	**JPEG**
3 month intervals	At an altitude (AGL) between 70-90 ft.
3 month intervals	Images to be taken every 50-100 ft. to be determined based on project scope.

4.2.7.2 Drone photos to be taken in sequential geographical order and then organized and provided in the same manner unless otherwise specified.

4.2.7.3 Photos to be provided digitally via an online file share service and/or by a USB drive to contractor.

4.2.7.4 Drone pilots to obey ALL local (city, county, state) UAV regulations as well as FAA UAV guidelines including, but not limited to, conducting all flights during daylight hours, not exceeding maximum altitude ceilings (depending on area), not flying over people, yielding to other aircraft.

4.2.7.5 Drone pilots must fly drone within visual line of sight (VSOL) and have visual spotter when needed. Drone pilots only to operate in favorable weather conditions when minimum visibility is 3 miles or greater.

4.2.7.6 Drone pilots to conduct a preflight checklist and visually inspect the entire flight path prior to flying to ensure a safe flight.

4.2.7.7 Airspace Authorizations. Operations in Class G airspace are allowed without air traffic control (ATC) permission. Operations in Class B, C, D and E airspace need ATC authorization. Drone pilots to schedule each flight in advance and based on airspace if required will notify nearby airports/control towers, etc.

4.2.8 Government Approvals and Permits.

4.2.8.1 Contractor must obtain all necessary permits for the Work and pay all applicable fees, unless otherwise noted on the Plans and in the Specifications. City permit fees will be paid internally by City. For bidding purposes, an allowance for all permit fees is included in the bid schedule under the item "allowance for permit fees." The Contractor will be paid for the actual cost of the permit fees upon submitting a receipt showing the fee Contractor has paid. Excluded from the above allowance are items such as all costs incurred by the Contractor in securing the permit except for the actual permit fee established by the agency, cost for all shutdowns or outages, cost for pole bracing, cost of permits for construction water, cost of construction water, cost for any additional insurance requirements, cost for any licenses, and other similar type costs. Contractor is specifically notified of the need to obtain the necessary environmental permits or file the necessary environmental and regulatory permit notices.

4.2.8.2 Copies of all permits and the associated notices must be provided to City prior to starting the permitted activity.

4.3 PRE-CONSTRUCTION CONFERENCE

4.3.1 Prior to the commencement of any Work, City will schedule a Pre-Construction Conference.

4.3.2 The purpose of this Conference is to establish a working relationship between Contractor, the utility firms, and various City agencies. The agenda will include critical elements of the Work schedule, submittal schedule, cost breakdown of major lump sum items, Payment Requests and processing, coordination with the involved utility firms, and emergency telephone numbers for all representatives involved in the course of construction.

4.3.3 Minimum attendance by Contractor at any mandatory meeting with City must be (1) Contractor's Representative, who is authorized to execute and sign documents on behalf of the firm, (2) Contractor's on-site Superintendent, and (3) Contractor's Safety Office, or other employee responsible for safety.

4.4 PERFORMANCE OF THE WORK (INCLUDING FIELD MEASUREMENTS, SUBCONTRACTORS, AND SUPPLIERS)

4.4.1 Unless otherwise provided in the Agreement Documents to be the responsibility of City or a separate Contractor, Contractor must provide through itself or Subcontractors the necessary supervision, labor, inspection, testing, start-up, material, equipment, machinery, temporary utilities and other temporary facilities to permit Contractor to complete the Work consistent with the Agreement Documents.

4.4.2 Contractor must perform all construction activities efficiently and with the requisite expertise, skill and competence to satisfy the requirements of the Agreement Documents. Contractor must at all times exercise complete and exclusive control over the means, methods, safety, sequences and techniques of construction.

4.4.3 Contractor's Superintendent must be present at the Site at all times that material Work

under this Agreement is taking place. Contractor's Superintendent or designee must be present at the Site at all times any other Work under this Agreement is taking place. Superintendent must not be replaced without written notice to City. Whenever the Superintendent is not present at a particular part of the Work where the City or Design Professional may desire to inform the Contractor relative to interpretation of the Drawings and Specifications or to disapproval or rejection of materials or Work performed, the City or Design Professional may provide such information in writing to the foreman or other worker in charge of the particular part of the Work in reference to which the information is given. Information so given will be as binding as if given to the Superintendent.

4.4.4 All elements of the Work must be under the direct supervision of a foreman or his designated representative on the Site who must have the authority to take actions required to properly carry out that particular element of the Work.

4.4.5 Working Hours. Except in connection with the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise indicated, all Work at the Site must be performed during regular working hours, and Contractor will not permit overtime work or the performance of Work on Saturday, Sunday or any legal holiday without City's written consent given after prior written notice to City. If it will become absolutely necessary to perform Work at night or on Saturdays, Sundays or legal holidays, the City must be informed at least 24 hours in advance of the beginning of performance of such Work. Only such Work will be done at night as can be done satisfactorily as determined by the City. Good lighting and all other necessary facilities for carrying out and inspecting the Work must be provided and maintained at all points where such Work is being done. Further, unless such non-normal work hours are performed at City's request or required by the Agreement Documents, Contractor must pay to City all additional costs incurred by City by reason of such non-normal working hours. Expenses incurred by City for overtime compensation must be reimbursed by Contractor as follows: (i) City staff at the rate set forth in current City Fee Schedule as published on City website, (ii) Design Professional and staff at the standard hourly rates previously negotiated with City, and (iii) all others at actual cost plus ten percent administrative overhead. Such costs may be deducted by City from any payments due to Contractor. Provided, however, if overtime work or work during other than normal hours is at the request of City and not due to Contractor delay, City will pay the cost of City overtime expenses.

4.4.6 Where the Agreement Documents require that a particular product be installed or applied by an applicator approved by the manufacturer, it is Contractor's responsibility to ensure the Subcontractor employed for such work is approved by the manufacturer. All materials and equipment must be stored, applied, installed, connected, erected, used, cleaned and conditioned in accordance with the instructions of the applicable manufacturer, fabricator, supplier or distributor, except as otherwise provided in the Agreement Documents; but no provisions of any such instructions will be effective to impose on City of Design Professional responsibility for the means, methods, techniques, sequences or procedures of construction or for safety precautions incident thereto.

4.4.7 Before starting the Work, Contractor must carefully study and compare the various Plans, Drawings, other Agreement Documents, and Specifications relative to that portion of the Work, as well as the information furnished by City, must take field measurements of any existing conditions related to that portion of the Work and must observe any conditions at the Site affecting it. The exactness of grades, elevations, dimensions, or locations given on any Drawings, or the Work installed by other contractors, is not guaranteed by City.

4.4.8 Before ordering materials or doing Work, Contractor and each Subcontractor must verify measurements at the Site and will be responsible for the correctness of such measurements. No extra charge or compensation will be allowed because of differences between actual dimensions and the dimensions indicated on the Agreement Documents, including the Drawings.

4.4.9 Ground Level Construction Photography.

4.4.9.1 The Contractor must furnish progress photographs of the project. The photographer selected by the Contractor must be approved by the City and must be either a commercial photographer or an individual experienced and equipped for such photography.

4.4.9.2 The Contractor must deliver to City all photographs taken during that period with each application for payment. If the current photographs do not accompany the application, the application will not be reviewed and will be returned to the Contractor as incomplete.

4.4.9.3 Photographs must be identified by use of typewritten labels affixed to the back of the photograph. The label must provide a description of the view, the direction from which the photograph was taken, the name of the project, City's project number, the name of Contractor and the date of the photography. The stationing must also be included for all pipeline installations.

4.4.9.4 Photographs must be taken during the construction period and must be of aesthetic composition and depict the progress of the Work from the beginning of construction through and including the finished product. City may vary the specified frequency so that significant progress or changes can be recorded on the photographs.

4.4.10 Underground Facilities.

4.4.10.1 The existence and number of facilities as shown on the Plans are estimated from information furnished by the particular utility. Contractor is responsible for field verification and location of all utilities prior to the start of construction. No field work will be allowed to start until Contractor has contacted Arizona 811 and all affected utilities have been located. In addition, Contractor must expose and physically locate all potentially conflicting utilities prior to construction. The actual locations of the utilities must be compared to locations shown on the Plans and any required changes in alignment and grade must be made at the time of construction in consultation with Project Manager. It is generally recognized and Contractor should anticipate that information from Arizona 811 or information from utility companies during project design, frequently fails to disclose all underground facilities. The fact that more utility lines or other underground facilities are located in the Project Site than shown on the Project Plans does not constitute an "unforeseen Condition" and such undisclosed underground facilities do not differ materially from the conditions which Contractor should expect. The provisions of Sections 105.4, 105.6, 107.11 and 109.8.1 of the MAG Uniform Standard Specifications for Public Works Construction apply and are incorporated herein by this reference.

4.4.10.2 Contractor is responsible for all coordination with utility companies. The provisions of Sections 105.4, 105.6, 107.11 and 109.8.1 of the MAG Uniform Standard Specifications for Public Works Construction strictly apply and no additional compensation will be paid to Contractor for delays due to utility work on the project.

4.4.11 Relocation of Existing Water Meters. When a service line has been extended and a line

setter installed in a meter box, City forces will re-install meter. No compression fittings will be utilized.

4.4.12 Water Turn-On or Turn-Off.

4.4.12.1 Contractor must coordinate all water line turn-ons and turn-offs through the City. Application must be made to the Municipal Utility Division and Contractor must pay the established charges. The City will close existing valves, but will not guarantee a bone-dry Shutdown.

4.4.12.2 Contractor must notify all customers affected by the turn-off not less than 48 hours in advance. Notification must be in writing, must give the reason for the turn-off and must give the estimated time and duration that water service will be interrupted. Contractor is also notified that water turn-off will not be permitted on the Day before and after Thanksgiving Day and Christmas Day.

4.4.12.3 No direct payment will be made to Contractor for turn-ons or turn-offs. Costs associated therewith will be included in other items for which direct payment is made.

4.4.13 Tests and Inspections.

4.4.13.1 Contractor must give City timely (at a minimum, twenty-four hours) notice of readiness of the Work for all required inspections, tests or approvals. Contractor must give timely notice to City in advance of backfilling or otherwise covering any part of the Work so that city representative may, if desired, observe such part of the Work before it is concealed. Whenever Contractor varies the normal period during which Work or any portion of it is carried on each Day, Contractor must give timely notice to City so that city representative may, if desired, be present to observe the Work in progress. If Contractor fails to give such timely notice, any Work done in the absence of city representative will be subject to rejection. If Contractor gives such notice to City, but then is not ready for such inspections, tests, approvals or observations at the time so noticed, Contractor must reimburse City for all costs incurred by the attendance of city representatives.

4.4.13.2 If any law, ordinance, rule, regulation, code, or orders of any public body having jurisdiction requires any Work (or part thereof) to be inspected, tested or approved, Contractor (unless another party is specified in the Agreement Documents) must assume full responsibility therefor, pay all costs in connection therewith and furnish City the required certificates of inspection, testing, or approval. Contractor must also be responsible for and must pay all costs in connection with any inspection or testing required by the Specifications in connection with City's acceptance of a manufacturer, fabricator, supplier or distributor of materials or equipment proposed to be incorporated in the Work, or of materials or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work. The cost of all other inspections, tests and approvals required by the Agreement Documents will be paid by City (unless otherwise specified).

4.4.13.3 All inspections, tests or approvals other than those required by law, ordinance, rule, regulation, code or order of any public body having jurisdiction must be performed by organizations acceptable to City and by the Design Professional if so specified.

4.4.13.4 Neither observations by City, the Design Professional nor inspections, tests or approvals by others will relieve Contractor from their obligations to perform the Work in accordance with the Agreement Documents.

4.4.14 Uncovering Work. If any Work that is to be observed, inspected, tested or approved is covered without written concurrence of City, it must, if requested by City be uncovered for observation. Unless Contractor has given City timely notice of Contractor's intention to cover such Work and City has not acted with reasonable promptness in response to such notice, Contractor must furnish all necessary labor, material and bear all the expenses of such uncovering, exposure, observation, inspection and testing and of satisfactory reconstruction, including compensation for additional professional services, and an appropriate deductive Change Order will be issued.

4.4.15 In all cases of interconnection of its Work with existing or other Work, Contractor must verify at the Site all dimensions relating to such existing or other Work. Any errors due to Contractor's failure to so verify all such grades, elevations, locations or dimensions must be promptly rectified by Contractor without any increase in the Agreement Price. Any design errors or omissions noted by Contractor during this review must be reported promptly to City.

4.4.16 Contractor must establish and maintain all construction grades, lines, levels, and benchmarks, and will be responsible for accuracy and protection of same. This Work must be performed or supervised by a licensed civil engineer or surveyor in the State of Arizona.

4.4.17 Contractor must photograph all buried piping of greater than four (4) inches in diameter prior to backfill.

4.4.18 Contractor is responsible for the proper performance of the work of Subcontractors and any acts and omissions in connection with such performance. Nothing in the Agreement Documents is intended or deemed to create any legal or contractual relationship between City and any Subcontractor or Sub-Subcontractor, including but not limited to any third-party beneficiary rights.

4.4.19 Contractor must coordinate the activities of all Subcontractors. Contractor must coordinate performance of the Work with City's Public Works & Utilities Department and other departments or agencies within City. The Design Professional and other contractors or parties involved in the Project. If City performs other work on the Project or at the Site with separate contractors under City's control, Contractor agrees to cooperate and coordinate its activities with those of such separate contractors so that the Project can be completed in an orderly and coordinated manner without unreasonable disruption.

4.4.20 Contractor will not substitute or change any Subcontractor or Supplier without the prior written approval of City. Any substitute or replacement Subcontractor or Supplier must be required to meet the same qualifications and selection criteria and process as the original Subcontractor or Supplier. If a Subcontract/Supplier selection plan has been approved by City, Contractor will follow that plan unless otherwise approved by City in writing.

4.4.21 Contractor must not change or replace any members of its Project team, including Contractor's Representative, Project Manager, or Superintendent, without an explanation for the change being given to City, and receiving prior written approval of the change from City, which approval will not be unreasonably withheld.

4.4.22 Subcontractors whose scope of work has a value greater than 15% of the total Agreement Price are required to furnish performance and payment bonds to Contractor, unless

otherwise approved in writing by City.

4.4.23 Contractor must comply with MAG Specification § 108.2 (E) unless otherwise specified in Agreement Documents.

4.5 CONTROL OF THE PROJECT SITE

4.5.1 Throughout all phases of construction, including suspension of Work, Contractor must keep the Site reasonably free from debris, trash and construction wastes to permit Contractor to perform its construction services efficiently, safely and without interfering with the use of adjacent land areas. Prior to Final Acceptance of the Work, or a portion of the Work, Contractor must remove all debris, trash, construction wastes, materials, equipment, machinery and tools arising from the Work or applicable portions thereof to permit City to occupy the Project or a portion of the Project for its intended use.

4.5.2 Contractor must take whatever steps, procedures or means necessary to prevent dust nuisance due to construction operations. The dust control measures must be maintained at all times to the satisfaction of City and in accordance with the requirements of the Maricopa County Bureau of Air Pollution Control Rules and Regulations.

4.5.3 Contractor must maintain Americans with Disabilities Act (ADA) and American National Standards Institute (ANSI) accessibility requirements during construction activities, including without limitation compliance with the 2010 regulations governing implementation of the ADA to the extent applicable. ADA and ANSI accessibility requirements must include, but not be limited to, parking, building access, areas of refuge, and emergency exit paths of travel. Contractor is responsible for the coordination of all Work to minimize disruption to residents and the public.

4.5.4 Only materials and equipment used directly in the Work will be brought to and stored on the Site by Contractor. When equipment is no longer required for Work, it must be removed promptly from the Site. Protection of construction materials and equipment stored at the Site from weather, theft, damage and all other adversity is solely the responsibility of the Contractor.

4.5.5 Contractor agrees all persons working on the Site must act at all times in the best interest of the Project and will comply with all applicable rules and regulations reasonably set forth by City related to the Site. Notwithstanding the foregoing or anything in this Agreement to the contrary, City may remove from the Site any individual who City deems in their reasonable discretion to be creating a disturbance or causing any problem on the Site.

4.5.6 Contractor will be responsible to City for the acts and omissions of Contractor's employees, Subcontractors and their agents and employees, and any other person performing any of the Work under an Agreement with Contractor, or claiming by, through or under Contractor, for all damages, losses, costs and expenses resulting from such acts or omissions.

4.5.7 City may conduct criminal, drive history, and all other requested background checks of Contractor and Subcontractor personnel performing Work or who have access to City's information, data, or facilities in accordance with City's current background check policies, or the provisions of the Project Specific Conditions. Any officer, employee or agent that fails to background check must be replaced immediately.

4.5.8 City will have a final authority, based upon security reasons: (i) to determine when

security clearance of Contractor's and Subcontractor's personnel is required; (ii) to determine the nature of the security clearance, up to and including fingerprinting personnel; and (iii) to determine whether or not any individual or entity may provide Services or perform Work under the Agreement.

4.5.9 If City objects to any personnel for any reasonable cause, then Contractor must, upon notice from City, remove such individual from the Project.

4.6 **PROJECT SAFETY**

4.6.1 The Project and all Work performed in relation thereto is governed by applicable provisions of the federal laws, including but not limited to, the latest amendments of the following:

a. Williams-Steiger Occupational Safety & Health Act of 1970, Public Law, 91-596.

b. Part 1910 and Part 1926 – Occupational Safety and Health Standards, Chapter XVII of Title 29, Code of Federal Regulations.

c. Part 1518 – Safety and Health Regulations for Construction, Chapter XIII of Title 29, Code of Federal Regulations.

4.6.2 Contractor is responsible for safety of the job Site for employees of Contractor as well as for members of the general public and others who may drive or walk through or be at the Site.

4.6.3 Contractor recognizes the importance of performing the Work in a safe manner so as to prevent damage, injury or loss to: (i) all individuals at the Site, whether working or visiting; (ii) the Work, including materials and equipment incorporated into the Work and stored On-Site or Off-Site; and (iii) all other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction; and (iv) the owners or tenants of adjacent property and their patrons, employees and invitees.

4.6.4 Contractor assumes responsibility for implementing and monitoring all safety precautions and programs related to the performance of the Work.

4.6.5 Contractor must provide a "competent person' as required by O.S.H.A regulations. The "competent person" must be identified at the Pre-Construction Conference with City advised in writing of any changes.

4.6.6 The "competent person" must make routine daily inspections of the Site and must hold weekly safety meetings with Contractor's personnel, Subcontractors and others as applicable.

4.6.7 Contractor and Subcontractors must comply with all legal and regulatory requirements relating to safety, as well as any City specific safety requirements set forth in the Agreement Documents, provided that such City-specific requirements do not violate any applicable legal and regulatory requirements.

4.6.8 Contractor will immediately report in writing any safety-related injury, loss, damage or accident arising from the Work to Project Manager and, to the extent mandated by Legal Requirements, to all government or quasi-government authorities having jurisdiction over safety-related matters involving the Project or the Work.

4.6.9 Contractor's responsibility for safety under this Section is not intended in any way to relieve Subcontractors and Sub-Subcontractors of their own contractual and legal obligations and responsibility for (i) complying with all Legal Requirements, including those related to health and safety matters, and (ii) taking all necessary measures to implement and monitor all safety precautions and programs to guard against injury, losses, damages or accidents resulting from their performance of the Work.

4.6.10 As between City and Contractor, Contractor is responsible to City for any and all the safety issues relating to the Work on the Project. Contractor must administer and manage the safety program. This will include, but not necessarily be limited to review of the safety programs of each Subcontractor. Contractor must monitor the establishment and execution of compliance with all applicable regulatory and advisory agency construction safety standards. Contractor's responsibility for review, monitoring, and coordination of the Subcontractor's safety programs will not extend to direct control over execution of the Subcontractors' safety programs. Notwithstanding Contractor's safety obligations to City, it is agreed and understood that each individual Subcontractor will remain controlling employer responsible for the safety programs and precautions applicable to its own work and the activities of other's work in areas designated to be controlled by such Subcontractor for purposes of workers compensation insurance coverage.

4.6.11 Nothing in this agreement will relieve Contractor of his responsibility to maintain traffic, structures, etc., as noted on the Plans, Specifications, and Project Specific Conditions. Contractor is responsible to provide all necessary shoring, bracing and trench support as is necessary to maintain traffic structures, etc., as stipulated in the Plans, Specifications, and Special Provisions. If the stability of adjoining building, walls, roadways, etc., is endangered by Contractor's excavation, shoring, bracing, or under pinning must be provided as necessary to ensure project safety. Cost for shoring, bracing, underpinnings, and trench support will be included in the appropriate items listed in the Agreement Price, and no additional payment will be made for this work.

4.7 MATERIALS QUALITY, SUBSTITUTIONS, AND SHOP DRAWINGS

4.7.1 Quality Control and Quality Assurance Testing.

4.7.1.1 All construction materials to be used or incorporated in the Project are subject to inspection, Quality Control & Quality Assurance Testing, and approval or rejection by City. Any material rejected by City must be removed immediately and replaced in an acceptable manner to City at no additional cost to City. When QC/QA tests indicate noncompliance with the Agreement Documents, retesting must be performed by the same testing laboratory that performed the tests that indicated noncompliance.

4.7.1.2 The Contractor must establish, provide, and maintain an effective Quality Control Testing Program (QCTP). The Contractor must develop his own program or procure the services of a consultant. In either case, the party performing the tests must be currently certified by the National Bureau of Standards in the National Voluntary Laboratory Accreditation Program (NVLAP) for construction services or the AASHTO Accreditation Plan (AAP) for Soils, Asphalt and Concrete. The Contractor must provide all support necessary to perform QC and QA testing and sampling (i.e. shoring for testing trench backfill, backhoes, motor graders, loaders, etc. to facilitate testing and sampling). The City will perform the QA testing.

4.7.1.3 The Contractor must submit a written QCTP to the City as a required submittal. The Contractor must not begin Work until the Quality Control Program has been reviewed and

accepted by the City. Resumes of all personnel that will be associated directly or indirectly with the QCTP must be included.

4.7.1.4 The QCTP must include, but not be limited to, on-site/field and laboratory testing of all material delivered to the Site and any existing materials or conditions pertinent to the project.

4.7.1.5 All testing must be under the direction of a Professional Engineer registered in the State of Arizona, knowledgeable in Materials Testing. All "Test Report" forms must be stamped by said Engineer.

4.7.1.6 The written QCTP will set forth the responsibilities of the engineer, project manager, supervisory personnel and each technician assigned to this project. Substitutions or replacement of personnel must require prior written approval by the City. All personnel must be proficient within their assigned duties and possess certification(s) commensurate with their position and responsibilities. The minimum certification(s) for each technician must be NICET Level II, Arizona Technical Testing Institute, American Concrete Institute, or other nationally recognized program applicable to the project and approved by the City of Chandler. The written QCTP must include a description of the required field and construction materials laboratory tests, including required frequencies that meet the minimums established herein.

4.7.1.7 The Contractor must establish a system to record and report all material test results. The daily test reports must include, but not be limited to:

a. Test designation;
b. Date of test;
c. Name of tester;
d. Location of test/sample (station and offset);
e. Product suppliers and product codes (as applicable);
f. Depth/elevation of test/sample;
g. Test result;
h. Control requirement(s);
i. Cause of rejection (if applicable);
j. Results of retests (if applicable); and
k. Remedial action (if applicable).

4.7.1.8 The Contractor must submit test results to the designated City representative.

4.7.1.9 The Contractor must also submit a weekly report to the City summarizing the testing and construction activities completed by emailing the report to the email addresses noted above. All weekly reports must be submitted simultaneously to the Contractor and the City of Chandler. The report must include individual summary sheets for each utility line, structure, and portion of the pavement section. Cores must be numbered sequentially throughout the Project. Re-cores must reference the original core by number and must contain the averaged values for thickness and density. Total pavement thickness must be reported**.** Vertical location of tests for underground utilities must indicate the depth of the

excavation at the location of the test (i.e., cut to flow line [if applicable], depth to bottom or top of pipe, etc.). Density tests must be numbered sequentially. If the minimum number of tests has not been performed per the written QCTP, this must be stated in the weekly summary report with an explanation of the circumstances.

4.7.1.10 The City will maintain a copy of the Project test results and weekly reports in the Project file. In cases where quality control activities do not comply with the Agreement provisions, the City may:

a. Order the Contractor to replace ineffective or unqualified quality control personnel.

b. Order the Contractor to stop operations until appropriate corrective action is taken.

4.7.1.11 Although minimum testing requirements are specified herein, the Contractor bears full responsibility for the quality of the materials and their installation and may elect to perform additional testing beyond the requirements set forth herein to ensure compliance.

4.7.1.12 The Quality Control requirements contained in this Section are in addition to and separate from Quality Assurance Testing, which will be performed by the City of Chandler or its representative. If the Quality Assurance test results are not in agreement with the Quality Control test results, the Contractor will have the option to retain a third party consultant for referee tests. The third party consultant must meet the same requirements as the consultant performing the Quality Control Testing. The results of the third party will be binding. All cost incurred by the referee testing will be the Contractor's expense. If the Contractor elects not to retain a third party for referee testing, the City of Chandler test results will prevail.

4.7.1.13 Except as otherwise noted within this Section, Work or materials required by this Section are non- pay items. Per MAG Section 101, a non-pay item is an item of Work for which no separate payment will be made, the cost of which is to be included as an incidental cost for associated item(s) included on the Bid Schedule or Schedule of Values.

4.7.2 Trade Names and Substitutions.

4.7.2.1 Substitutions prior to bid will only be considered if in compliance with Arizona Revised Statute § 34-104.

4.7.2.2 Contractor, if requested by City, must submit Samples or any additional information that may be necessary to evaluate the acceptability of the substitution.

4.7.2.3 City will make the final decision and will notify Contractor in writing as to whether the substitution has been accepted or rejected.

4.7.2.4 If City does not respond within 15 working days, Contractor must continue to perform the Work in accordance with the Agreement Documents and the substitution will be considered rejected.

4.7.3 Shop Drawings.

4.7.3.1 Contractor must prepare and submit Shop Drawings which show details of all Work to insure proper installation of the Work using those materials and equipment specified under the approved Plans and Specifications.

4.7.3.2 Contractor must submit a schedule of Shop Drawing submissions, which avoids bulk submissions to the extent reasonably possible, with the Project Schedule for City approval. The schedule of Shop Drawing submissions must include all of the items for which Shop Drawings are required by the Agreement Documents, including the Specifications. Unless otherwise noted, Shop Drawings will not be required for items specified or detailed in the Uniform Standard Specifications and Details or the Technical Specifications.

4.7.3.3 Shop Drawings must be numbered consecutively for each Specification section and must accurately and distinctly present the following:

a. All working and erection dimensions.

b. Arrangements and sectional views.

c. Necessary details, including complete information for making connections between work under this Agreement and work under other Agreements.

d. Kinds of materials and finishes.

e. Parts list and description thereof.

4.7.3.4 Each Drawing or page must include:

a. Project Name, City of Chandler Project Number and descriptions.

b. Submittal date and space for revision dates.

c. Identification of equipment, product or material.

d. Name of Contractor and Subcontractor.

e. Name of Supplier and Manufacturer.

f. Relation to adjacent structure of material.

g. Physical dimensions clearly identified.

h. ASTM and Federal Specifications references.

i. Identification of and justification for deviations from the Agreement Documents.

j. Contractor's stamp, initialed or signed, dated and certifying the review of submittal, certification of field measurements and compliance with Agreement.

k. Location at which the equipment or materials are to be installed.

4.7.3.5 Location will mean both physical location and location relative to other connected or attached material. City will return unchecked any submittal, which does not contain complete data on the Work and full information on related matters.

4.7.3.6 Stock or standard drawings will not be accepted for review unless full identification and supplementary information is shown thereon in ink or typewritten form.

4.7.3.7 Contractor must schedule, prepare and submit all Shop Drawings in accordance with a time-table that will allow its suppliers and manufacturers sufficient time to fabricate, manufacture, inspect, test and deliver their respective products to the project Site in a timely manner so as to not delay the complete performance of the Work.

4.7.3.8 If the Shop Drawings show departures from the Agreement requirements, Contractor must make specific mention thereof in the Letter of Transmittal; otherwise review of such submittals by City will not constitute review of the departure. Review of the Drawings will constitute review of the specific subject matter for which the Drawings were submitted and not of any other structure, material, equipment, or apparatus shown on the Drawings.

4.7.3.9 The review of Shop Drawings will be general and will not relieve Contractor of responsibility for the accuracy of such Drawings, nor for the proper fitting and construction of the Work, nor for the furnishing of materials or Work required by the Agreement. No construction called for by Shop Drawings will be initiated until such Drawings have been reviewed and approved by City.

4.7.3.10 The procedure in seeking review of the Shop Drawings will be as follows:

a. Contractor must submit complete sets of Shop Drawings and other descriptive data as specified in this Section.

b. After Contractor's submittal or resubmittal of Shop Drawings, if Contractor has submitted Shop Drawings in accordance with the City-approved submittal schedule, or upon resubmission, City will be provided with three (3) calendar weeks for review. Should City require additional review time above and beyond the three (3) calendar weeks, Contractor may ask for a time extension or monetary compensation, if they can present valid, factual evidence that actual damages were incurred by Contractor. City will determine the amount of the time extension or the monetary compensation to be awarded Contractor, if any, in accordance with City's Policy Statement for Calculating Delays and Damages, Appendix 1.

4.7.3.11 Contractor will be responsible for all extra costs incurred by City caused by Contractor's failure to comply with the procedure outline above.

4.7.4 Long Lead Time Items. Contractor must submit Shop Drawings, as required by the Engineer, on all long lead items to be furnished and installed as part of the project within 10 Days after the date of the executed Agreement letter issued by City. In addition, Contractor must order all long lead items to be furnished and installed as part of this Project within 3 Days after receiving approved Shop Drawings. For all long lead times for which Shop Drawings are not required, Contractor must order said long lead items within 15 Days after the date of the executed Agreement letter issued by City. Within 2 Days after ordering long lead items, Contractor must supply copies of all purchase orders, along with an accurate delivery schedule from the supplier.

4.7.5 Construction Water. If Contractor uses water from City's water system for construction water, Contractor must obtain a fire hydrant meter from City of Chandler Utility Services (480-782-2280) and all construction water must be obtained through the hydrant meter. Contractor must pay all fees related to the hydrant meter and all water bills for construction water. All cost for meters and construction water will be included in the Agreement Price.

4.8 PROJECT RECORD DOCUMENTS

4.8.1 During the construction period, Contractor must maintain at the jobsite a full-size set of prints of the Construction Document Drawings and Shop Drawings for Project Record Document purposes.

4.8.2 Contractor must mark these Drawings to indicate the actual installation where the installation varies from the original Construction Documents. Contractor must give particular attention to information on elements that will be concealed, which would be difficult to identify or measure and record later. Items required to be marked include but are not limited to:

a. Dimensional changes to the Drawings.

b. Revisions to details shown on Drawings.

c. Locations and depths of underground utilities.

d. Revisions to routing of piping and conduits.

e. Actual equipment locations.

f. Changes made by Change Order or Addendum.

g. Details not on original Agreement Drawings.

4.8.3 Contractor must mark completely and accurately Project Record Drawing sets of Construction Documents.

4.8.4 Contractor must mark Project Record Drawings sets with red erasable colored pencil.

4.8.5 Contractor must note Request for Information (RFI) Numbers and Change Order numbers, etc., as required to identify the source of the change to the Construction Documents.

4.8.6 Contractor must submit Project Record Drawing sets and Shop Drawings to City or its representative for review and comment.

4.8.7 Upon receipt of the reviewed Project Record Drawings from City, Contractor must correct any deficiencies and omissions to the Drawings and submit the final original of the Project Record Drawings to City prior to Final Payment.

4.8.8 Project Manager will review the Project Record Drawings monthly prior to the date established for the Payment Request and will be the sole judge of acceptance of these Drawings.

4.9 WARRANTY AND CORRECTION OF DEFECTIVE WORK

4.9.1 Contractor warrants to City that the construction, including all materials and equipment furnished as part of the Work, will be new unless otherwise specified in the Agreement Documents, of good quality, and free of defects in materials and workmanship. Contractor's warranty obligation excludes defects caused by abuse, alterations, or unreasonable failure to maintain the construction by persons other than Contractor, subcontractors, or others under Contractor's control. Nothing in this warranty will limit any manufacturer's warranty which provides City with greater warranty rights than set forth herein or in the Agreement. Contractor will provide City with all manufacturers' warranties and operation and maintenance manuals upon substantial completion of the Work. Contractor's warranty must be for one (1) year, in accordance with MAG Specification § 108.8, and will commence for all portions of the Work upon Final Acceptance of the entire Work as determined by City under the Agreement. All statutory or other warranties, express or implied, related to latent defects will remain in force and are not limited by this provision.

4.9.2 City May Stop the Work. If the Work is defective, or Contractor fails to supply sufficient skilled workmen or suitable materials or equipment, City may order Contractor to stop the

Work without cost to City, or any portion thereof, until the cause for such order has been eliminated; however, this right of City to stop the Work will not give rise to any duty on the part of City to exercise this right for the benefit of Contractor or any other party.

4.9.3 Correction or Removal of Defective Work.

4.9.3.1 If required by City, Contractor must promptly, without cost to City and as specified by City, either correct any defective Work, whether or not fabricated, installed or completed, or, if the Work has been rejected by City, remove it from the Site and replace it with non-defective Work. Contractor must correct any Work which may be displaced in correcting, removing or replacing defective Work. No compensation will be allowed Contractor for such removal, replacement or remedial Work. Contractor must reimburse City for costs incurred by City due to such correction or removal including but not limited to additional expenses for inspection, testing or observation and for repeated reviews by the City or Design Professional.

4.9.3.2 Upon failure on the part of the Contractor to comply within a reasonably prompt time with any written order of City to correct or remove defective Work, City has authority to cause nonconforming materials or rejected Work to be remedied, removed, or replaced at the Contractor's expense and to deduct the costs from any moneys due or to become due the Contractor.

4.9.4 City May Correct Defective Work. If Contractor fails within a reasonable time after written notice of City to proceed to correct defective Work or to remove and replace rejected Work as required by City or if Contractor fails to perform the Work in accordance with the Agreement Documents (including any requirements of the progress schedule), City may, after 7 Days' written notice to Contractor, correct and remedy any such deficiency. To the extent necessary to complete corrective and remedial action, City may exclude Contractor from all or part of the Work, and suspend Contractor's services related thereto, take possession of Contractor's tools, appliances, construction equipment and machinery at the Site and incorporate in the Work all materials and equipment stored at the Site or for which City has paid Contractor, but which are stored elsewhere. Contractor must allow City, city representatives, agents and employees such access to the Site as may be necessary to enable City to exercise City's rights under this Section. All direct and indirect costs of City in exercising such rights will be charged against Contractor in an amount verified by City representative, and a Change Order will be issued incorporating the necessary revisions in the Agreement Documents and a reduction in the Agreement Price. Such direct and indirect costs will include, in particular but without limitation, compensation for additional professional services required and all costs of repair and replacement of Work or others destroyed or damaged by correction, removal or replacement of Contractor's defective Work. Contractor will not be allowed an extension of the Agreement Time because of any delay in Contractor's performance of the Work attributable to the exercise by City or City's rights hereunder.

4.9.5 Correction or Removal of Unauthorized Work.

4.9.5.1 Any Work done beyond the lines and grades shown on the Drawings or established by the Design Professional or any changes in, additions to, or deductions from the Work done without written authority will be considered as unauthorized and will not be paid for. Work so done may be ordered remedied, removed, or replaced at the Contractor's expense.

4.9.5.2 Upon failure on the part of the Contractor to comply promptly with any order of the City,

City will have authority to cause unauthorized Work to be remedied, removed, or replaced at the Contractor's expense and to deduct the costs from any moneys due or to become due the Contractor.

4.9.6 Correction Period - One Year Guarantee.

4.9.6.1 If, within one year after the date of Final Acceptance, or such longer period of time as may be prescribed by law or by the terms of any applicable special guarantee required by the Agreement Documents, or by any specific provision of the Agreement Documents, any Work is found to be defective, Contractor must promptly, without cost to City and in accordance with City's written instructions, either correct such defective Work, or, if it has been rejected by City, remove it from the Site and replace it with non-defective Work. If Contractor does not promptly comply with the terms of such instructions, or in an emergency where delay would cause serious risk of loss or damage, City may have the defective Work corrected or the rejected Work removed and replaced, and all direct and indirect costs of such removal and replacement, including compensation for additional professional services, must be paid by Contractor. Such action by the City will not relieve the Contractor of the guarantees required by this Section or elsewhere in the Agreement Documents.

4.9.6.2 If, in the opinion of the City, defective Work creates a dangerous condition or requires immediate correction or attention to prevent further loss to the City or to prevent interruption of operation of the City, the City will attempt to give the notice required by this Section. If the Contractor cannot be contacted or does not comply with the City's request for correction within a reasonable time as determined by the City, the City may, notwithstanding the provisions of this Section, proceed to make such correction or provide such attention; and the costs of such correction or attention will be charged against the Contractor. Such action by the City will not relieve the Contractor of the guarantees required by this Section or elsewhere in the Agreement Documents.

4.9.6.3 This Section does not in any way limit the guarantee on any items for which a longer guarantee is specified or on any items for which a manufacturer or supplier gives a guarantee for a longer period. The Contractor agrees to act as co-guarantor with such manufacturer or supplier and must furnish the City all appropriate guarantee or warranty certificates upon completion of the Project. No guarantee period, whether provided for in this Section or elsewhere, will in any way limit the liability of Contractor or their sureties or insurers under the indemnity or insurance provisions of these General Conditions and the Project Specific Special Conditions.

4.9.7 Acceptance of Defective Work.

4.9.7.1 If, instead of requiring correction or removal and replacement of defective Work, City may accept Work when in the best interest of the City to do so with appropriate monetary credit from Contractor. If any such acceptance occurs prior to final payment, a Change Order will be issued incorporating the necessary revisions in the Agreement Documents, including appropriate reduction in the Agreement Price; or, if the acceptance occurs after final payment, an appropriate amount must be paid by Contractor to City.

4.9.7.2 Alternatively, City may require Contractor to furnish at Contractor's expense, a special performance guarantee or other surety prior to acceptance of defective work.

4.9.8 The Warranty period begins on the Final Acceptance date noted in the Certificate of Completion, irrespective of early completion by some Subcontractors of their work.

4.9.9 Contractor's warranty obligation must be in accordance with MAG Specifications.

4.9.10 Nothing in the warranties contained in the Agreement Documents are intended to limit any manufacturer's warranty which provides City with greater warranty rights than set forth in this Section or the Agreement Documents. Contractor must provide City with all manufacturers' warranties prior to Substantial Completion, if applicable, or Final Acceptance.

4.9.11 Contractor agrees that it will be responsible to manage and administer the correction of any Work that is not in conformance with the Agreement Documents during the warranty periods set forth in this Section, or during any longer periods to the extent required by the Agreement Documents. A progress payment, or partial or entire use or occupancy of the Project by City, will not constitute acceptance of Work not in accordance with the Agreement Documents.

4.9.12 When notified of a warranty issue, Contractor must respond in writing within 48-hours and must perform warranty Work as soon as material for said repairs are available (as judged solely by City), and in any event Contractor must, take immediate steps to commence and complete correction of nonconforming Work no later than the time period set forth in City's written notification in accordance with the Agreement Documents. This includes the correction, removal or replacement of the nonconforming Work and any damage caused to other parts of the Work affected by the nonconforming Work. If defects develop which are determined by City to be an emergency, City will notify Contractor, via the most expeditious means regarding the nature and condition of the defects. In turn, Contractor must immediately dispatch necessary forces to correct the defect or the emergency condition in accordance with Agreement Documents.

4.9.13 The time periods referenced in this Section apply only to Contractor's obligation to correct nonconforming Work and is not intended to constitute a period of limitations for any other rights or remedies that City may have regarding Contractor's other obligations under the Agreement Documents.

4.9.14 Without limiting the foregoing or anything in these General Conditions or the Agreement to the contrary, Contractor must obtain and provide to City all warranties for any portion of the Project offered by the manufacturer, installer or provider thereof. City and the user of the facility will have the right to the full value and benefit of all such warranties. Contractor must ensure all such warranties are fully transferrable to facilitate the full value of this Section.

4.9.15 Contractor's warranty excludes damages or defects caused by abuse, alterations to the Work not executed by or through Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage.

4.9.16 In the event of any noncompliance with this entire Section 4, City may require Contractor to stop or suspend the Work in whole or in part.

SECTION 5 - CITY RESPONSIBILITIES

5.1 CITY PROJECT MANAGER AND INSPECTORS

5.1.1 Project Manager is responsible for providing City-supplied information and approvals in a timely manner to assist Contractor to fulfill its obligations under the Agreement Documents.

5.1.2 Project Manager will also provide Contractor with prompt notice when it observes any failure on the part of Contractor to fulfill its contractual obligations, including any default or defect in the Project or non-conformance with the Drawings and Specifications.

5.1.3 City may utilize Field Inspectors to assist Project Manager during construction in observing performance of Contractor. City's use of Inspectors is for the purpose of assisting Project Manager.

5.1.4 The Inspectors are authorized to inspect all Work and materials furnished. Such inspections may extend to all or part of the Work and to preparation, fabrication or manufacture of the materials to be used. The Inspectors have the authority to issue instructions contrary to the Construction Documents if approved and coordinated with the directions of Project Manager.

5.1.5 The Inspectors have the authority to reject work or materials until any questions at issue can be decided by Project Manager.

5.1.6 The use of Inspectors by City will not make City responsible for or give City control over construction means, methods, techniques, sequences or procedures or for safety precautions or programs or responsibility for Contractor's failure to perform the Work in accordance with Agreement Documents. The Inspectors are not authorized to direct any of Contractor's activities, employees or Subcontractors.

5.2 **DESIGN PROFESSIONAL SERVICES**

City may contract separately with one or more Design Professionals to provide construction administration of the Project. The Design Professional's Agreement, as well as other firms hired by City may be furnished to Contractor. Contractor does not have the right to limit or restrict or reject any Agreement modifications that are mutually acceptable to City and Design Professional.

5.3 **CITY'S SEPARATE CONTRACTORS**

City is responsible for all work performed on the Project or at the Site by separate contractors retained by City. City will contractually require its separate contractors to reasonably cooperate with, and reasonably coordinate their activities so as not to interfere with Contractor in order to enable Contractor to timely complete the Work consistent with the Agreement Documents. Contractor must immediately notify the Project manager, and address the matter in the next monthly status report, if any activities of such separate contractors are expected to interfere, or are interfering, with Contractor and such interference will or could result in any delay in Contractor's performance of the Work.

5.4 **PERMIT REVIEW AND INSPECTIONS**

5.4.1 If requested by Contractor, Project Manager will provide assistance and guidance in obtaining necessary reviews, permits and inspections.

5.4.2 The regulating agencies of City, such as Development and Sustainability, Fire and Planning Departments, enforce legal requirements. The enforcement activities of City are independent and separate from this Agreement.

5.5 **PLANS AND SPECIFICATIONS TO THE CONTRACTOR**.

Contractor will be provided up to five copies of the Agreement Documents as are reasonably necessary for the execution of the Work. Additional copies will be furnished,

upon request, at the cost of reproduction.

SECTION 6 - AGREEMENT TIME

6.1 AGREEMENT TIME

6.1.1 The Agreement Time will start with the Notice to Proceed ("NTP") and end with Final Acceptance.

6.1.2 Beginning on the date of the NTP, Contractor must begin to fulfill Contractor's obligations under the Agreement. Contractor's obligations include providing City and other agencies with any submittals required by the Project Specific Special Provisions, including but not limited to, an approved Project Schedule, Traffic Control Plans, and a Stormwater Pollution Prevention Plan. Contractor must submit all such required submittals before any physical construction work commences on the Site. NTP does not authorize construction work until all agreement insurance, bonds, and schedules are submitted to and accepted by the City.

6.1.3 The Agreement Time will be as set forth in the Project Schedule. Contractor agrees that it will commence performance of the Work and complete the Project through both Substantial Completion and Final Acceptance within the Agreement Time.

6.1.4 Time is of the essence of this Agreement, for the Project, for the Work, and for each phase and designated Milestone thereof.

6.1.5 Failure of Contractor to perform any covenant or condition contained in the Agreement Documents within the time periods specified herein, will constitute a material breach of this Agreement entitling City to terminate the Agreement unless Contractor applies for and receives an extension of time, in accordance with the procedures set forth in the Agreement Documents.

6.1.6 Failure of City to insist upon the performance of any covenant or condition within the time periods specified herein, will not constitute a waiver of Contractor's duty to perform every other covenant or condition within the designated periods, unless a specific waiver is granted in writing for each such covenant or condition.

6.1.7 City's agreement to waive a specific time provision or to extend the time for performance will not constitute a waiver of any other time provisions contained in the Agreement Documents. Failure of Contractor to complete performance promptly within the additional time authorized in the waiver or extension of time agreement constitutes a material breach of this Agreement entitling City to all the remedies set forth herein or provided by law.

6.2 PROJECT SCHEDULE

6.2.1 The Project Schedule must be in Microsoft Project standard file format, must be updated and maintained throughout the Agreement Time, and must contain the following:

6.2.1.1 Detailed representation of all activities for the project, both on-site construction and major procurement. All significant activities together with the resource loading requirements for each and all items appearing on the schedule of values or bid schedule for progress payments must be shown on the Project Schedule or in attached transmittal letter as described in Section 6.2.8.

6.2.1.2 Dependencies between activities must be indicated so that it may establish as to the effect the progress of any one activity would have on other activities and on the Schedule.

6.2.1.3 Activities for submission, review, and approval of all required submittals.

6.2.1.4 An amount of time will be established prior to the final completion date for "punch list and cleanup". No other activities will be scheduled during this period. Punch list and cleanup must be shown on the Project Schedule and must be entirely completed prior to the expiration of the Agreement Time.

6.2.2 Within 10 Days of receipt of City's comments, Contractor must make all required corrections, adjustments, and additions to complete the Project Schedule and resubmit to City for review. City's review of and response to the Project Schedule is for the purpose of: (1) City planning and staffing for the Project as may be required from time to time; (2) ensuring Contractor's general conformance with the scheduling requirements of the Agreement Documents and completion of the Project within the Agreement Time; and (3) monitoring and evaluating the construction status for purposes of approving monthly progress payments. Acceptance of a submitted schedule by City should in no way be construed as an affirmation or admission that the schedule is reasonable or workable by Contractor. The responsibility for completing the Work on the Project within the Agreement Time remains the obligation of Contractor. City's review does not relieve Contractor from compliance with the requirements of the Agreement Documents or be construed as relieving Contractor of its complete and exclusive control over the means, methods, sequences and techniques for executing the work.

6.2.3 The Project Schedule must show milestones, including milestones for City-furnished information, and must include activities for City-furnished material and construction by other contractors when those activities are interrelated with Contractor activities.

6.2.4 The Project Schedule must be revised as required by conditions and progress of the Work, but such revisions do not relieve Contractor of its obligations to complete the Work within the Agreement Time, as adjusted in accordance with the Agreement Documents. No modification to the Agreement Documents or the Agreement Time will be effective unless approved in advance by City.

6.2.5 For all items of materials and equipment that are critical or may require long lead times to acquire, the Project Schedule must show dates for submission, review and approval of submittals, ordering, and delivery.

6.2.6 An updated Project Schedule must be submitted monthly to City as part of the Payment Request. The monthly submittal must include one full size plot of the entire schedule and one electronic copy containing the schedule in Microsoft Project standard file format. In addition, Contractor must, upon request by City, provide a copy of all submitted schedule data in electronic format which must be clearly labeled with the Project description, scheduling program name and version number, and schedule print/data date.

6.2.7 Contractor must provide City with a monthly status report with each Project Schedule detailing the progress of the Work, including: (i) if the Work is proceeding according to schedule, (ii) any discrepancies, conflicts, or ambiguities found to exist in the Agreement Documents that require resolution, and (iii) other information detailing items that require resolution so as not to jeopardize the ability to complete the Work in the Agreement Time.

6.2.8 With each Project Schedule submittal, Contractor must include a transmittal letter including the following:

a. Description of problem tasks, referenced to field instructions or requests for information (RFI's), as appropriate.

b. Current and anticipated delays including:

(i) Cause of the delay.

(ii) Corrective action and schedule adjustments to correct the delay.

(iii) Known or potential impacts and their delay on other activities, milestones, and their impact on the Substantial Completion and Final Acceptance dates.

(iv) Changes in construction sequence.

c. Pending items and status thereof including but not limited to:

(i) Time Extension requests;

(ii) Substantial Completion date status;

(iii) Final Acceptance date status.

d. If ahead of schedule, the number of calendar Days ahead.

e. If behind schedule, the number of calendar Days behind.

f. Other Project or scheduling concerns.

6.2.9 Critical Path Method (CPM).

6.2.9.1 Unless otherwise specified in the Agreement, the Project Schedule must include a Critical Path Method (CPM) diagram schedule showing the sequence of activities, the interdependence of each activity and identifies the Critical Path.

6.2.9.2 The CPM diagram schedule must be in calendar Days and indicate duration, earliest and latest start and finish dates for all activities, and total Float Times for all activities except critical activities. The CPM diagram must be presented in a time scaled graphical format for the Project as a whole.

6.2.9.3 The CPM diagram schedule must indicate all relationships between activities.

6.2.9.4 The activities making the Project Schedule must contain sufficient detail to assure that adequate planning has been done for proper execution of the Work and such that it provides an appropriate basis for monitoring and evaluation the progress of the Work. Individual activities must not exceed 30 Days in length, in most cases.

6.2.9.5 The CPM diagram schedule must be based upon activities, which coincide with the Schedule of Values.

6.2.9.6 The CPM diagram schedule must show all submittals associated with each work activity and the review time for each submittal.

6.2.10 Float Time.

6.2.10.1 The total Float Time within the overall schedule is for the exclusive use of City, but City may approve Contractor's use of Float as needed to meet Agreement Milestones and

the Project completion date.

6.2.10.2 Contractor will not be allowed to sequence, hide, or reallocate Float Time through such strategies, as extending activity duration estimates to consume available Float, using preferential logic, or using extensive crew/resource sequencing, tec. No time extensions will be granted nor delay damages paid until a delay occurs which extends the Work beyond the Agreement Time.

6.2.11 City-Caused Delays. City-caused delays on the Project, if any, may be offset by City-caused time savings (i.e., Critical Path submittals returned in less time than allowed by the Agreement, approval of substitution requests and credit changes which result in savings of time to Contractor, etc.) In such an event, Contractor will not be entitled to receive a time extension or delay damages until all City-caused time savings are exceeded and the Agreement Time is also exceeded.

6.2.12 Rain-Related Delays. Contractor is required, in preparing the Project Schedule to take into account all relevant weather conditions, including normal rainfall and distribution. No additional compensation will be given for any rain-related delays or impacts on the Work or the Project Schedule. No time extension will be granted in the Project Schedule unless the rainfall during the construction of Work is unusually severe, was not reasonably anticipated, and the total rainfall was significantly in excess of the normal rainfall for the Project Site location. Normal rainfall for the Project will be determined from the 10-year average rainfall for the Site as measured by the National Oceanic and Atmospheric Administration or comparable source of reliable information for rainfall in Chandler, Arizona. In addition, the excessive rainfall must have actually impacted Work activities on the Critical Path and caused delay beyond any remaining Float at the time of the rain- caused delay. The burden of documenting normal rainfall, the excessive rainfall and the impact on Critical Path activities is on Contractor. All other provisions in the Agreement Documents relating to claims, including without limitation notice requirements, apply to any claim by Contractor for a rain delay.

6.2.13 City's "Policy Statement for Calculating Delays and Damages," Appendix 1 to these General Conditions, will apply to all claims of delay and delay damages.

6.2.14 Force Majeure. If Contractor is delayed or prevented from the performance of any Work required under this Agreement by reason of acts of God or other causes beyond the control and without fault of Contractor (financial inability excepted), performance of that Work will be excused, but only for the period of the delay. The time for performance of the Work will be extended for a period equivalent to the period of delay. In addition, the parties agree if Contractor's delayed or suspended performance directly arises out of or directly results from the COVID-19 pandemic, Contractor's delayed or suspended performance may be excused as set forth in this clause. Provided, however; Contractor must give the City written notice within 30 days of the occurrence of the event giving rise to COVID-19 pandemic related delayed or suspended performance. For COVID-19 pandemic related delay or suspended performance, the parties must agree in writing to the length of the excused delay or suspended performance. Further, Contractor must obtain the City's written approval to use any allowance established as part of the project for delays and costs related to the COVID-19 pandemic.

6.3 SUBSTANTIAL COMPLETION

6.3.1 When Contractor considers that the Work, phase or a portion thereof, which City agrees in

writing to accept separately, is substantially complete, City will prepare and submit to Contractor a comprehensive Punch List of items to be completed or corrected prior to Final Acceptance and Final Payment. Failure to include an item on such Punch List does not alter the responsibility of Contractor to complete all Work in accordance with the Agreement Documents.

6.3.2 Upon receipt of Contractor's Punch List, Project Manager will make an inspection to determine whether the Work or designated portion thereof is substantially complete. Project Manager may, at Project Manager's sole option, be assisted in such inspection by the Design Professional for the Project. If the inspection by the Project Manager discloses any item, whether or not included on Contractor's Punch List, which is not sufficiently completed in accordance with the Agreement Documents so that City can occupy or utilize the Work, phase or designated portion thereof for its intended use, Contractor must, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by Project Manager. In such case, Contractor must then submit a request for another inspection by Project Manager to determine Substantial Completion.

6.3.3 Certificate of Substantial Completion.

6.3.3.1 The Project Manager will not issue a Certificate of Substantial Completion unless and until the Work (or separable units or Phases as provided in the Agreement Documents) is essentially and satisfactorily complete in accordance with the Agreement Documents, such that the Project is ready for use by City for its intended purpose, opening to the general public, full occupancy or use by City (including, without limitation, all separate units, or rooms, facilities, access, income-generating areas, and all areas serving the general public, as applicable, must be ready for full-operation without material inconvenience or discomfort), including, to the extent applicable to the Work, the following: all materials, equipment, systems, controls, features, facilities, accessories and similar elements are installed in the proper manner and in operating condition, inspected and approved; surfaces have been painted; masonry and concrete cleaned with any sealer or other finish applied; utilities and systems connected and functioning; site work complete; permanent heating, ventilation, air condition, vertical transportation and other systems properly operating with proper controls; lighting and electrical systems installed, operable and controlled; paving completed, signage installed, and other Work as applicable, has been performed to a similar state of essential and satisfactory completion. A minor amount of Work, as determined by and at the discretion of the Project Manager, such as installation of minor accessories or items, a minor amount of painting, minor replacement of defective work, minor adjustment of controls or sound systems, or completion or correction of minor exterior work that cannot be completed as a result of weather conditions, will not delay determination of Substantial Completion. If prior written approval is obtained from City for purposes of Substantial Completion, specified areas of the entire Work or Project may be individually certified as Substantially Complete. In no event will Substantial Completion be deemed to have occurred unless and until: (i) a temporary certificate of occupancy has been issued by the appropriate Governmental Authorities (as applicable) and (ii) all terms and Work required under this Agreement have been fulfilled by Contractor and same will have also been approved and accepted by City, subject only to the Punch List items.

6.3.3.2 If requested by City, Contractor must complete and turn-over to City the Project on a phased basis. Each phase will have a separate inspection by the Project Manager, a Punch List generated, and then an inspection by City with final approval and acceptance only after the

Project Manager's Punch List.

6.4 **PARTIAL UTILIZATION**

6.4.1 City at City's option may use and occupy any substantially completed parts of the Work which has specifically been identified in the Agreement Documents, or which City, the Design Professional and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by City for its intended purpose, without significant interference with Contractor's performance of the remainder of the Work, provided, however, if the portion of the Work to be used or occupied has not been found to be substantially complete, City must do so in accordance with Section 6.3 prior to such occupancy.

6.4.2 In lieu of the issuance of a Certificate of Substantial Completion as to part of the Work, City may take over operation of a facility constituting part of the Work whether or not it is substantially complete if such facility is functionally and separately usable; provided that prior to any such takeover, City and Contractor agree in writing as to the division of responsibilities between City and Contractor for security, operation, safety, maintenance, correction period, heat, utilities and insurance with respect to such facility.

6.4.3 Substantial Completion of or City's beneficial occupancy of a part of the Project will not alter the fact that the one-year warranty for the whole Project starts at the date of Final Completion of the whole Project.

6.5 **FINAL ACCEPTANCE**

6.5.1 Unless otherwise expressly agreed to in writing by City, Final Acceptance must be obtained by no later than 30 Days (60 Days for federally funded agreements) after the date of Substantial Completion. Failure to timely obtain Final Acceptance will be a material breach of the Agreement.

6.5.2 Upon receipt of written notice that the Work is ready for final inspection and acceptance, City and Contractor will jointly inspect to verify that the remaining items of Work have been completed. There will be no partial acceptance. Final Acceptance will not occur until all items of Work, including Punch List Items, have been completed to City's satisfaction as reflected in the written Final Acceptance.

6.5.3 Final Payment will not be due, owing, or paid by City until Final Acceptance is issued.

6.5.4 Landscape Establishment Period. Unless otherwise expressly agreed to in writing by City, the Landscape Establishment Period will begin on the date of Final Acceptance of the Project and will run 90 Calendar Days thereafter. Landscape Establishment Period requirements are detailed in General Conditions Appendices, attached herein.

6.6 **CONTINUATION OF WORK**

6.6.1 Permitting Contractor to continue and finish the Work or any part of it after the time fixed for its completion (whether milestone, phase, Substantial Completion or Final Acceptance) or after the date to which the time fixed for any completion may have been extended, does not operate as a waiver by City of any rights under the Agreement Documents, law or equity.

6.6.2 Furthermore, the timely completion of the Work being of the utmost importance under this Agreement, notwithstanding the existence of one or more disputes between the parties

concerning the scope of the Work, the Project Schedule, Agreement Time, payments or any other matter, and further notwithstanding a party's invocation of the Dispute Resolution provisions specified in Appendix 6 of these General Conditions, unless City suspends the Agreement or Contractor's performance pursuant to Section 10 of these General Conditions, Contractor will continue to prosecute the Work, including any Change Order work or Extra Work Orders, in a diligent and timely manner and not stop, slow down or impede by action or inaction the progress of the Work, including commencing performance of and thereafter completing any additional work called out in any Change Order or Extra Work Order issued by Project Manager with the approval of City, so long as City makes payment to Contractor in accordance with Section 8 of these General Conditions.

SECTION 7 - AGREEMENT PRICE

7.1 UNIT PRICE AGREEMENTS

7.1.1 The Agreement Price for all Unit Price Agreements will be the amount set forth in the Agreement or Change Order multiplied by the verified quantity provided.

7.1.2 Measurements of quantities to determine the total Agreement Price must be in accordance with MAG Specification §§ 109.1 and 109.2.

7.1.3 The Unit Price may only be changed as set forth in Section 9 below.

7.2 CHANGE ORDERS

7.2.1 Unit Price Change Orders. The Change Order Price for all Unit Price Change Orders will be the amount set forth in the Change Order multiplied by the verified quantity provided.

7.2.2 Measurements of quantities to determine the total Change Order Price must be in accordance with MAG Specifications §§ 109.1 and 109.2.

7.2.3 The Unit Price may only be changed as set forth in Section 9 below.

7.2.4 MAG Specification § 109.4.1 is modified as follows: Before § 109.4.1, the following is added: Any deduction or increase in the Agreement Price must be supported by a signed, written Change Order fully executed by City, and supported by such backup as the Project Manager may require.

7.3 SALES TAX

Contractor is required to pay all applicable sales tax in accordance with the law of the state of Arizona and this cost must be included in all Agreement Prices. When equipment, materials or supplies generally taxable to Contractor are eligible for a tax exemption due to the nature of the Project, Contractor must assist City in applying for and obtaining such tax credits and exemptions which will be paid or credited to City.

SECTION 8 - PAYMENT

8.1 PAYMENT FOR CONSTRUCTION SERVICES

8.1.1 Payment for the Work will be made in accordance with MAG Standard Specification § 109 as amended below.

8.1.2 Contractor must submit to City for review a completed Contractor Payment Request signed

by Contractor, covering the Work completed as of the date of the Request and accompanied by such supporting documentation as is required by the Agreement Documents and also as City may reasonably require. A Contractor Payment Request will not be considered complete unless it is accompanied by an updated Project Schedule and a certification that the on-site, red lined, as built Drawings are up to date. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably, securely stored at the Site or at another location (such as a bonded warehouse) agreed to in writing, the Contractor Payment Request must also be accompanied by such data, satisfactory to City, as will establish City's title to the material and equipment and protect City's interest therein, including applicable insurance. Each subsequent Contractor Payment Request must include an affidavit of Contractor stating that all previous progress payments received on account of the Work have been applied to discharge in full all of Contractor's obligations reflected in prior Contractor Payment Requests.

8.1.3 Except for Work performed under a JOC Agreement, the Contracting Agency will retain 10 percent of all estimates as a guarantee for complete performance of the Agreement in accordance with Arizona Revised Statutes Section 34-221 or 34-607. The Contractor may elect to deposit securities in lieu of retention in accordance with Arizona Revised Statutes Section 34-221, Paragraph C.5. or 34-607, Paragraph B.5.

8.1.4 The payment process functions as follows: Prior to the payment cycle date, Contractor must send a draft Contractor Payment Request to Project Manager. The Project Team will review the Request and agree upon any necessary adjustments. Contractor must certify the final Request by signing and returning to Project Manager.

8.1.5 When construction of the Project is fifty percent (50%) completed, Contractor may request payment of one-half of the retention pursuant to A.R.S. § 34-609(B)(3), subject to all of City's rights to withhold or offset payments, and other rights of City, under the Agreement.

8.1.6 City reserves the right under A.R.S. § 34-609(B)(3) to reinstate the ten percent (10%) retention if City determines that satisfactory progress is not being made.

8.1.7 Contractor's Warranty of Title.

8.1.7.1 Contractor warrants and guarantees that title to all Work, materials and equipment covered by any Contractor Payment Request, whether incorporated in the Project or not, will pass to City at the time of payment, free and clear of all liens, claims, security interests, and encumbrances, provided that this will not preclude the Contractor from installing metering devices or other equipment of utility companies or municipalities, the title of which is commonly retained by the utility company or municipality.

8.1.7.2 No materials, supplies, or equipment for the Work under this Agreement will be purchased subject to any chattel mortgage or under a conditional sale contract or other agreement by which an interest therein, or any part thereof, is retained by the seller or supplier.

8.1.7.3 Nothing contained in this Section will defeat or impair the right of such persons furnishing materials or labor under any bond given by the Contractor for their protection, or any right under any law permitting such persons to look to funds due the Contractor in the hands of the City. The provisions of this Section must be inserted in all subcontracts and material agreements, and notices of its provision must be given to all persons furnishing materials for the Work when no formal agreement is entered into for such materials.

8.2 **PAYMENT UPON SUBSTANTIAL COMPLETION**

8.2.1 No payment will be made upon Substantial Completion, except for a regularly-scheduled monthly progress payment, as allowed by Section 8.2.2.

8.2.2 No further payments will be made to Contractor until Final Acceptance.

8.3 **FINAL PAYMENT**

8.3.1 Subject to all of City's rights to withhold or offset payment, and other rights under the Agreement, Final Payment including remaining retainage will be paid only after:

a. Work has been fully completed (including completion of all incorrect or incomplete work items) and the written Final Acceptance has been issued by City;

b. Necessary operating manuals, any excess materials and supplies necessary for matching materials and supplies incorporated into the Work, acceptable sewer video results (if applicable), and complete "as-built" Drawings (including the Building Information Model, if required by the Agreement Documents) have been delivered to City, as specified in this Section 8.3;

c. Full and unconditional lien waivers and releases by Contractor and any person performing labor or supplying material, machinery, fixtures, or tools for the Work have been delivered to Contractor;

d. All conditions and requirements imposed by City or any financing entity for the corresponding disbursement have been met; and

e. Contractor delivers to City a Contractor Payment Request requesting Final Payment.

8.3.2 Contractor must also submit a signed copy of Contractor's Affidavit Regarding Settlement of Claims, Appendix 3 to these General Conditions, and Certificate of Completion, Appendix 7 to these General Conditions, prior to Final Payment.

8.3.3 In addition, if required under the Project Specific Special Provisions, Contractor must compile a complete equipment list and maintenance manual to be submitted to City as a precondition to Final Payment. The list must include the following items for all equipment supplied under the Plumbing, Electrical, Air Conditioning, Elevator, and other Special Equipment Specifications:

a. Name, Model and Manufacturer.

b. Complete parts lists and Drawings.

c. Local source of supply for replacement parts along with suppliers' telephone numbers.

d. Local service organizations serving the equipment and their telephone numbers.

e. All tags, inspection slips, instruction packages, etc., removed from equipment must be properly identified as to pieces of equipment from which they were taken.

8.3.4 Contractor must also deliver to City, prior to Final Payment, one (1) digital (in the format specified by City), and if requested by City, one (1) hard copy, of any applicable Maintenance manuals. Each manual must include all manufacturer's operation and maintenance instructions and "as-built" Drawings with the list herein specified. It must also include all other diagrams and instructions necessary to properly operate and maintain the equipment, the name, address and telephone number of Contractor and all Subcontractors involved.

8.4 **CITY'S RIGHT TO WITHHOLD PAYMENT**

City may withhold payment to such extent as may be necessary in City's opinion to protect City from loss for which Contractor is responsible, including, without limitation, if any of the following conditions exist:

a. Defective Work not remedied;

b. Third party claims filed or reasonable evidence indicating probable filing of such claims unless security acceptable to City is provided by Contractor;

c. Failure of Contractor to make payments properly to Subcontractors or for labor, materials or equipment;

d. Reasonable evidence that the Work cannot be completed for the unpaid balance of the Agreement Price;

e. Damage to City or another Contractor;

f. Reasonable evidence that the Work will not be completed within the Agreement Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay;

g. Failure to carry out the Work in accordance with the Agreement Documents; or

h. Contractor is in default of any of its other obligations under the Agreement Documents.

8.5 **JOINT/DIRECT CHECKS**

To promote the timely completion and progress of the Work or when appropriate and necessary, payments to Contractor may be made jointly to Contractor and its employees, agents, Subcontractors and suppliers, or any of them. For federally funded agreements, see federal provisions for additional requirements for the joint check process.

8.6 **PAYMENT NOT A WAIVER**

No payment (nor use or occupancy of the Project by City) will be deemed acceptance or approval of the Work or as a waiver of any claims, rights, or remedies of City.

8.7 **LIENS AND BOND CLAIMS**

Contractor must make all payments, in the time required, of all labor and materials furnished to Contractor in the course of the Work and must promptly furnish evidence of such payments as City may require. Contractor must pay when due all claims arising out of performance of the Work covered by this Agreement for which a lien may be filed either against the real estate or leasehold interest of City, or against payments due from City to Contractor, or for which a claim may be made against any payment or performance bond or both. To the fullest extent permitted by law, Contractor agrees that no liens or other claims in the nature of a lien against the real estate, leasehold, or other interest of City,

against payment due from City to Contractor, or against any payment or performance bond, must be filed or made in connection with the Work by any party who has supplied professional services, labor, materials, machinery, fixtures, tools, or equipment used in or in connection with the performance of this Agreement, and Contractor agrees to remove or to cause to be removed any such liens or claims in the nature of a lien or bond claim within 10 Days upon receiving notice or obtaining actual knowledge of the existence of such liens or claim. In addition, Contractor agrees to defend, indemnify, and hold harmless City from and against any and all such liens and claims. This paragraph does not apply to claims and liens of Contractor due to non-payment for work performed.

8.8 **FINANCIAL RECORDKEEPING AND CITY'S AUDIT RIGHT**

8.8.1 Records for all Agreements between City and Contractor must, upon reasonable notice, be open to inspection and subject to audit, scanning, and reproduction during normal business working hours. Such audits may be performed by any City's representative or any outside representative engaged by City for the purpose of examining such records. City or its designee may conduct such audits or inspections throughout the term of this Agreement and for a period of five years after Final Payment or longer if required by law. City's representatives may (without limitation) conduct verifications such as counting employees at the Site, witnessing the distribution of payroll, verifying information and amounts through interviews and written confirmations with Contractor employees, field and agency labor, Subcontractors, and vendors.

8.8.2 Contractor's "records" must include any and all information, materials and data of every kind and character, including without limitation, records, books, papers, documents, subscriptions, recordings, agreements, purchase orders, leases, contracts, commitments, arrangements, notes daily diaries, superintendent reports, drawings, receipts, vouchers and memoranda, and any and all other agreements, sources of information and matters that may in City's judgment have any bearing on or pertain to any matters, rights, duties or obligations under or covered by any Agreement Document. Such records must include (hard copy, as well as computer readable data if it can be made available), written policies and procedures; time sheets; payroll registers; payroll records; cancelled payroll checks; subcontract files (including proposals of successful and unsuccessful bidders, bid recaps, negotiation notes, etc.); original bid estimates; estimating work sheets; correspondence; Change Order files (including documentation covering negotiated settlements); back-charge logs and supporting documentation; invoices and related payment documentation; general ledger, information detailing cash and trade discounts earned, insurance rebates and dividends; and any other Contractor records which may have a bearing on matters of interest to City or the Project in connection with Contractor's dealings with City or the Project (all foregoing hereinafter referred to as "records") to the extent necessary to adequately permit evaluation and verification of any or all of the following:

a. Compliance with Agreement requirements for deliverables;

b. Compliance with approved Plans and Specifications;

c. Compliance with § 14.9 below;

d. Compliance with Agreement provisions regarding the pricing of Change Orders;

e. Accuracy of Contractor representations regarding the pricing of invoices; or

f. Accuracy of Contractor representations related to claims submitted by

Contractor or any of their employees.

8.8.3 Contractor must require all payees (examples of payees include Subcontractors, Suppliers, Insurance Carriers, etc.) to comply with the provisions of this Section by including the requirements hereof in a written agreement between Contractor and payee. Contractor will ensure that all payees (including those entering into lump sum agreements) have the same right to audit provisions contained in this Agreement included in their agreements with Contractor.

8.8.4 City's authorized representative(s) (including, without limitation, Project Manager) must have reasonable access to Contractor's facilities, must be allowed to interview all current or former employees to discuss matters pertinent to the performance of this Agreement and must be provided adequate and appropriate work space, in order to conduct audits in compliance with this Section.

8.8.5 If an audit inspection or examination in accordance with this Section, discloses overpricing or overcharges to City (of any nature) by Contractor or Contractor's Subcontractors in excess of $100,000 in addition to making adjustments for the overcharges, the reasonable actual cost of City's audit must be reimbursed to City by Contractor. Any adjustments or payments which must be made as a result of any such audit or inspection of Contractor's invoices or records must be made within a reasonable amount of time (not to exceed 90 Days) from presentation of City's findings to Contractor.

8.8.6 In addition to the normal paperwork documentation Contractor typically furnishes to City, Contractor agrees to furnish, upon written request from City, any of the documentation necessary for City to exercise its audit rights under this Section 8.8 in computer readable file formats (Word, Excel, or .pdf), as City may designate.

8.8.7 City, its authorized representative, and the appropriate agency, reserve the right to audit Contractor's records in compliance with local, state or federal policies, statutes or at City's discretion, within three (3) years of Final Acceptance of the Work.

SECTION 9 - CHANGES TO THE AGREEMENT

9.1 **FIELD ORDERS**

City may authorize minor changes in the Work not involving an adjustment in the Agreement Price or the Agreement Times, which are consistent with the overall intent of the Agreement Documents. These may be accomplished by a written Field Order on the standard form approved and executed by City. Such Field Orders must be binding and Contractor must perform the change promptly. If Contractor believes that a Field Order justifies an increase in the Agreement Price or Agreement Time, Contractor may make a claim therefor as provided in Section 7.2.

9.2 **EXTRA WORK/CHANGES IN THE WORK**

9.2.1 City reserves the right to make such changes in the Plans and Specifications for the Work, as it may deem appropriate and any such change as set forth in a written Change Order must be deemed a part of this Agreement as if originally incorporated herein.

9.2.2 In the event City and Contractor cannot agree on the terms of a Change Order, or when circumstances otherwise require, the Project Manager has the authority to direct the Contractor to perform extra work, if the work in question is an item not provided for in the

Agreement as awarded. The Project Manager will have the authority to determine, based upon factual evidence presented by the Contractor, whether the work in question is an item not provided for in the Agreement as awarded. If the Project Manager directs the Contractor to perform extra work, the Project Manager's instructions will include a price that the Contractor cannot exceed in charging the City for the extra work. Upon receipt of the Project Manager's directions to perform extra work, the Contractor must promptly proceed with the extra work and document the actual cost thereof. Contractor's right to payment for extra work will be determined under Subsection 9.2.4 below. The Contractor is responsible to manage the extra work to ensure that the price limits set by the Project Manager are not exceeded. Contractor must perform the extra work and submit documentation for the actual cost of the extra work to the City. A Change Order will be issued to cover this work.

9.2.3 Contractor will not be entitled to payment for extra work unless a written Change Order, in form and content prescribed by City, has been executed by City. On all requests for Change Orders, Contractor must specify the increased or decreased costs and whether it believes any extensions of time will be necessary to complete its Work as modified by the Change Order. If extra work is performed under Subsection 9.2.2 above, a corresponding Change Order will be prepared, approved and processed by City before payment can be made to Contractor.

9.2.4 In general, pricing for Change Orders will include the same mark-up percentages that were in effect when the Agreement was awarded. The cost or credit to the City resulting from a change in the Work is subject to Appendix 1 (Policy Statement for Calculating Delays and Damages) and will be determined, based on the type of pricing for the Agreement involved, as follows:

a. By mutual acceptance of a lump sum properly itemized in a form acceptable to City;

b. By unit prices stated in the Agreement Documents;

c. When the City determines that a Unit Price Book Job Order associated with a Job Order Agreement requires a Change Order, by using the same Total Cost Data and CCI that are in effect when the Change Order is anticipated to be issued; or

d. By actual cost and a percentage fee covering overhead and profit, as follows:

(i) Contractor will perform the extra work and be compensated for actual cost of labor, materials and equipment.

(ii) Contractor will have the right to add the fee percentage applicable to the Work under the Agreement, or if no such fee has been agreed to by the parties, not more than five percent (5%) to the Subcontractor's prices for authorized extra work performed solely by Subcontractors. Such percentage will include all of Contractor's charges for overhead, profit, administration and supervision.

(iii) Contractor or Subcontractor will have the right to add the fee percentage applicable to Work under the Agreement for self-performed extra work, or if no such fee has been agreed to by the parties, Contractor's or Subcontractor's maximum total allowable additions for overhead, profit, administration and supervision will

not exceed ten percent (10%) of actual verifiable labor, materials and equipment for such self- performed extra work.

9.2.5 Any agreement which modifies the terms of the Agreement (including Change Orders) will be approved in writing by the Project Manager. Once properly executed by both parties, these modifications to the Agreement will have the same effect as if they had been included in the original Agreement.

9.3 **ACCURACY OF CHANGE ORDER PRICING INFORMATION**

9.3.1 Subject to Sections 9.3.2 through 9.3.4, signature by the contracting parties constitutes full accord and satisfaction between City and Contractor for all costs, damages, and expenses of whatever kind of nature, including delay, impact or acceleration damages, which may be occasioned by a Change Order of other modification of the Agreement agreed to in writing.

9.3.2 Accurate Change Order Pricing Information: Contractor agrees that it is responsible for submitting accurate cost and pricing data to City to support its Fixed Price, Unit Price, or Cost Plus Change Order Proposals or other Agreement Price adjustments under the Agreement. Contractor further agrees to submit Change Order proposals with cost and pricing data which is accurate, complete, current, and in accordance with the terms of the Agreement with respect to pricing of change orders. Contractor agrees that any "buy-out savings" on Change Orders will accrue 100% to Owner. "Buy-out savings" are defined as any savings negotiated by the Contractor with a Subcontractor or a Material Supplier after receiving approval of a Change Order amount that was designated to be paid to a specific Subcontractor or Supplier for the Approved Change Order work.

9.3.3 Right to Verify Change Order Pricing Information: Contractor agrees that City, through its designated representative, will have the right to examine, copy, and scan the records of the Contractor, Subcontractor or Sub-Subcontractor's records (during the Agreement period and up to three years after final payment is made on the Agreement) to verify the accuracy and appropriateness of the pricing data used to price all Change Order proposals or claims. Contractor agrees that if City determines the cost and pricing data submitted (whether approved or not) was inaccurate, incomplete, not current, or not in compliance with the terms of the Agreement regarding pricing of Change Orders, an appropriate Agreement Price adjustment will be made. Such post-approval Contact Price adjustments will apply to all levels of contractors and Subcontractors and to all types of Change Order proposals, specifically including Fixed Price, Unit Price, and Cost Plus Change Orders.

9.3.4 Requirements for Detailed Change Order Pricing Information: Contractor agrees to provide a detailed breakdown of allowable labor and labor burden cost (i.e., base wage rate of applicable classifications of workers, payroll taxes, and insurance and benefits costs). This information will be used to evaluate the potential cost of labor and labor burden related to Change Order work. It is intended that this information represent an accurate estimate of the Contractor's actual labor and labor burden cost components. Information is not intended to establish fixed billing or Change Order pricing labor rates. However, at the time Change Orders are priced, the submitted cost data for labor rates may be used to price Change Order work. The accuracy of any such agreed upon labor rate cost components used to price Change Orders will be subject to later audit. Approved Change Order amounts may be adjusted later to correct the impact of inaccurate labor cost components if the agreed upon labor cost components are determined to be inaccurate.

9.4 **EMERGENCIES**

In any emergency affecting the safety of persons or property, Contractor will act, at its discretion, to prevent threatened damage, injury or loss. Any change in the Agreement Price or Agreement Time resulting from emergency work will be determined as provided in this Section.

9.5 **DIFFERING SITE CONDITIONS**

9.5.1 If Differing Site Conditions are encountered at the Project Site, then notice by the observing party must be given to the other party promptly before conditions are disturbed (to the extent practicable) and in no event later than 14 Days after first observance of the conditions. City will promptly investigate such conditions and, if City determines that Differing Site Conditions exist and they materially cause an increase in the cost of, or time required for, performance of any part of the Work, Contractor will be entitled to equitable adjustment in the Agreement Price or Construction Schedule (and other time requirements), or both. If it is determined by City that the conditions at the Project Site are not Differing Site Conditions and no change is justified, then City will so notify Contractor in writing, stating the reasons. Claims in opposition to such determination must be made within 14 Days after City has given notice of its decision. If City and Contractor cannot agree on an adjustment in the Agreement Price or Construction Schedule (and other time requirements), the adjustment may be submitted to dispute resolution as provided these General Conditions.

9.6 **CHANGES IN LAWS, REGULATIONS, OR LEGAL REQUIREMENTS OR TAXES**

In the event of a material change in applicable Laws, Regulations, or Legal Requirements, or taxes subsequent to the date of the Agreement by the parties, Contractor may be entitled to a Change Order, in City's discretion, to the extent Contractor can document to the satisfaction of City that such change significantly increases Contractor's actual cost of performance of the Work.

SECTION 10 -SUSPENSION AND TERMINATION

10.1 **SUSPENSION**

City may suspend the Agreement and Contractor's performance in accordance with MAG Specifications § 105.1 and 108.7.

10.2 **TERMINATION BY THE CITY FOR CAUSE**

10.2.1 MAG Specifications § 108.11 applies to the Agreement.

10.2.2 City may also terminate the Agreement if City determines, in its sole discretion that Contractor has:

a. After prior written notice, refused or failed to supply enough properly skilled workers or proper materials;

b. After prior written notice, failed to make payment to Subcontractors for materials or labor in accordance with the respective agreements between Contractor and the Subcontractors;

c. After prior written notice, disregards laws, ordinances, or rules, regulations or orders of a public authority having jurisdiction;

d. After prior written notice, repeatedly failed to comply with written directives from City;

e. Is adjudged as bankrupt or insolvent;

f. Made a general assignment for the benefit of creditors;

g. Appointed a trustee or receiver for itself or any of its property;

h. Filed a petition to take advantage of any debtor's act, or to reorganize under the bankruptcy or similar laws; or

i. Otherwise breached a provision of the Agreement Documents or any other Agreement between City and Contractor.

10.2.3 When any of the above reasons exist, City may terminate the Agreement, without prejudice to any other rights or remedies of City, after giving Contractor and Contractors' surety, if any, 7 Days written notice of City's intent to terminate the Agreement and Contractor's failure to cure any such reasons. Upon such termination, City may: (1) take possession of the Site and of all materials thereon owned by Contractor; or (2) finish the Work by whatever reasonable method City may deem expedient. When City terminates the Agreement for one of the reasons state above, Contractor will not be entitled to receive further payment until the Work is finished. If the unpaid balance of the Agreement Price existing at the time of such termination exceeds the costs and expenses of finishing the Work and any other damages incurred by City, such excess will be paid to Contractor. If such costs, expenses and damages exceed such unpaid balance, Contractor must pay the difference to City. This obligation for payment will survive termination of the Agreement.

10.3 **TERMINATION BY CITY FOR CONVENIENCE**

City may also terminate the Agreement at any time for its convenience upon 7 Days written notice to Contractor specifying the termination date. In the event of termination which is not the fault, in whole or in part, of Contractor, City will pay to Contractor only such compensation, including reimbursable expenses, due for Work properly performed on the Project prior to the termination date. Upon any termination of the Agreement, no further payments will be due from City to Contractor.

10.4 **A.R.S. § 38-511**

The Agreement is subject to, and may be terminated by City in accordance with, the provisions of A.R.S. § 38-511.

SECTION 11 -INSURANCE AND BONDS

11.1 **INSURANCE REQUIREMENTS**

11.1.1 After Agreement award, the Contractor must furnish the City a certificate of insurance on a standard insurance industry ACORD form. The ACORD form must be issued by an insurance company authorized to transact business in the State of Arizona possessing a current A.M. Best, Inc. rating of A-7, or better and legally authorized to do business in the State of Arizona with policies and forms satisfactory to City. Provided, however, the A.M. Best rating requirement may not be deemed to apply to required Worker's Compensation coverage.

11.1.2 The Contractor and any of its Subcontractors must procure and maintain, until all of their obligations have been discharged, including any warranty periods under this Agreement are satisfied, the insurances set forth below.

11.1.3 The insurance requirements set forth below are minimum requirements for this Agreement and in no way limit the indemnity covenants contained in this Agreement.

11.1.4 The City in no way warrants that the minimum insurance limits contained in this Agreement are sufficient to protect Contractor from liabilities that might arise out of the performance of the Agreement services under this Agreement by Contractor**,** its agents, representatives, employees, or Subcontractors and the Contractor is free to purchase any additional insurance as may be determined necessary.

11.1.5 Failure to demand evidence of full compliance with the insurance requirements in this Agreement or failure to identify any insurance deficiency will not relieve the Contractor from, nor will it be considered a waiver of its obligation to maintain the required insurance at all times during the performance of this Agreement.

11.1.6 Use of Subcontractors: If any Work is subcontracted in any way, the Contractor must execute a written agreement with Subcontractor containing the same Indemnification Clause and Insurance Requirements as the City requires of the Contractor in this Agreement. The Contractor is responsible for executing the Agreement with the Subcontractor and obtaining Certificates of Insurance and verifying the insurance requirements.

11.2 **MINIMUM SCOPE AND LIMITS OF INSURANCE**

11.2.1 The Contractor must provide coverage with limits of liability not less than those stated below.

11.2.1.1 Commercial General Liability-Occurrence Form. Contractor must maintain "occurrence" form Commercial General Liability insurance with a limit of not less than $2,000,000 for each occurrence, $4,000,000 aggregate. Said insurance must also include coverage for products and completed operations, independent contractors, personal injury and advertising injury. If any Excess insurance is utilized to fulfill the requirements of this paragraph, the Excess insurance must be "follow form" equal or broader in coverage scope than underlying insurance.

11.2.1.2 Automobile Liability-Any Automobile or Owned, Hired and Non-Owned Vehicles. Contractor must maintain Business/Automobile Liability insurance with a limit of $1,000,000 each accident on Contractor owned, hired, and non-owned vehicles assigned to or used in the performance under this Agreement. If any Excess or Umbrella insurance is utilized to fulfill the requirements of this paragraph, the Excess or Umbrella insurance must be "follow form" equal or broader in coverage scope than underlying insurance.

11.2.1.3 Workers Compensation and Employers Liability Insurance. Contractor must maintain Workers Compensation insurance to cover obligations imposed by federal and state statutes having jurisdiction of Contractor employees engaged in the performance of Work under this Agreement and must also maintain Employers' Liability insurance of not less than $1,000,000 for each accident and $1,000,000 disease for each employee.

11.2.1.4 Builders' Risk/Installation Floater Insurance. The Contractor bears all responsibility for loss to all equipment or Work under construction. Unless waived in writing by the City the Contractor will purchase and maintain in force Builders' Risk/Installation Floater insurance on the entire Work until completed and accepted by the City. This insurance will be Special Causes of Loss policy form, (minimally including perils of fire, flood, lightning, explosion, windstorm and hail, smoke, aircraft and vehicles, riot and civil commotion, theft, vandalism, malicious mischief, and collapse), completed value, replacement cost policy form equal to the Agreement Price and all subsequent modifications. The Contractor's Builders'

Risk/Installation Floater insurance must be primary and not contributory.

a. Builders' Risk/Installation Floater insurance must cover the entire Work including reasonable compensation for architects and engineers' services and expenses and other "soft costs" made necessary by an insured loss. Builders' Risk/Installation Floater insurance must provide coverage from the time any covered property comes under the Contractor's control and or responsibility, and continue without interruption during course of construction, renovation and or installation, including any time during which any Project property or equipment is in transit, off Site, or while on Site for future use or installation. Insured property must include, but not be limited to, scaffolding, false work, and temporary buildings at the Site. This insurance must also cover the cost of removing debris, including demolition as may be legally required by operation of any law, ordinance, regulation or code.

b. The Contractor must also purchase and maintain Boiler and Machinery insurance with the same requirements as Builders' Risk/Installation Floater insurance cited above if the Work to be performed involves any exposures or insurable property normally covered under a Boiler and Machinery insurance policy or made necessary as required by law or testing requirements in the performance of this Agreement. The Contractor will be responsible for any and all deductibles under these policies and the Contractor waives all rights of recovery and subrogation against the City under the Contractor- Builders' Risk/Installation Floater insurance described herein.

c. Builders' Risk/Installation Floater Insurance must be maintained until whichever of the following first occurs: (i) final payment has been made; or, (ii) until no person or entity, other than the City, has an insurable interest in the property required to be covered.

d. The Builders' Risk/Installation Floater insurance must be endorsed so that the insurance will not be canceled or lapse because of any partial use or occupancy by the City.

e. The Builders Risk/Installation Floater insurance must include as named insureds, the City, the Contractor, and all tiers of Subcontractors and others with an insurable interest in the Work who will be named as additional insureds unless they are able to provide the same level of coverage with the City and Contractor named as additional insureds. Certificates must contain a provision that the insurance will not be canceled or materially altered without at least 30 Days advance notice to the City. The City must also be named as a Loss Payee under the Builders' Risk/Installation Floater coverage.

f. The Builders Risk/Installation Floater insurance must be written using the Special Causes of Loss policy form, replacement cost basis.

g. All rights of subrogation under the Builders Risk/Installation Floater insurance are, by this Agreement, waived against the City, its officers, officials, agents and employees.

h. The Contractor is responsible for payment of all deductibles under the Builders' Risk/Installation Floater insurance policy.

11.2.1.5 Pollution Liability Insurance (Including Errors and Omissions). For Job Orders, Pollution Liability Insurance is only required if applicable and determined on a project specific basis. Contractor must maintain Pollution Liability Insurance with a limit of not less than $5,000,000 per loss, $5,000,000 aggregate for losses caused by pollution conditions including coverage for bodily injury, property damage, defense costs, clean-up costs, and completed operations that arise from the operations of Contractor as described in this Agreement.

a. The policy must provide for complete professional service coverage, including coverage for pollution liability that is a result of a breach of professional duties.

b. The policy must provide for protection again claims for third-party bodily injury, property damage, or environmental damage caused for pollution conditions resulting from general contracting activities for which Contractor is legally liable.

c. The policy must provide for cleanup costs when mandated by governmental entities, when required by law, or as a result of third-party claims.

d. Completed Operations Coverage must be kept in place for up to the statute of repose.

e. The policy must be endorsed to include the following additional insured language: "City, its elected officials, trustees, employees, agents, and volunteers must be named as additional insureds with respect to liability arising out of the activities performed by, or on behalf of Contractor".

f. If Work under this Agreement requires the transportation of any hazardous material or regulated substances, Contractor must carry Auto Liability with a CA 9948 endorsement or equivalent.

g. If Work under this Agreement requires the disposal of any hazardous materials from the job site, Contractor must obtain a certificate of insurance for Pollution Legal Liability from the disposal site operator with a limit of not less than $5,000,000 per loss, $5,000,000 aggregate.

11.3 **ADDITIONAL POLICY PROVISIONS REQUIRED**

11.3.1 Self-Insured Retentions or Deductibles. Any self-insured retentions and deductibles must be declared and approved by the City. If not approved, the City may require that the insurer reduce or eliminate any deductible or self-insured retentions with respect to the City, its officers, officials, agents, employees, and volunteers.

11.3.2 The Contractor's insurance must contain broad form contractual liability coverage.

11.3.3 The Contractor's insurance coverage must be primary insurance with respect to the City, its officers, officials, agents, and employees. Any insurance or self-insurance maintained by the City, its officers, officials, agents, and employees will be in excess of the coverage provided by the Contractor and must not contribute to it.

11.3.4 The Contractor's insurance must apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability.

11.3.5 Coverage provided by the Contractor must not be limited to the liability assumed under the

indemnification provisions of this Agreement.

11.3.6 The policies must contain a severability of interest clause and waiver of subrogation against the City, its officers, officials, agents, and employees, for losses arising from Work performed by the Contractor for the City.

11.3.7 The Contractor, its successors and or assigns, are required to maintain Commercial General Liability insurance as specified in this Agreement for a minimum period of 3 years following completion and acceptance of the Work. The Contractor must submit a Certificate of Insurance evidencing Commercial General Liability insurance during this 3 year period containing all the Agreement insurance requirements, including naming the required Additional Insureds set forth herein.

11.3.8 If a Certificate of Insurance is submitted as verification of coverage, the City will reasonably rely upon the Certificate of Insurance as evidence of coverage but this acceptance and reliance will not waive or alter in any way the insurance requirements or obligations of this Agreement.

11.3.9 Insurance Cancellation During Agreement Term.

11.3.9.1 If any of the required policies expire during the life of this Agreement, the Contractor must forward renewal or replacement Certificates to the City within 10 Days after the renewal date containing all the required insurance provisions.

11.3.9.2 Each insurance policy required by the insurance provisions of this Agreement must provide the required coverage and must not be suspended, voided or canceled except after 30 Days prior written notice has been given to the City, except when cancellation is for non-payment of premium, then 10 Days prior notice may be given. Such notice must be sent directly to Chandler Law-Risk Management Department, Post Office Box 4008, Mailstop 628, Chandler, Arizona 85225. If any insurance company refuses to provide the require notice, the Contractor or its insurance broker must notify the City of any cancellation, suspension, non-renewal of any insurance within 7 Days of receipt of insurers' notification to that effect.

11.3.10 City as Additional Insured. The above-referenced policies are to contain, or be endorsed to contain, the following provisions:

11.3.10.1 The Commercial General Liability and Automobile Liability policies are to contain, or be endorsed to contain, the following provisions: The City, its officers, officials, agents, and employees are additional insureds with respect to liability arising out of activities performed by, or on behalf of, the Contractor including the City's general supervision of the Contractor; Products and Completed Operations of the Contractor; and automobiles owned, leased, hired, or borrowed by the Contractor.

11.3.10.2 The City, its officers, officials, agents, and employees must be additional insureds to the full limits of liability purchased by the Contractor even if those limits of liability are in excess of those required by this Agreement.

11.4 **BONDS AND OTHER PERFORMANCE SECURITY**

11.4.1 After Agreement award, Contractor must provide a Performance Bond and a Payment Bond, each in an amount equal to the full amount of the Agreement Price.

11.4.2 Each such bond must be executed by a surety company or companies holding a Certificate

of Authority to transact surety business in the State of Arizona, issued by the Director of the Arizona Department of Insurance and must be named in the current list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (amended) by the Audit Staff Bureau of Accounts, U.S. Treasury Department. A copy of the Certificate of Authority must accompany the bonds. The Certificate must have been issued or updated within two (2) years prior to the execution of this Agreement. The bonds must be written or countersigned by an authorized representative of the surety who is either a resident of the state of Arizona or whose principal office is maintained in this state, as by law required.

11.4.3 The bonds must be made payable and be acceptable to City. The bond forms for the performance and payment bonds must be in the forms required under A.R.S. § 34-221, *et. Seq.,* as in Appendices 4 and 5 of these General Conditions.

11.4.4 Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Agreement Documents, Contractor must promptly furnish a copy of the bonds or must permit a copy to be made.

11.4.5 All bonds submitted for this Project must be provided by a company which has been rated AM Best rating of A- or better for the prior four quarters by the latest edition of the 'Results Best's Key Rating Guide (Property/Casualty)" published by the A.M. Best Company.

11.4.6 Personal or individual bonds are not acceptable.

11.4.7 If the surety on any Bond furnished by Contractor is declared a bankrupt or becomes insolvent, or Contractor's right to do business is terminated in any state where any part of the Project is located, or it ceases to meet the requirements of this Section 11.4, Contractor must within 5 Days thereafter substitute another Bond and surety, both of which must be acceptable to City.

SECTION 12 - INDEMNIFICATION

12.1 To the extent permitted by law, the Contractor and its owners, officers, directors, agents, employees, and subconsultants (collectively "lndemnitor") must indemnify, save, and hold harmless the City and its officers, officials, agents, and employees (collectively "lndemnitee") from any and all claims, actions, liabilities, damages, losses, or expenses (including court costs, attorneys' fees, and costs of claim processing, investigation, and litigation) (collectively "Claims") caused or alleged to be caused, in whole or in part, by the negligent, reckless, wrongful, or willful acts, errors, or omissions of Indemnitor in connection with this Agreement. This indemnity includes any Claim or amount arising out of or recovered under workers' compensation laws or on account of Indemnitor's failure to conform to any federal, state, or local law, statute, ordinance, rule, regulation, or court decree. Indemnitor must indemnify lndemnitee from and against any and all Claims, except those arising solely from lndemnitee's own negligent, reckless, wrongful, or willful acts, errors, or omissions. Indemnitor is responsible for primary loss investigation, defense, and judgment costs where this indemnification applies. In consideration of the award of this Agreement, Indemnitor agrees to waive all rights of subrogation against lndemnitee for losses arising from or related to this Agreement. Indemnitor's obligations under this provision survive the termination or expiration of this Agreement.

SECTION 13 -DISPUTE RESOLUTION

13.1 All disputes arising out of or relating to the Agreement, the Work or the Project, other than termination under Section 10, will be resolved pursuant to the Dispute Resolution process set forth in Appendix 6 of these General Conditions, and not pursuant to MAG Specifications § 110.

13.2 Contractor agrees that during any dispute between the parties, Contractor will continue to perform its obligations under the Agreement until such dispute is resolved.

13.3 Notwithstanding any other provision in this Agreement, City has the right to immediately file in court and pursue an action for a temporary restraining order and injunctive relief against Contractor if City determines that such action is necessary to protect its interests under the Agreement, to obtain specific performance of any provision of the Agreement, to advance the completion of the Project, or to protect health, welfare and safety.

SECTION 14 - MISCELLANEOUS PROVISIONS

14.1 AGREEMENT DOCUMENTS

14.1.1 The Agreement Documents are intended to permit the parties to complete the Work and all obligations required by the Agreement Documents within the Agreement Times for the Agreement Price. The Agreement Documents are intended to be complementary and interpreted in harmony so as to avoid conflict, with words and phrases interpreted in a manner consistent with construction and design industry standards.

14.1.2 It is the intent of the Agreement Documents to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Agreement Documents. Any labor, documentation, services, materials, or equipment that may reasonably be inferred from the Agreement Documents or from prevailing custom or trade usage as being required to produce the intended result must be provided by Contractor whether or not specifically called for at no additional cost to City.

14.1.3 The Agreement Documents establish the rights and obligations of the parties and include the Agreement, Addenda (which pertain to the Agreement Documents), Contractor's Bid or Proposal (including documentation accompanying the Bid and any post-Bid documentation submitted prior to Agreement award) when attached as an exhibit to the Agreement, the accepted Project Schedule, the Notice to Proceed, the Performance Bond, the Payment Bond, Project Design, Engineering and Specifications, these General Conditions, the Project Specific Special Provisions, Technical Specifications, Agreement Drawings, as the same may be more specifically identified in the Agreement, Change Orders, Work Change Directives, Field Orders and the written interpretations and clarifications of the Design Professional or City representative and Modifications issued after execution of the Agreement. Approved Shop Drawings and the reports and drawings of subsurface and physical conditions are not Agreement Documents.

14.1.4 In the event of any inconsistency, conflict, or ambiguity between or among the Agreement Documents, the Agreement Documents will take precedence as follows from highest to lowest: Change Orders, Addenda, Agreement, Project Specific Special Provisions, General Conditions, Technical Specifications, Drawings/Plans, Chandler Amendments to MAG Standard Specifications and Chandler Standard Details, and MAG Uniform Standard Specifications and Details for Public Works Construction. If applicable to this Agreement, Federal Provisions prevail.

14.1.5 On the Drawings, given dimensions will take precedence over scaled measurements and large scale drawings over small-scale drawings.

14.1.6 Clarifications and interpretations of the Agreement Documents will be issued by the Design Professional through the City.

14.1.7 The headings used in this Agreement or any other Agreement Documents, are for ease of reference only and must not in any way be construed to limit or alter the meaning of any provision.

14.1.8 The Agreement Documents form the entire agreement between City and Contractor. No oral representations or other agreements have been made by the parties except as specifically stated in the Agreement Documents.

14.1.9 The Agreement Documents may not be changed, altered, or amended in any way except in writing signed by a duly authorized representative of each party in the form of a Change Order.

14.1.10 Re-Use of Documents. Neither Contractor nor any Subcontractor, manufacturer, fabricator, supplier or distributor will have or acquire any title to or ownership rights in any of the Drawings, Specifications or other documents (or copies of any thereof) prepared by or bearing the seal of the Design Professional; and they must not re-use any of them on extensions of the Project or any other project without written consent of City and the Design Professional and specific written verification or adaptation by the Design Professional.

14.2 REFERENCE STANDARDS

14.2.1 Reference to standards, specifications, manuals, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, will mean the standard, specification, manual, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Agreement if there were no Bids), except as may be otherwise specifically stated in the Agreement Documents.

14.2.2 The provisions of any such standard, specification, manual or code, or any instruction of a Supplier will not change the duties or responsibilities of City, Contractor, Design Professional or Project Manager, or any of their Subcontractors, consultants, agents, or employees from those set forth in the Agreement Documents, nor will any such provision or instruction assign to City, Contractor, Design Professional, or any of their agents, or employees any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the Agreement Documents.

14.3 COMPLIANCE WITH ARIZONA LAW AND FEDERAL LAW

14.3.1 Compliance with A.R.S. § 41-4401. Pursuant to the provisions of A.R.S. § 41-4401, the Contractor hereby warrants to the City that the Contractor and each of its subcontractors ("Subcontractors") must comply with all Federal Immigration laws and regulations that relate to the immigration status of their employees and the requirement to use E-Verify set forth in A.R.S. §23-214(A).

14.3.2 A breach of the Contractor Immigration Warranty constitutes a material breach of this Agreement and subject to penalties up to and including termination of this Agreement.

14.3.3 The City retains the legal right to inspect the papers of any Contractor or Subcontractor employee who works on this Agreement to ensure that the Contractor or Subcontractor is complying with the Contractor Immigration Warranty. The Contractor agrees to assist the City in the conduct of any such inspections.

14.3.4 The City may, at its sole discretion, conduct random verifications of the employment records of the Contractor and any Subcontractors to ensure compliance with Contractors Immigration Warranty. The Contractor agrees to assist the City in performing any such random verifications.

14.3.5 The provisions of this Article must be included in any agreement the Contractor enters into with any and all of its subcontractors who provide services under this Agreement or any subcontract. "Services" are defined as furnishing labor, time or effort in the State of Arizona by a contractor or subcontractor. Services include construction or maintenance of any structure, building or transportation facility or improvement to real property.

14.4 **HAZARDOUS ENVIRONMENTAL CONDITIONS**

14.4.1 Contractor will not be responsible for any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in Drawings or Specifications or identified in the Agreement Document to be within the scope of the Work. Contractor will be responsible for a Hazardous Environmental Condition created with any materials brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible.

14.4.2 If Contractor encounters a Hazardous Environmental Condition or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition. Contractor must immediately:

a. Secure or otherwise isolate such condition;

b. Stop all Work in connection with such condition and in any area affected thereby; and

c. Notify City and promptly thereafter confirm such notice in writing.

14.4.3 City will promptly retain a qualified expert to evaluate such condition or take corrective action, if any.

14.4.4 Contractor will be responsible for any and all civil or criminal penalties, fines, damages, or other charges imposed by any regulatory agency or court for sewage discharges that are in violation of applicable statutes and laws and that are a result, direct or indirect, of work performed under this Agreement. Contractor will also be responsible for reimbursement to City for administration, reporting, and tracking expenses required as a result of any spill event. In the event the regulatory agency or court imposes a probationary period, Contractor must post bond for the probationary period to ensure that all such costs are reimbursed to City. This responsibility will apply whether penalties are imposed directly on Contractor or any of its Subcontractors, or the City of Chandler. Contractor must defend and indemnify City against such penalties. Regulatory agencies may include, but are not limited to, the Arizona Department of Environmental Quality (ADEQ) and the United States Environmental Protection Agency (USEPA).

14.5 **COOPERATION AND FURTHER DOCUMENTATION**

Contractor agrees to provide City such other duly executed documents as may be reasonably requested by City to implement the intent of the Agreement Documents.

14.6 **ASSIGNMENT**

Neither Contractor nor City will, without the written consent of the other assign, transfer or sublet any portion of this Agreement or part of the Work or the obligations required by the Agreement Documents, any such assignment will be void, will transfer no rights to the purported assignee, and would be a material breach of the Agreement.

14.7 **SUCCESSORS**

Contractor and City intend that the provisions of the Agreement Documents are binding upon the parties, their employees, agents, heirs, successors and assigns.

14.8 **LAWFUL PRESENCE**

Pursuant to A.R.S. §§ 1-501 and 1-502, City is prohibited from awarding an agreement to any natural person who cannot establish that such person is lawfully present in the United States. To establish lawful presence, a person must produce qualifying identification and sign a City-provided affidavit affirming the identification provided is genuine. This requirement will be imposed at the time of agreement award. This requirement does not apply to business organizations such as corporations, partnerships, or limited liability companies.

14.9 **NO BOYCOTT OF ISRAEL CERTIFICATION**

By Contractor's signature on this Agreement, Contractor certifies under A.R.S. § 35-393.01 that Contractor is not currently engaged in and for the duration of this Agreement will not engage in a boycott of Israel.

14.10 **NO THIRD PARTY BENEFICIARY**

Nothing under the Agreement Documents will be construed to give any rights or benefits in the Agreement Documents to anyone other than City and Contractor, and all duties and responsibilities undertaken pursuant to the Agreement Documents will be for the sole and exclusive benefit of City and Contractor and not for the benefit of any other party, unless otherwise expressly set forth in the Agreement Documents.

14.11 **GOVERNING LAW AND VENUE**

The Agreement and all Agreement Documents will be deemed to be made under, and will be construed in accordance with and governed by the laws of the State of Arizona without regard to the conflicts or choice of law provisions thereof. Any court action to enforce any provision of the Agreement or to obtain any remedy with respect hereto must be brought in the Superior Court, Maricopa County, Arizona, and for this purpose, each party hereby expressly and irrevocably consents to the jurisdiction and venue of such Court.

14.12 **SEVERABILITY**

If any provision of the Agreement Documents or the application thereof to any person or circumstance will be invalid, illegal or unenforceable to any extent, the remainder of the affected provision, the remainder of the Agreement Documents, and the application thereof will not be affected and will be enforceable to the fullest extent permitted by law.

14.13 **LEGAL REQUIREMENTS**

At all times relevant to its entry into this Agreement and performance of the Services and the Work, Contractor must fully comply with all Laws, Regulations, or Legal Requirements applicable to City, the Project, and the Agreement, including, without limitation, those set

forth on Exhibit C of the Agreement.

14.14 **PARTIAL INVALIDITY**

If any provision of the Agreement is held by a court of competent jurisdiction to be invalid, void or unenforceable, the remaining provisions will nevertheless continue in full force without being impaired or invalidated in any way.

14.15 **ATTORNEYS' FEES**

Should either party to the Agreement bring an action to enforce any provision of the Agreement, the prevailing party will be entitled to recover reasonable attorneys' fees and costs in connection therewith.

14.16 **CONFLICT OF INTEREST**

14.16.1 Contractor agrees to disclose any financial or economic interest with the Project property, or any property affected by the Project, existing prior to the execution of the Agreement. Further, Contractor agrees to disclose any financial or economic interest with the Project property, or any property affected by the Project, if Contractor gains such interest during the course of this Agreement. If Contractor gains financial or economic interest in the Project during the course of this Agreement, this may be grounds for terminating this Agreement. Any decision to terminate the Agreement must be at the sole discretion of City.

14.16.2 Contractor will not engage the services on this Agreement of any present City employee who was involved as a decision maker in the selection or approval processes, or who negotiated or approved billings or Agreement Modifications for this Agreement.

14.16.3 Contractor agrees that it will not perform services on this Project for a contractor, subcontractor, or any supplier, not covered under this Agreement.

14.17 **INDEPENDENT CONTRACTOR**

Contractor is and must be an independent contractor. Any provisions in the Agreement Documents that may appear to give City the right to direct Contractor as to the details of accomplishing the Work or to exercise a measure of control over the Work means that Contractor must follow the wishes of City as the results of the Work only. These results must comply with all applicable laws and ordinances.

14.18 **NOTICE OF INJURY**

Should City or Contractor suffer injury or damage to their person or property because of any error, omission or act of the other party or of any of the other party's employees or agents or others for whose acts the other party is legally liable, claim must be made in writing to the other party within 7 Days of the first observance of such injury or damage.

14.19 **CONFIDENTIALITY**

Contractor, for the benefit of City, hereby agrees it will not release or cause or permit to be released to the public any press notices, publicity (oral or written) or advertising promotion relating to, any statement regarding, or any other public announcement or disclosure or cause or permit to be publicly announced or disclosed, in any manner whatsoever, the specific terms and conditions of this Agreement or any comment relating to the Project or the Site. Notwithstanding the foregoing, Contractor will be entitled to disclose the terms of the Agreement to the extent required by law or in the course of enforcing or defending a claim or action hereunder. Contractor must give City reasonably prompt notice of any disclosure or statement made pursuant to this provision.

14.20 **DATA CONFIDENTIALITY**

14.20.1 As used in the Agreement, "data" means all information, whether written or verbal, including plans, specifications, renderings, photographs, studies, investigations, audits, analyses, samples, reports, calculations, internal memos, meeting minutes, data field notes, work product, proposals, correspondence and any other similar documents or information prepared by, obtained by, or transmitted to the City in the performance of this Agreement.

14.20.2 Contractor agrees that all data, regardless of form, including originals, images, and reproductions, prepared by, obtained by, or transmitted to City in connection with the Contractor's performance of this Agreement is confidential and proprietary information belonging to City.

14.20.3 Except as specifically provided in this Agreement, Contractor or its Subcontractors must not divulge data to any third party without prior written consent of City. Contractor or its Subcontractors must not use data for any purposes except to perform Work required under this Agreement. These prohibitions will not apply to the following data provided Contractor has first given the required notice to City:

a. Data which was known to Contractor or its Subcontractors prior to its performance under this Agreement unless such data was acquired in connection with Work performed for City;

b. Data which was acquired by Contractor or its Subcontractors in its performance under this Agreement and which was disclosed to Contractor or its Subcontractors by a third party, who to the best of Contractor's or its Subcontractor's knowledge and belief, had the legal right to make such disclosure and Contractor or its Subcontractors are not otherwise required to hold such data in confidence; or

c. Data which is required to be disclosed by virtue of law, regulation, or court order, to which the Contractor or its Subcontractors are subject.

14.20.4 In the event the Contractor or its Subcontractors are required or requested to disclose data to a third party, or any other information to which the Contractor or its Subcontractors became privy as a result of any other agreement with City, the Contractor must first notify City as set forth in this Section of the request or demand for the data. The Contractor or its Subcontractors must give City sufficient facts so that City can be given an opportunity to first give its consent or take such action that City may deem appropriate to protect such data or other information from disclosure.

14.20.5 Unless prohibited by law, within 10 Days after completion of services for a third party on real or personal property owned or leased by City, the Contractor must promptly deliver, as set forth in this Section, a copy of all data to City. All data will continue to be subject to the confidentiality agreements of this Agreement.

14.20.6 Contractor or its Subcontractors assume all liability for maintaining the confidentiality of the data in its possession and agree to compensate City if any of the provisions of this Section are violated by Contractor, its employees, agents, or Subcontractors. Solely for the purposes of seeking injunctive relief, it is agreed that a breach of this Section will be deemed to cause irreparable harm that justified injunctive relief in court. Contractor agrees that the requirements of this Section will be incorporated into all subcontracts entered into by Contractor. A violation of this Section may result in immediate termination of this

Agreement without notice.

14.21 **SURVIVAL**

All warranties, representations and indemnifications by Contractor must survive the completion or termination of this Agreement.

14.22 **COVENANTS AGAINST CONTINGENT FEES**

Contractor warrants that no person has been employed or retained to solicit or secure this Agreement upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee, and that no member of City Council, or any employee of City has any interest, financially, or otherwise, in the firm. For breach or violation of this warrant, City will have the right to annul the Agreement without liability or at its discretion to deduct from the Agreement Price or consideration, the full amount of such commission, percentage, brokerage, or contingent fee.

14.23 **NO WAIVER**

The failure of either party to enforce any of the provisions of the Agreement Documents or to require performance of the other party of any of the provisions hereof must not be construed to be a waiver of such provisions, nor will it affect the validity of the Agreement Documents or any part thereof, or the right of either party to thereafter enforce each and every provision.

14.24 **NONEXCLUSIVE REMEDIES**

The remedies set forth in this Agreement are cumulative and not exclusive, and failure to exercise any remedy (including, without limitation, any right to terminate) will not preclude any party from exercising any other right in seeking any other remedy available to it at law or in equity.

14.25 **PROJECT COMMUNICATIONS**

14.25.1 All communications concerning the performance of the Work or the Project will be provided to the designated Project Manager and Contractor's Representative set forth in Article 1 of the Agreement. City may change the designated Project Manager and, subject to Section 4.4.20 of these General Conditions, Contractor may change Contractor Representative, by written notice to the other.

14.25.2 Project communications may be exchanged by e-mail, but email communications cannot change the terms of the Agreement or the Scope of Work, or effectuate any change that requires a written Change Order.

14.25.3 When any provisions of the Agreement Documents requires Contractor or the Design Professional to give written notice to City, it will be deemed to have been validly given if delivered in person or if delivered at or sent by registered or certified mail, postage prepaid, to the Parties indicated in Agreement Article 1, incorporated by reference.

14.25.4 When any provisions of the Agreement Documents requires City, Project Manager, or the Design Professional to give written notice to Contractor, it will be deemed to have been validly given if delivered in person to the person designated in the Agreement Documents as Contractor's Resident Superintendent, or if delivered at or sent by registered or certified mail, postage prepaid, to Contractor at the last address in the Agreement Documents or such substitute address which Contractor designates in writing, or to the business address known to the giver of notice.

14.26 **DRUG FREE WORKPLACE PROGRAM**

14.26.1 City has adopted a policy establishing a drug free workplace for itself and as a requirement for Contractors doing business with City, to ensure the safety and health of employees working on City projects.

14.26.2 Contractor must require a drug free workplace for all employees working under the Agreement. Specifically, all employees of Contractor who are working under an agreement with City must be notified, in writing, by Contractor that they are prohibited from the manufacture, distribution, dispensation, possession or unlawful use of a controlled substance in the workplace.

14.27 Failure to require a drug free workplace in accordance with the City's policy may result in termination of the Agreement and possible debarment form bidding on future City projects.

SECTION 15 - PROVISIONS APPLICABLE SOLELY TO GMP AND COST-BASED AGREEMENTS, CHANGE ORDERS, AND JOB ORDERS

15.1 **ADDITIONAL DEFINITIONS**

The definitions set forth in Section 2 apply to GMP and Cost-Based Agreements, Change Orders, and Job Orders, together with the additional definitions set forth below.

Baseline Cost Model –
A breakdown and estimate of the scope of the Project developed by CM@Risk pursuant to Section 17.5 of these General Conditions.

CM@Risk or Construction Manager at Risk –
The person or firm selected by City to provide pre-construction and/or construction services as detailed in a Construction Manager at Risk Agreement with City. In these General Conditions, the term "Contractor" includes CM@Risk under both Pre-Construction and Construction Services Agreements.

CM@Risk Fee or Contractor's Fee –
An agreed to percentage in an accepted GMP that represents the Contractor's fee for performance of the Work.

Agreement Documents –
Where compensation under the Agreement is based upon a GMP accepted by City, the term "Agreement Documents" also includes the accepted GMP Proposal.

Agreement Price –
Where compensation under the Agreement based upon a GMP accepted by City, the term "Agreement Price" refers to the GMP.

Cost-Based Agreement, Change Order, or Job Order –
A Agreement, Change Order, or Job Order where the Agreement Price is based upon the actual cost of performing the Work, subject to the terms of the Agreement Documents, including this Section 15. These would include those generally referred to as "Cost of the Work plus a Fee with a GMP," "Time and Materials," or "Cost Plus a Fee."

Cost of the Work –
The direct costs necessarily incurred by Contractor in the proper, timely, and complete performance on the Work. The Cost of the Work will include only those costs set forth in Section 15.2 of these

General Conditions.

Deliverables –
The work products prepared by Contractor in performing the scope of work described in the Agreement. Some of the major deliverables to be prepared and provided by Contractor during pre-construction may include but are not limited to: the Baseline Cost Model and Schedule that validate City's plan and budget, Construction Management Plan, Detailed Project Schedule, Schedule of Values, alternative system evaluations, procurement strategies and plans, Detailed Cost Estimates, construction market surveys, cash flow projections, GMP Proposals, Subcontractor procurement plan, Subcontractor agreements, Subcontractor bid packages, Supplier agreements, Constructability Review, Cost Control Log, Traffic control and phasing plans and others as indicated in this Agreement or required by the Project Team.

Pre-Construction Services Agreement –
The Agreement entered into between City and the CM@Risk for Pre-Construction Services to be provided by the CM@Risk, including, without limitation, the generation of a GMP Proposal. If the GMP Proposal is accepted by City and a Construction Agreement is entered into between City and CM@Risk, the duties, obligations and warranties of the CM@Risk under the Pre-Construction Services Agreement survive and are incorporated into the resulting Construction Agreement.

Pre-Construction Services –
The services to be provided under the Pre-Construction Services Agreement, including Section 17 of these General Conditions.

Detailed Project Schedule –
The Detailed Project Schedule developed by the CM@Risk for the review and approval of the Project Manager in accordance with Section 17.3 of these General Conditions, if applicable.

General Conditions Costs –
Those costs set forth in Section 4 of Appendix 9 to these General Conditions.

GMP Plans and Specifications –
The plan and specifications upon which the Guaranteed Maximum price Proposal is based.

GMP Proposal –
The proposal of Contractor submitted pursuant to Section 17.7 of these General Conditions for the entire Work and/or portion (phases) of the Work.

Guaranteed Maximum Price or GMP –
The Guaranteed Maximum Price set forth in the Agreement, Change Order, or Job Order if applicable.

15.2 **AGREEMENT PRICE**

15.2.1 The Agreement Price for all Agreements, Change Orders, and Job Orders based upon payment of the Cost of the Work plus a Fee with a GMP, time and materials, or cost-plus a fee will be the Cost of the Work incurred plus the Fee agreed to in writing by City, limited to the amount of the GMP, if agreed to. Unless otherwise expressly provided in the Agreement, Change Order, or Job Order, all Cost Based pricing will be subject to and limited to GMP.

15.2.2 The Agreement Price may only be changed as set forth in Section 9 above.

15.2.3 Only costs specifically designated as reimbursable costs are eligible for payment by City or may be charged against the Agreement Price. All other costs will not be paid by City and will not be chargeable against the Agreement Price.

15.2.4 Cost-Based Agreements. For Agreements, Change Orders, or Job Orders, reimbursable costs must be determined pursuant to Appendix 9 to these General Conditions, Cost of the Work, and not by MAG Specifications §109.5.

15.3 **ALLOWANCES**

15.3.1 Contractor must include in the Agreement Price all Allowances stated in the Agreement Documents and agreed to in writing by City. Items covered by these Allowances must be supplied for such amounts and by such persons as City may direct, provided Contractor will not be required to employ persons against whom Contractor makes a reasonable objection. Materials, labor, and equipment under an Allowance will be selected by City in accordance with a schedule to be mutually agreed upon by City, Design Professional and Contractor or otherwise in reasonably sufficient time to avoid delay in the Work.

15.3.2 Unless otherwise provided in the Agreement Documents:

15.3.2.1 These Allowances must cover the cost to Contractor, less any applicable trade discount, of the materials, labor, and equipment required by the Allowances, delivered at the Site, and all applicable taxes;

15.3.2.2 Contractor's costs for unloading and handling on the Site, labor, installation costs, overhead, profit and other expenses relating to materials, labor, and equipment required by the Allowance must be included in the Agreement Sum and not in the Allowance; and

15.3.2.3 Whenever the cost is more or less than the Allowance, the Agreement Sum must be adjusted accordingly by Change Order, the amount of which will recognize the difference between actual costs for an Allowance item and the amount of the Allowance item and changes, if any, in handling costs on the Site, labor, installation costs, overhead, profit and other expenses.

15.4 **CONTINGENCY**

An agreed to amount in the GMP that may only be used in accordance with the terms set forth in these General Conditions and with prior written approval by the City.

15.4.1 Construction Contingency. This GMP includes a dollar amount listed as a Construction Contingency which will be readily available for increased costs for subcontractors, material, and equipment subject to prior approval of City, which approval will not be withheld unreasonably. The Construction Contingency may also be used, at the discretion of City, to reimburse CM@Risk for unexpected costs due to (a) scope gaps between trade subcontractors; (b) agreement default by trade subcontractors; (c) unforeseen field conditions, but only as defined in Section 9.5 above; (d) work completed to meet the intent of the design, but which was not indicated on the plans; (e) costs overruns not covered by allowances; (f) costs of corrective work not provided for elsewhere; and (g) implementation of any Recovery Plan. Cost for which CM@Risk desires to be paid from the Construction Contingency must be documented by CM@Risk on a time and materials basis and are subject to verification by City. If agreed to by City, a "Use of Contingency" form will be executed by both parties authorizing the actual cost of the work to be paid and included in the Work Item Direct Costs. The Construction Contingency is not allocated to any particular

item of the Project but may be used for any portion of the work as determined above. Any amount not used in the Construction Contingency will belong to City and will reduce the GMP.

15.4.2 Owner's Contingency. This GMP also includes a dollar amount listed as an Owner's Contingency which may be used only by the City (owner department) for upgrades and changes in scope or other changes not already included within the intent of the Project Program. City will provide CM@Risk with a Work Change Directive authorizing CM@Risk to perform the additional work and to transfer funds from the Owner's Contingency to the Work Item Direct Costs category to be paid with such direct costs. These additional costs will be in an amount mutually agreed upon by CM@Risk and City or will be documented by CM@Risk on a time and materials basis and are subject to verification by City. Any amount not used in the Owner's Contingency will belong to the City and will reduce the GMP.

15.5 **REDUCTION IN RETENTION**

If the Agreement Price is based upon a GMP, in order to receive payment of one-half of the retention as set forth in Section 8.1.5 above, Contractor must also submit to the Project Manager a complete accounting of the Actual Reimbursable Cost of the Work to date, including all such documentation (including, without limitation, invoices, subcontract, subcontractor change orders, purchase orders, records of payment, etc.) as City may require, to establish whether the payments made to Contractor equal, exceed, or are less than the actual reimbursable Cost of the Work to date. Any excess payments by City, as determined by the Project Manager, will be deducted from the one-half retention payment to be made to Contractor, and any additional excess amounts paid to Contractor will be refunded by Contractor to City. The Project Manager's determinations as to Actual Reimbursable Cost of the Work will be the basis of payment until final Project Closeout and Final Payment under the Agreement.

15.6 **FINAL PAYMENT**

If the Agreement Price is based upon a GMP, as a further condition precedent to Final Payment by City, Contractor must submit to the Project Manager a complete final accounting of the Actual Reimbursable Cost of the Work, including all such documentation (including, without limitation, invoices, subcontracts, subcontractor change orders, purchase orders, records of payment, etc.) as City may require, to establish whether the payments made to Contractor equal, exceed, or are less than the Actual Reimbursable Cost of the Work to date. Any excess payments by City, as determined by the Project Manager, will be deducted from the one-half retention payment to be made to Contractor, and any additional excess amounts paid to Contractor will be refunded by Contractor to City. Disputes relating to the Final Cost of the Work will be subject to City's audit rights under Sections 8.8 above and 15.7 below, and the dispute resolution process under Section 13 above.

15.7 **OPEN BOOK**

On any GMP-based or Cost-Based Agreement, Job Order, or Change Order, City may attend any and all meetings or discussions pertaining to the Project, including bid openings, and must have access to all books, invoices, accounts, memoranda, correspondence, and written communications or records of any kind pertaining to the Project, including without limitation, those stored in electronic format.

15.8 **DIFFERING SITE CONDITIONS AND/OR CHANGE IN LAWS**

A Change Order for increased costs under Section 9.5 or 9.6 above will only be considered

or granted by City to the extent such actual, documented costs are justified.

SECTION 16 - PROVISIONS APPLICABLE SOLELY TO JOB ORDER AGREEMENTS (JOC)

16.1 **ADDITIONAL DEFINITIONS**

The definitions set forth in Sections 2 and below will apply to all Job Order Agreements and Job Orders. In addition, the definitions set forth in Section 15.1 above will apply to all Cost-Based Job Orders.

Agreement –
Includes the Job Order Master Agreement and Job Order Project Agreements issued and agreed to by City and JOC Contractor.

JOC Contractor's Coefficient –
A numerical factor that represents JOC Contractor total costs (indirect and direct costs, sales tax, profit, etc.) and other adjustments for market conditions.

Job Order Request for Proposal (RFP) –
The Request for Proposals issued by City for each Job Order Project Agreement relating to a specific Project.

Job Order Cost Proposal –
The Proposal submitted by JOC Contractor in response to a Job Order Request for Proposal (RFP) issued by City to develop a Job Order Project Agreement for a specific Project.

Guaranteed Maximum Price (GMP) Job Order –
Job Order under which JOC Contractor is compensated for actual costs incurred.

Job Order Project Agreement (Job Order) –
The agreement for a specific project, as it may be modified by all Change Orders, executed by the Parties, which incorporates the terms and conditions of the Job Order Master Agreement.

16.2 **ORDERING AND PROCESSING PROCEDURES FOR JOB ORDERS**

16.2.1 The process for developing and issuing a Job Order for a particular Project consists of three (3) procedures: (1) issuance of a RFP by City; (2) JOC Contractor's response to the RFP in the form of JOC Contractor's Job Order Cost Proposal; and (3) Issuance of a Job Order by City, as set for below.

16.2.2 RFP's For Job Orders

16.2.2.1 City will provide to JOC Contractor RFP with a Scope of Work (SOW) describing the Work to be performed, which may include special instructions and conditions, material submittal requirements, and, if applicable, a complete set of sketches, construction drawings and specifications for the Job Order.

16.2.2.2 Some Job Order RFP's will be issued by City without detailed sketches, drawing and specifications and will rely on JOC Contractor to produce them for City review and approval and is considered to be Pre-Construction and incidental design services included in JOC Contractor's overhead for GMP Job Orders. In addition JOC Contractor will not be reimbursed for any Pre-Job Order costs, including proposal preparation, attendance during negotiations, or site visits.

16.2.3 JOC Contractor's Job Order Cost Proposal

16.2.3.1 JOC Contractor must respond within ten (10) calendar days of the RFP date or site visit, whichever is later or as otherwise indicated on a case-by-case basis, by submitting JOC Contractor's Job Order Cost Proposal to the City representative.

16.2.3.2 Unless otherwise required under the terms of the RFP, JOC Contractor's Job Order Cost Proposal must include the following.

a. JOC Contractor's Job Order Cost Proposal in PDF and electronic format;

b. A Project Schedule and schedule of values that reflects the costs of each work element on the schedule. The schedule must show all milestones (e.g., permits, submittals, ordering materials, demolition, work phases, closeout and completion date); and

c. Necessary documentation will be required to indicate that adequate scoping, layout, setup and planning to accomplish the Work has been done. Examples of documentation that might reasonably be expected include sketches, drawings, calculations, catalog cuts and specifications produced to a level of detail and skill that could be expected of experienced, competent Project Managers with five or more periods experience in their respective trade.

16.2.3.3 JOC Contractor must select Subcontractors based on qualifications alone or on a combination of qualifications and price and must not select Subcontractors based on price alone. A qualifications and price selection may be a one-step selection based on a combination of qualifications and price or two-step selection. In a two-step selection, the first step must be based on qualifications alone and the second step may be based or a combination of qualifications and price or on price alone.

16.2.3.4 Upon request, JOC Contractor must provide City with copies of Subcontractor quotes and the basis for selection of each Subcontractor.

16.2.3.5 If City objects to a selected Subcontractor, City will make the objection and the reasons for the objection known to the JOC Contractor. JOC Contractor must then present an acceptable Subcontractor for the applicable discipline. City will not unreasonably object to or withhold approval of a Subcontractor.

16.2.3.6 For self-performed work, the City retains the right to have the JOC Contractor establish JOC Contractor's costs by bidding their costs against at least three (3) other interested trade Contractors. No self- performed work will be allowed to be performed on a lump sum basis.

16.2.4 Issuance of Job Order

16.2.4.1 City Representative will compare the JOC Contractor's Job Order Cost Proposal with the City's estimate, schedules and other requirements, and then, if the City Representative determines it is in the best interest of City, arrange a meeting with JOC Contractor, at which time the JOC Contractor's Job Order Cost Proposal will be discussed and negotiated.

16.2.4.2 If the City Representative determines that it is in the best interest of the City, City will then issue a Job Order to JOC Contractor for execution.

16.2.4.3 Specific Job Orders may vary, but unless agreed to by City in writing otherwise, the content

of Job Orders under the Agreement will generally be as follow, all of which will be signed and/or initialed by JOC Contractor's designated representative:

a. The description of the Scope of the Work and Project Schedule (attached as Exhibit A to the Job Order);

b. The address or location of the Work;

c. The Agreement Price for Work (Construction) included in the Project (attached as Exhibit B to the Job Order);

d. The name of the JOC Contractor representative for the Project;

e. The Drawings and Specifications for the Project;

f. If any shop drawings, project date and/or samples are required for the Job Order, the date for delivery of each required item (included in the Project Schedule, Exhibit A to the Job order); and

g. Project Specific Provisions, if any, in Exhibit A to the Job Order, including, without limitation, whether any of the following are required: Pre-Construction Conference, weekly progress meetings, field office, storage enclosure, materials and equipment handling facility, submittals, shop drawings, product data, equipment list, samples, project manual, schedule of values, Construction progress schedule, narrative reports, progress report, progress charts, progress photographs, materials status report, Construction diagram, Construction status report, operation and maintenance data, operating maintenance instructions and parts list, and as-build drawings.

16.2.5 Job Order Intent. Each Job Order will be interpreted to include all items reasonably necessary to complete the Project under that Job Order as described in the scope of the Work in that Job Order. All Work must be performed in a professional manner and all materials used must be new and of the highest quality and of the type best adapted to their purpose, unless otherwise specified. The Notice to Proceed date, and the award date established therein, will be deemed an integral part of the Job Order the same as if set forth therein.

16.3 **INCIDENTAL DESIGN SERVICES**

16.3.1 This effort includes all "extensions of design" for systems that are typically specified in a performance oriented manner by consultants and designers. Examples include: fire sprinkler systems, fire alarm and sprinkler systems, DDC controls, control systems, prefabricated metal building and similar situations. These designs are normally provided under submittals as a shop drawing with engineering backup and as appropriate, seals of registered engineers specializing in the particular system.

16.3.2 Incidental design includes all documents, sketches, schematic diagrams, floor plan layouts, equipment schedules and other documents produced by the JOC Contractor to define the work required for projects that the City does not develop formal or abbreviated designs requiring a seal by a registered engineer. Incidental design does not include preparation of designs requiring an architect or engineer seal.

16.3.3 JOC Contractor represents, covenants, and agrees, and contractually assumes the obligation to furnish, all of the required Design Services through properly licensed and

experienced Design Professionals in complete accordance with all of the duties imposed on a Design Professional under the Agreement Documents, Laws, Regulations, or Legal Requirements, and the common law.

16.3.4 All Design Documents (and all other Project-related documents, models, computer drawings and other electronic expression, photographs and other expressions CADD, and BIM files and images included) that JOC Contractor and/or JOC Contractor's Design Professional(s) prepare in connection with a Job Order and the copyrights therein (collectively, the "Instruments of Service") will be the property of City. JOC Contractor covenants and agrees to execute any additional document reasonably requested by City to confirm such assignment without any additional compensation.

16.4 **CONSTRUCTION SERVICES**

16.4.1 The following subsections of this Section 16.4 set forth requirements beyond those set forth in Section 4 above which apply to Construction Services performed under a Job Order.

16.4.2 JOC Contractor must perform the Work using only those firms, team members and individuals designated by JOC Contractor consistent with each Job Order or otherwise approved by City pursuant to the General Conditions. No other entities or individuals may be used without the prior written approval of the Project Manager.

16.4.3 Construction Phasing

16.4.3.1 City use of the facilities is anticipated while the Work is being performed. The Work must be planned and accomplished so that there will be a minimum of interference and inconvenience to occupants in the building and agencies in the vicinity and to other craftsmen who may have to do work in the affected facilities. Any blockage of building exits or driveways must be coordinated in advance.

16.4.3.2 If applicable, furniture, portable office equipment and wall appurtenances not rigidly fastened to the walls must be moved by JOC Contractor, protected from damage and replaced to the original position upon completion of the work. If the work required by the Job Order will not allow furniture and portable office equipment to be replaced to its original position, new locations will be designated by City. Incidental costs associated with moving one-piece furnishings up to approximately 150 pounds to perform such tasks as painting, carpet or tile replacement, etc., are considered a general cost of building renovation and must be included in the JOC Contractor's Coefficient. Costs for large scale or wholesale removal and replacement of large quantities of desks or modular workstations, copiers, multiple full file cabinets, etc. to another location or storage outside the work space, or disassembly and reassembly of modular furniture is not considered part of the JOC Contractor's Coefficient and will be priced separately.

16.4.3.3 The work must, so far as practicable, be done in definite sections or divisions and confined to limited areas which must be completed before work in other sections or divisions are begun.

16.4.4 Work Site Conflicts. In the event of a conflict between JOC Contractor and others in an occupied facility or where other Contractors are performing work on the same facility under other Agreements, City will decide to dispute and that decision will be final.

16.4.5 Ownership of Work Product. Work Product prepared or otherwise created in connection

with the performance of this Agreement, including the Work, are to be and remain the property of City. For purposes of this provision, "Work Product" will include all designs, drawings, plans, specifications, ideas, renderings and other information or matter, in whatever form created (e.g., electronic or printed) and in all media now known or hereinafter created. All Work Product will be considered Work Made for Hire as defined in the United States Copyright Act 17 U.S.C. §101 (Copyright Act). If for any reason any such Work is found not to be a work for hire, JOC Contractor hereby transfers and assigns ownership of the copyright in such Work to City. The rights in this Section are exclusive to City in perpetuity.

16.5 **OPTIONAL LIQUIDATED DAMAGES**

16.5.1 Specific Job Orders. City will have the right to assess liquidated damages in relation to any specific JOC Project Agreement as set forth below.

16.5.2 Substantial Completion Liquidated Damages. JOC Contractor acknowledges and agrees that if JOC Contractor fails to obtain Substantial Completion of the Work within the Agreement Time, City will sustain extensive damages and serious loss as a result of such failure. The exact amount of such damages will be extremely difficult to ascertain. Therefore, City and JOC Contractor agree that if JOC Contractor fails to achieve Substantial Completion of the Work within the Agreement Time, City will be entitled to retain or recover from JOC Contractor, as liquidated damages and not as a penalty, the sum per calendar day as indicated in MAG § 108.9.

16.5.3 Final Acceptance Liquidated Damages. For the same reasons set forth in Section 16.5.2 above, City and JOC Contractor further agree that if JOC Contractor fails to achieve Final Acceptance of the Work within the Agreement Time, City will be entitled to retain or recover from JOC Contractor, as liquidated damages and not as a penalty, the sum per calendar day as indicated in MAG § 108.9 commencing from the actual date of Substantial Completion or Final Acceptance as required under any specific JOC Project Agreement.

16.5.4 MAG Liquidated Damages. Liquidated damages provisions in MAG § 108.9 may apply to any specific JOC Project Agreement.

16.5.5 City may deduct liquidated damages assessed pursuant to this Section 16.5 from any unpaid amounts then or thereafter due JOC Contractor under the Agreement or any specific JOC Project Agreement between JOC Contractor and City. Any liquidated damages not so deducted from any unpaid amounts due JOC Contractor must be payable to City at the demand of City, together with interest from the date of the demand at the highest lawful rate of interest payable to JOC Contractor.

16.6 **PERFORMANCE MEASUREMENT**

16.6.1 Performance Assessment. After the Final Acceptance of Work under each Job Order, City will complete a written evaluation of the performance of JOC Contractor on the Job Order.

16.6.2 Consideration in Assignment of Work. JOC Contractor's record of cost, schedule and quality performance and comparative assessments will be significant considerations in City's determination whether to award future Job Orders. JOC Contractor agrees that any determination by City not to not award future Job Orders or Option periods based on performance will be at the sole discretion of City.

SECTION 17 - PROVISIONS APPLICABLE SOLELY TO PRE-CONSTRUCTION SERVICES FOR CONSTRUCTION MANAGER AT RISK

17.1 ADDITIONAL DEFINITIONS

The definitions set forth in Section 2 and 15.1 above will apply to all Pre-Construction Services Agreements.

17.2 GENERAL

17.2.1 CM@Risk must perform the Services required by, and in accordance with the Agreement Documents and as outlined in Exhibit A of the Agreement to the satisfaction of the Project Manager, exercising the degree of care, skill, diligence and judgment a professional construction manager experienced in the performance of such services for construction and/or facilities of similar scope, function, size, quality, complexity and detail to the Project in urban areas throughout the United States, would exercise at such time, under similar conditions. CM@Risk must, at all times, perform the required services consistent with sound and generally accepted engineering principles and construction management and construction contracting practices.

17.2.2 As a participating member of the Project Team, CM@Risk must provide to City and Design Professional a written evaluation of City's Project Program and budget, each in terms of the other, with recommendations as to the appropriateness of each. CM@Risk must prepare a Baseline Cost Model that validates City's budget. The Baseline Cost Model must include all assumptions and basis of estimates in enough detail so that the Project Team can compare future detail estimates to the Baseline Cost model for variances. City and Design Professional will provide all the reasonably required data that is available in order to reach agreement between the team members that the Baseline Cost Model is an accurate projection of the costs of the Project.

17.2.3 CM@Risk must attend Project Team meetings, which may include, but are not limited to, bi- weekly Project management meetings, Project workshops, special Project meetings, construction document rolling reviews, public meetings and partnering sessions. CM@Risk attendance at design or other meetings in which CM@Risk is provided the opportunity but does not actively participate and/or is not properly prepared is not acceptable. Repeated instances of non-participation and/or lack of preparedness will be grounds for termination of CM@Risk Agreement for default.

17.2.4 CM@Risk must provide Pre-Construction Services, described herein, in a timely manner and consistent with the intent of the most current Drawings and Specifications. CM@Risk must promptly notify City in writing whenever CM@Risk determines any Drawings or Specifications are inappropriate for the Project and/or cause changes in the scope of Work that deviates more than the allowed contingencies within the Baseline Cost Model or requires an adjustment in the Baseline Cost Model, Detailed Cost Estimate, Detailed Project Schedule, GMP Proposals and/or in the Agreement Time for the Work, to the extent such as established.

17.2.5 CM@Risk when requested by City, must attend, make presentations and participate as may be appropriate in public agency and or community meetings, relevant to the Project. CM@Risk must provide drawings, schedule diagrams, budget charges and other materials describing the Project when their use is required or appropriate in any such public agency meetings.

17.2.6 Ownership of Work Product. All Work Product prepared or otherwise created in connection with the performance of this Agreement, including the Work, are to be and remain the property of City. For purposes of this provision, "Work Product" will include all designs, drawings, plans, specifications, ideas, renderings and other information or material, in whatever form created (e.g., electronic or printed) and in all media now know or hereinafter created. All Work Product will be considered Work Made for Hire as defined in the United States Copyright Act 17 U.S.C.
§101 (Copyright Act). If for any reason any such Work is found not to be a work for hire, Contractor hereby transfers and assigns ownership of the copyright in such Work to City. The rights in this Section are exclusive to City in perpetuity.

17.2.7 CM@Risk represents to City in completing Pre-Construction Services and providing the reports and analysis required thereunder, that Work can be properly and timely constructed within the GMP Proposal, if accepted. CM@Risk does not assume any design responsibilities unless specifically called for in the scope of work, but CM@Risk will be responsible for their errors, omissions or inconsistencies included in the Work.

17.3 **DETAILED PROJECT SCHEDULE**

17.3.1 The fundamental purpose of the Detailed Project Schedule is to identify, coordinate and record the tasks and activities to be performed by all of the Project Team members and then for the Project Team to utilize that Deliverable as a basis for managing and monitoring all member's compliance with the schedule requirements of the Project. Each Project Team member is responsible for its compliance with the Detailed Project Schedule requirements. CM@Risk must, however, develop and maintain the Detailed Project Schedule on behalf of and to be used by the Project Team based on input from the other Project Team members. The Baseline Project Schedule must be developed as part of the Baseline Cost Model. The Detailed Project Schedule must use the Critical Path method ("CPM") technique, unless required otherwise, in writing by City. CM@Risk must use scheduling software acceptable to City to develop the Detailed Project Schedule. The Detailed Project Schedule must be presented in graphical and tabular reports as agreed upon by the Project Team. If Project phasing as described below is required, the Detailed Project Schedule must indicate milestone dates for the phases once determined. As part of construction phase, City may require CM@Risk to prepare a "resource loaded" schedule for all work, including work performed by Subcontractors, detailing each of the project tasks and the required/anticipated number of personnel per day for each task. CM@Risk must also indicate on the schedule its ability to meet said required/anticipated personnel requirements.

17.3.2 CM@Risk must include and integrate in the Detailed Project Schedule the services and activities required of City, Design Professional and CM@Risk including all construction phase activities based on the input received from City and the Design Professional. The Detailed Project Schedule must define activities as determined by City to the extent required to show: (a) the coordination between preliminary design and various pre-construction documents, (b) any separate long-lead procurements, (c) any permitting issues, (d) any land, right-of-way, or easement acquisition, (e) bid packaging strategy and awards to Subcontractors and Suppliers, (f) major stages of construction, (g) start-up and commissioning, and (h) occupancy of the completed Work by City. The Detailed Project Schedule must include by example and not limitation, proposed activity sequences and durations for design, procurement, construction and testing activities, milestone dates for actions and decisions by the Project Team, preparation and processing of shop drawings

and samples, delivery of materials or equipment requiring long-lead time procurement (if any), milestone dates for various construction phases, Total Float for all activities to the extent authorized by City, relationships between the activities, City's occupancy requirements showing portions of the Project having occupancy priority, and proposed dates for Final Acceptance.

17.3.3 A Baseline Project Schedule must be initiated with the project Baseline Cost Model and agreed to by the project team at the same time. CM@Risk must update and maintain a detailed Project Schedule throughout pre-construction such that it will not require major changes at the start of the construction phase to incorporate CM@Risk's plan for the performance of the construction phase Work. CM@Risk must provide updates and/or revisions to the Detailed Project Schedule for use by the Project Team, whenever required, but no less often than at the Project Team meetings. CM@Risk must include with such submittals a narrative describing its analysis of the progress achieved to-date vs. the Baseline Project Schedule, including any concerns regarding delays or potential delays, and any recommendations regarding mitigating actions.

17.3.4 If phased construction is deemed appropriate at the time of developing the Baseline Cost Model or during the development of the Detailed Project Schedule, and City approves, CM@Risk must review the design and make recommendations regarding the phased issuance of Construction Documents to facilitate phased construction of the Work, with the objective of reducing the Project Schedule and/or Cost of the Work. CM@Risk must take into consideration such factors as natural and practical lines of work severability, sequencing effectiveness, access and availability constraints, total time for completion, construction market conditions, labor and materials availability, and any other factors pertinent to saving time and cost.

17.3.5 Long Lead Time Items. As part of developing the Detailed Project Schedule, CM@Risk must identify all long lead time materials, fabrications, equipment, or other items which may impact the Project Schedule and may require early action on the part of the Project Team. Dates for selecting and ordering long lead time items will be included and highlighted in the Detailed Project Schedule

17.3.6 Equipment Plan. Contractor must develop an Equipment Plan that addresses all rental and owned equipment, regardless of whether such equipment will be provided by CM@Risk or subcontractor(s), that will be necessary to construct the Project and the cost of which will be included as a Cost of the Work in the GMP Proposal. The Equipment Plan will seek to minimize the cost of the equipment to City and maximize the efficient and coordinated use of the equipment for completion of the Project. The Equipment Plan will not only include the costs and allowable lease rates for the equipment, but will also include an equipment schedule that will be incorporated into the Detailed Project Schedule and the Schedule of Values submitted with the GMP Proposal.

17.4 DESIGN DOCUMENT REVIEWS

17.4.1 CM@Risk must evaluate periodically the availability of labor, materials/equipment, cost-sensitive aspects of the design; and other factors that may create an unacceptable variance to the Baseline Cost Model and/or Baseline Project Schedule.

17.4.2 CM@Risk must recommend, in conjunction with the Project Team, those additional surface and subsurface investigations that, in its professional opinion, are required to provide the necessary information for CM@Risk to construct the Project. These additional

investigations, if agreed to be necessary by the Project Manager and the Design Professional, will be acquired by City and copies of the reports will be provided to CM@Risk.

17.4.3 CM@Risk must meet with the Project Team as required to review designs during their development. CM@Risk must familiarize itself with the evolving documents through pre- construction. CM@Risk must proactively advise the Project Team and make recommendations on factors related to construction costs, and concerns pertaining to the feasibility and practicality of any proposed means and methods, selected materials, equipment and building systems, and, labor and material availability. CM@Risk must furthermore advise the Project Team on proposed site improvements, excavation and foundation considerations, as well as, concerns that exist with respect to coordination of the Drawings and Specifications. CM@Risk must use established value analysis principles in recommending cost effective alternatives.

17.4.4 CM@Risk must routinely conduct constructability and bid-ability reviews of the Drawings and Specifications as necessary to satisfy the needs of the Project Team. The reviews must attempt to identify all discrepancies and inconsistencies in the Construction Documents especially those related to clarity, consistency, completeness and coordination of Work of Subcontractors and Suppliers.

17.4.4.1 CM@Risk must evaluate whether: (a) the Drawings and Specifications are configured to enable efficient construction; (b) design elements are standardized; (c) construction efficiency is properly considered in the Drawings and Specifications; (d) module/preassembly design is prepared to facilitate fabrication, transport and installation; (e) sequences of Work required by or inferable from the Drawings and Specifications are practicable; (f) the design has taken into consideration efficiency issues concerning access and entrance to the site, laydown and storage of materials, staging of site facilities, construction parking, and other similar pertinent issues; and (g) the design maintains continued operation of the existing City systems and maintains traffic on adjacent roadways. CM@Risk must also review the Drawings and Specifications to ensure that what is depicted therein can be constructed as designed and must promptly inform the Project Team of any issues.

17.4.4.2 CM@Risk must check cross-reference and complementary Drawings and sections within the Specifications and in general evaluate whether: (a) the Drawings and Specifications are sufficiently clear and detailed to minimize ambiguity and to reduce scope interpretation discrepancies; (b) named materials and equipment are commercially available and are performing well, or otherwise, in similar installations; (c) Specifications include alternatives in the event a requirement cannot be met in the field; and (d) in its professional opinion, the Project is likely to be subject to Differing Site Conditions.

17.4.4.3 The results of the reviews must be provided to Project Team in formal, written reports clearly identifying all reviewed documents and the discovered discrepancies and inconsistencies in the Drawings and Specifications with notations and recommendations made on the Drawings, Specifications and other documents. CM@Risk must meet with Project Team to discuss any findings and review reports.

17.4.4.4 CM@Risk's reviews must be from a Contractor's perspective, and though it will serve to eliminate/reduce the number of RFIs) and changes during the construction phase, responsibility for the Drawings and Specifications will remain with the Design Professional and not CM@Risk.

17.4.5 It is CM@Risk's responsibility to assist the Design Professional in ascertaining that, in CM@Risk's professional opinion, the Construction Documents are in accordance with applicable Laws, Regulations, or Legal Requirements, building codes, sound engineering principle's rules and regulations. If CM@Risk recognizes that portions of the Construction Documents are at variance with applicable laws, statutes, ordinances, building codes, sound engineering principle's rules and regulations, it must promptly notify the Project Team in writing, describing the apparent variance of deficiency. However, the Design Professional is ultimately responsible for the compliance of the Drawings and Specifications with those laws, statutes, ordinances, building codes, rules and regulations.

17.4.6 The Project Team will routinely identify and evaluate using value analysis principles and alternate systems, approaches, design changes that have the potential to reduce Project costs while still delivering a high quality and fully functional Project consistent with the Project Program. If the Project Team agrees, CM@Risk in cooperation with the Design Professional, will perform a cost/benefit analysis of the alternatives and submit such in writing to the Project Team. City, through the Project Manager, will direct which alternatives will be incorporated into the Project. The Design Professional will have full design responsibility for the review and incorporation of CM@Risk suggested alternatives into the Drawings and Specifications. CM@Risk must analyze the costs and schedule impacts of the alternatives against the Baseline Cost Model and Schedule and provide a recommendation for the Project Team's consideration and City's approval prior to the establishment of the GMP.

17.5 **BASELINE COSTS MODEL, DETAILED COST ESTIMATES, AND SCHEDULE OF VALUES**

17.5.1 At the conclusion of the Master Planning and Programming, if required, CM@Risk will review all available information regarding the design and scope of the Project using CM@Risk's experience in performing similar work, knowledge of similar projects and current and projected construction costs and, based upon that review, must develop a Baseline Cost Model for review by the Project Team and approval by City. Once approved by City, the Baseline Cost Model will be continually referenced as detailed estimates are created as the design progresses throughout Pre-Construction until the final GMP for the entire Project is established. A final GMP for the entire Project must be established and approved by City prior to the start of construction. It is the responsibility of CM@Risk to ensure City has sufficient information to evaluate and approve a final GMP prior to the time necessary to start construction so construction can be completed within the Agreement Time. The Project Detailed Cost Estimate will be the best representation from CM@Risk of what the complete functional Project's construction costs will be as indicated by the most current available documents and will be constantly checked against the Baseline Cost Model. CM@Risk must communicate to the Project Team and assumptions made in preparing the Baseline Cost Model. The Baseline Cost Model must support CM@Risk's Detailed Cost Estimates and may be broken down initially as dictated by the available information, as required by City.

17.5.2 After receipt of the Design Professional's most current documents from certain specified pre- construction milestones, CM@Risk must provide a draft Detailed Cost Estimate including a detailed written report detailing any variances to the Baseline Cost Model and Baseline Project Schedule. The Design Professional and CM@Risk will reconcile any disagreements on the estimate to arrive at an agreed upon Detailed Cost Estimate for the construction costs based on the scope of the Project through that specified pre-construction milestone. Pre-Construction milestones applicable to this paragraph are:

Master Planning and Programming, Schematic Design, 50% Design Development, 100% Design Development, and 50% Construction Drawings, If no consensus is reached, City will make the final determination. If the Project Team requires additional updates of the Detailed Cost Estimate beyond that specified in this paragraph, CM@Risk must provide the requested information in a timely manner.

17.5.3 If at any point the Detailed Cost Estimate submitted to City exceeds the previously accepted Baseline Cost Model or previously approved Detailed Cost Estimate agreed to as set forth in Section 17.5.2 above, CM@Risk must make appropriate recommendations to project Team on means/methods, materials, and or other design elements that it believes will reduce the estimated construction costs, such that it is equal to or less than the established Project Team's Baseline Cost Model.

17.5.4 Unless other levels of completion are agreed to in writing in the Construction Documents, at 50% Construction Drawings and included with the associated report, CM@Risk must also submit to the Project Team for review and approval a Schedule of Values that complies with the following requirements. The Schedule of Values must be based on City standard bid schedule and highlight significant variances from any previously submitted Schedule of Values. The Schedule of Values must be directly related to the breakdowns reflected in the Detailed Project Schedule and CM@Risk's Detailed Cost Estimate. In addition, the Schedule of Values must: (a) detail unit prices and quantity take-offs, (b) detail all other contingencies and unit price Work shown and specified in the detailed design documents.

17.5.5 CM@Risk is to track, estimate/price and address the Project Team's overall project cost issues that arise outside of the Baseline Cost Model and the latest approved Detailed Cost Estimate such as: City generated changes, Project Team proposed changes, alternate system analysis, constructability items and value engineering analysis. The system used to implement this process will be referred to as the Design Evolution Log. This is to be addressed between the Baseline Cost Model and the Master Planning and Programming Detailed Cost Estimate, and then (unless other levels of completion are agreed to in writing in the Construction Documents) between the Detailed Cost Estimates for each of the pre-construction milestones thereafter, Schematic Design, 50% Design Development, 100% Design Development, and 50% Construction Documents, and the bid packages for all Phases.

17.5.6 Upon request by City, CM@Risk must submit to City a cash flow projection for the Project based on the current updated/revised Detailed Project Schedule and the anticipated level of payments for CM@Risk during the design and construction phases. In addition, if requested by City and based on information provided by City, CM@Risk must prepare a cash flow projection for the entire Project based on historical records for similar types of projects to assist City in the financing process.

17.5.7 Construction Water. CM@Risk must estimate the quantity of water to be used and include the cost thereof in each Detailed Cost Estimate and GMP Proposal provided by City.

17.6 **SUBCONTRACTOR AND MAJOR SUPPLIER SELECTIONS**

17.6.1 There are two ways to select Subcontractors and major Suppliers prior to submission of a GMP Proposal: (1) qualifications-based selection; or (2) a combination of qualifications and price. Except as noted below, the selection of Subcontractors/Suppliers is the sole responsibility of CM@Risk. In any case, CM@Risk is solely responsible for the performance of the selected Subcontractors/Suppliers, and for compliance with the requirements of

Title 34 of the Arizona Revised Statutes in the selection of a Subcontractors/Suppliers, to the extent applicable. CM@Risk must comply with its Subcontractor Selection Plan submitted with its Statement of Qualifications.

17.6.2 City may approve the selection of a Subcontractor(s) or Suppliers(s) based only on their qualifications when CM@Risk can demonstrate it is in the best interest of the Project. All Work that is performed, after such a qualifications-based selection, for a price that is negotiated by CM@Risk will be billed in accordance with the GMP for actual costs and may be subject to audit by City.

17.6.2.1 Qualifications based selection of a Subcontractor(s)/Supplier(s) should only occur prior to the submittal of the GMP Proposal.

17.6.2.2 If a Subcontractor/Supplier selection plan was submitted and agreed to by City, CM@Risk must apply the plan in the evaluation of the qualifications of a Subcontractor(s) or Supplier(s) and provide City with its review and recommendations.

17.6.2.3 CM@Risk must receive written City approval for each selected Subcontractor(s) and Supplier(s).

17.6.2.4 CM@Risk must negotiate costs for services/supplies from each Subcontractor/Supplier selected under this method.

17.6.3 All Work must be competitively bid unless a Subcontractor or Supplier was selected pursuant to Section 17.6.2 above.

17.6.3.1 CM@Risk must develop Subcontractor and Supplier interest, submit the names of a minimum of three qualified Subcontractors or Suppliers for each trade in the Project for approval by City and solicit bids for the various Work categories. If there are not three qualified Subcontractors/Suppliers available for a specific trade or there are extenuating circumstances warranting such, CM@Risk may request approval by City to submit less than three names. Without prior written notice to City, no change in the recommended Subcontractors/Supplies will be allowed.

17.6.3.2 If City objects to any nominated Subcontractor/Supplier or to any self-performed Work for good reason, CM@Risk must nominate a substitute Subcontractor/Supplier that is acceptable to City.

17.6.3.3 CM@Risk must distribute Drawings and Specifications, and when appropriate, conduct a Pre- Bid Conference with prospective Subcontractors and Suppliers.

17.6.3.4 If CM@Risk desires to self-perform certain portions of the Work, it must request to be one of the approved Subcontractor bidders for those specific bid packages. CM@Risk's bid will be evaluated in accordance with the process identified below. If events warrant and City concurs that it is necessary in order to ensure compliance with the Project Schedule and/or the most recent Detailed Cost Estimate, CM@Risk may be authorized to self-perform Work without bidding or rebidding the Work. When CM@Risk self-performs work without bidding, only the actual costs associated with performing the Work in accordance with the approved GMP will be billed and may be subject to audit by City.

17.6.3.5 CM@Risk must receive, open, record and evaluate the bids; provided, however, that if CM@Risk or one of its affiliates is bidding to self-perform the Work that is the subject of the bid, then the bids must be received, opened, recorded and evaluated by Project Manager

instead of CM@Risk. Bids for each category of Work must be opened and recorded at a pre-determined time. The apparent low bidders must be interviewed to determine the responsiveness of their proposals. In evaluating the responsiveness of bid proposals CM@Risk, in addition to bid price, may consider the following factors: past performance on similar projects, qualifications and experience of personnel assigned, quality management plan, approach or understanding of the Work to be performed, and performance schedule to complete the Work. The final evaluation of Subcontractor/Supplier bids must be done with Project Manager in attendance to observe and witness the process. CM@Risk must resolve any Subcontractor/Supplier bid withdrawal, protest or disqualification in connection with the award at no increase in the Cost of Work.

17.6.4 CM@Risk will be required to prepare two different reports on the subcontracting process.

17.6.4.1 Within fifteen days after each major Subcontractor/Supplier bid opening process; CM@Risk must prepare a report for City's review and approval identifying the recommended Subcontractors/Supplier for each category of Work. The report must detail: (a) the name of the recommended Subcontractor/Supplier and the amount of the Subcontractor/Supplier bid for each sub-agreement; (b) the sum of all recommended Subcontractor/Supplier bids received; (c) and trade work and its cost that CM@Risk intends to self-perform, if any.

17.6.4.2 Upon completion of the Subcontractor/Supplier bidding process, CM@Risk must submit a summary report to City of the entire Subcontractor/Supplier selection process. The report must indicate, by bid process, all Subcontractors/Suppliers contacted to determine interest, the Subcontractors/Suppliers solicited, the bids received and costs negotiated, and the recommended Subcontractors/Suppliers for each category of Work.

17.6.5 The approved Subcontractors/Suppliers will provide a Schedule of Values with their bid proposals, which will be used to create the overall Project Schedule of Values.

17.6.6 If after receipt of sub-bids or after award to Subcontractors and Suppliers, City objects to any nominated Subcontractor/Supplier or to any self-performed Work without any reasonable basis, CM@Risk must nominate a substitute Subcontractor or Supplier, preferably if such option is still available, from those who submitted Subcontractor bids for the Work affected. Once such substitute Subcontractors and Suppliers are consented to by City, CM@Risk's proposed GMP for the Work or portion thereof must be correspondingly adjusted to reflect any higher or lower costs form any such substitution.

17.7 **GMP PROPOSAL**

17.7.1 When a GMP Proposal is submitted for a phase of the Work, the GMP will have a Detailed Cost Estimate of the Costs of the Work (as set forth in Section 15.2) in each phase of the Work that is being proposed plus the current estimate for all other Work. City will not approve the GMP for the phase of work without a total estimate for the complete Project. City may request a GMP Proposal for all or any portion of the Project and at any time during pre-construction. Any GMP Proposals submitted by CM@Risk must be based on and consistent with Baseline Cost Model and the current update/revised Detailed Cost Estimate at the time of the request and include any clarifications or assumptions upon which the GMP Proposal(s) are based.

17.7.2 A GMP Proposal for the entire Project will be the sum of the Cost of the Work, CM@Risk Fee, and General Conditions Cost. CM@Risk guarantees to complete the Project at or less than

the final GMP Proposal amount plus approved Change Orders. CM@Risk will be responsible for any costs for expenses that would cause the Cost of the Work actually incurred, including the Construction Fee and General Conditions Costs, to exceed the GMP.

17.7.3 CM@Risk must prepare its GMP Proposal in accordance with City's request for GMP Proposal requirements based on the most current completed Drawings and Specifications at that time, which unless otherwise directed by City in writing, will be at 100% Construction Drawings. CM@Risk must mark the face of each document of each set upon which its GMP Proposal is based. These documents must be identified as the GMP Plans and Specifications. CM@Risk must send one set of those documents to the Project Manager, keep one set and return the third set to the Design Professional.

17.7.4 An updated/revised Detailed Project Schedule, Equipment Plan, and Schedule of Values must be included in any GMP Proposal(s), all of which must reflect the GMP Plans and Specifications the Detailed Project Schedule must be shown in relationship to the Project Schedule and identify any variance to the Baseline Project Schedule. Any such Detailed Project Schedule updates/revisions must continue to comply with the requirements of Section 17.3.1 through 17.3.5.

17.7.5 GMP Proposals(s) Review and Approval

17.7.5.1 CM@Risk must meet with the Project Team to review the GMP Proposal(s) and the written statement of its basis. In the event the Project Team discovers inconsistencies or inaccuracies in the information presented, CM@Risk must make adjustments as necessary to the GMP Proposal.

17.7.5.2 If during the review and negotiation of GMP Proposals design changes are required, City may authorize and cause the Design Professional to revise the GMP Plans and Specifications to the extent necessary to reflect the agreed-upon assumptions and clarifications contained in the final approved GMP Proposal. Such revised GMP Plans and Specification will be furnished to CM@Risk. CM@Risk must promptly notify the Project Team in writing if any such revised GMP Plans and Specifications are inconsistent with the agreed upon assumptions and clarifications.

17.7.6 All portions of or items comprising the GMP Proposal are subject to audit by City, as deemed appropriate by City, including, without limitation, any based upon unit prices or Work to be self- performed by CM@Risk, or its affiliates.

17.8 PAYMENT PROCEDURE FOR PRE-CONSTRUCTION SERVICES

17.8.1 Requests for monthly payments by CM@Risk for Pre-Construction Services must be submitted monthly and must be accompanied by a progress report, detailed invoices and receipts, if applicable. Any requests for payment must include, as a minimum, a narrative description of the tasks accomplished during the billing period, a listing of any Deliverables submitted, and copies of any Subconsultants' requests for payment, plus similar narrative and listings of Deliverables associated with their Work. Payment for services negotiated as a lump sum will be made in accordance with the percentage of work completed during the preceding month.

17.8.2 In no event will City pay more than seventy-five (75%) of the Agreement Price until acceptance of ALL Pre-Construction Services and award of the final approved Construction Services Agreement for the entire Project by City Council. If CM@Risk does not prepare a

GMP Proposal that is acceptable to City, or the GMP Proposal exceeds the City's Construction Budget, then CM@Risk understands and acknowledges that it will forfeit any right to receive the 25% of the Agreement Price being retained by City.

17.8.3 CM@Risk agrees that no charges or claims for costs or damages of any type will be made by it for any delays or hindrances beyond the reasonable control of City during the progress of any portion of Pre-Construction Services specified in this Agreement. Such delays or hindrances, if any, will be solely compensated for by an extension of time for such reasonable period and may be mutually agreed between the parties. It is understood and agreed, however, that permitting CM@Risk to proceed to complete any such Services, in whole or in part after the date to which the time of completion may have been extended, will in no way act as a waiver on the part of City of any of their respective legal rights herein.

17.8.4 No compensation to CM@Risk will be allowed contrary to Article I, Chapter I, Title 34 of the Arizona Revised Statutes.

17.8.5 If any service(s) executed by CM@Risk is abandoned or suspended in whole or in part, for a period of more than 180 days through no fault of CM@Risk, CM@Risk is to be paid for the services performed prior to the abandonment or suspension.

17.9 **SURVIVAL OF THE DESIGN SERVICES AGREEMENT, DUTIES, OBLIGATIONS AND WARRANTIES**

If the GMP Proposal is accepted by City and a Construction Agreement is entered into between City and CM@Risk, the duties, obligations and warranties of CM@Risk under the Pre- Construction Services Agreement survive and are incorporated into the resulting Construction Agreement.

SECTION 15 – APPENDICES

The following Appendices attached hereto are referenced in the General Conditions and are incorporated herein.

Appendix 1 – Policy Statement for Calculating Delays and Damages
Appendix 2 – Cost Reduction Incentive Proposals for Design Bid Build Agreements
Appendix 3 – Contractor's Affidavit Regarding Settlement of Claims
Appendix 4 – Forms of Performance Bond
Appendix 5 – Forms of Payment Bond
Appendix 6 – Dispute Resolution
Appendix 7 – Certificate of Completion
Appendix 8 – Construction Sign Detail
Appendix 9 – Cost of the Work (Applicable solely to Construction Manager at Risk and Job Order Contracting)
Appendix 10 Landscape Establishment Period

CALCULATING DELAYS AND DAMAGES

The purpose of this policy statement is to establish guidelines and procedures for negotiation between the Contractor and City of Chandler relating to compensation for delays pursuant to Arizona Revised Statutes (A.R.S.) 34-221(F). This policy statement contains notice requirements in addition to those set forth in the Agreement Documents, and will be the Agreement Provision contemplated by that statute.

NOTE: As used herein, the term "Engineer" will refer to the City of Chandler City Engineer or his/her designated representative. Nothing in this Policy Statement will be construed to void any provision in the Agreement which requires timely notice of delays or provides for arbitration or any other procedure for settlement or provides for liquidated damages.

I. TYPES OF DELAYS:

For the purposes of this document, there are essentially four types of delays encountered by City of Chandler Construction Contractors; excusable/compensable, excusable/non-compensable, non- excusable, and concurrent. Only delays that extend Agreement Completion Time set forth in the Agreement Document will be considered for issues relating to Agreement extensions or additional compensation. All other delays are considered to be activity delays and do not entitle the Contractor to either time extensions or additional compensation. Agreement Completion Time will be defined as the date set forth in Maricopa Association of Governments (MAG) Uniform Standard Specification Section 101 and as may be modified by the Agreement Documents.

A. Excusable/Compensable:

These are delays caused solely by the City's actions or inactions, are unreasonable under the circumstances, and which were not within the contemplation of the parties to the Agreement at or prior to the time of execution of the Agreement. Since the Contractor presumably has no control over the events causing the delay, he may be entitled to both Agreement time extensions and additional compensation for delay damages. Further, he/she may be entitled to additional compensation from the impact of that delay on other work. Examples of excusable/compensable (E/C) delays include: failure to properly locate an underground City-owned utility within 2 feet of the actual location; failure to relocate City-owned utilities far enough in advance of construction in an area where the Contractor is scheduled to work that it delays start or completion of the Contractor's regularly scheduled work; failure to provide City-furnished equipment or materials in a timely manner if required by the Agreement; failure to acquire necessary Right-of-Way or Public Utility Easements prior to the Contractor beginning Work in the area; failure to timely return Shop Drawings or other Agreement Submittals in accordance with the Agreement; unreasonable delay by the City in making decisions which affect critical activities; surveying errors when the City is contractually responsible for providing Project Surveying. This list is not meant to be all inclusive, but is intended merely as examples of the type of City action or inaction which can result in a Contractor's claim for additional time and compensation.

B. Excusable/Non-compensable:

These are delays over which neither the City nor the Contractor had control. Since both parties to the Agreement have been potentially damaged by the delay, but neither have caused it, only Time Extensions are warranted. Examples of excusable, non-compensable (E/N) delays include: unusually severe weather; fire; acts of God; failure of non-City owned utilities (SRP, CenturyLink, Cable TV, Southern Pacific Railroad, and Southwest Gas, etc.) to properly or timely locate accurately; failure of non-City owned utilities to relocate in advance of construction; the voluntary or involuntary filing for Bankruptcy protection by a Supplier or Subcontractor which causes the Supplier/Subcontractor to fail to meet a contractual deadline provided the Contractor can provide documentation that he/she executed the required Purchase Orders/Subcontract Agreements and received delivery schedules which, if met, would have eliminated the delay; delays as a result of an incomplete shutdown of a City or non-City owned utility main (the City does not guarantee a complete shutdown). This list also is not necessarily all inclusive but merely indicative of type and class of E/N delays.

C. Non-excusable/Non-compensable:

These are delays caused by the actions or inactions of Contractor or an officer, employee, agent, Subcontractor, Supplier or any other party for whom the Contractor is responsible. Since the Contractor has assumed responsibility for the risks associated with the events that caused the delay, he/she are not entitled to either time extensions or monetary delay damages. All non-excusable delays are also non-compensable. Examples of non- excusable, non-compensable (N/N) delays include: failure to perform by the Contractor, its Subcontractors and/or Suppliers (except as noted in section I.B above); failure to provide adequate labor, materials, and/or equipment on the Project; failure to perform contractually-required coordination with utilities, agencies and other Contractors; failure to notify the Engineer, in writing, of delay impacts within two working days, as required by MAG 104.2.3, or the next work day, as required by MAG 109.8.2; failure to timely submit Shop Drawings; failure to pothole or otherwise visually locate utilities sufficiently ahead of the Work to allow the Engineer to direct corrective action when necessary; delays due to retesting of previously failed work, re-inspection, and/or restaking resulting from faulty workmanship, poor quality control, or lack of compliance with Agreement Specifications. Again, this list is not necessarily all inclusive.

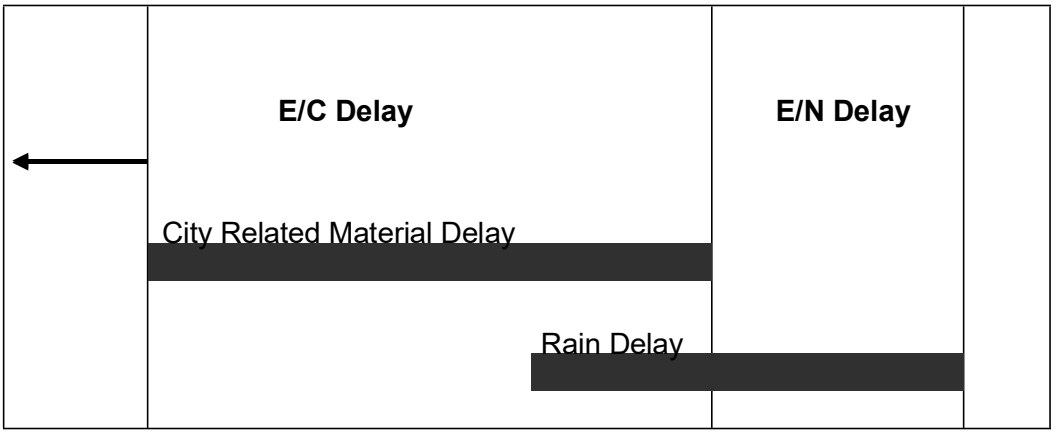
D. Concurrent:

When two or more delays occur simultaneously or overlap, each delay is analyzed separately to determine its impact on the overall project completion date based on when that delay started. Once again, only those delays which actually extend the Agreement completion time are considered as delays. The concurrent delay is considered an additional delay only to the extent it prolongs the delay to the Agreement Completion Time beyond the date that the one it is concurrent with had already delayed that date. For example, if two delays are concurrent, and one is five days long and the second is seven days long, the second concurrent delay will only extend the Agreement Completion Time by two days. The same method of analysis is

used when there are multiple concurrent delays. Only those extending the Project Completion Date are considered to be delays for the purposes of this policy. The portion of each concurrent delay that delays the completion of the work is classified in the same manner as described previously for individual delays and being either E/C, E/N or N/N.

An example of a concurrent delay is where the City delays furnishing material, but the Contractor could not have installed it anyway due to unusually severe weather. The effect of the first delaying activity will extend for the full duration and will be considered controlling on the Contractor's schedule. A subsequent, concurrent delay will thereafter only be considered to effect the project completion (if at all) once the first delaying activity has ceased to impact the project completion. In this case, if the unusually severe weather continued and delayed the work after the material was delivered, the first portion of the delay would be classified E/C (delay for material) and the second as E/N (delay due to unusually severe weather). Using the procedure set forth above, the entire concurrent portion would be considered E/C as shown in the chart which follows.

Example of a Concurrent Delay:



II. ANALYZING THE DELAY:

The Contractor must provide all documents required or requested by the Engineer to analyze the delay(s). It is important to understand that, prior to the delay analysis, delays and their impacts are alleged issues. The information the Contractor provides will be compared with the Inspector's Daily Log, Schedules and other available Project information and together they will support or refute that delays occurred and, if so, how they impact other work and the overall project completion. The Contractor's delay in providing these documents will be considered prima facie evidence that either the delay did not occur or it did not impact the Project Completion Date and any claim for time extension or damages will be denied.

The Engineer will accept delay analyses in CPM format, as these may demonstrate to his/her satisfaction whether or not Project Completion has been impacted by a specific event. If the Contractor chooses not to use CPM scheduling procedures, then the burden will be on the Contractor to prove to the Engineer's satisfaction that the Project Completion has been impacted. The procedures

below assume that the Contractor is using CPM scheduling methods. As a minimum the Contractor must provide the following materials to the Engineer:

A. As-Planned Schedule. The initial construction schedule, required by the Agreement Documents, will be considered the baseline schedule. It is to the Contractor's advantage that the As-Planned (baseline) Schedule be as detailed as possible in order for delays, as they occur, to be incorporated into the schedule in representative locations. It is also to the Contractor's advantage to use a computer software program to generate the schedule since updated schedules are required monthly by the Agreement Documents and since updated schedules are required to support delays and requests for additional compensation for delays. The As-Planned (baseline) Schedule must be presented in network format which clearly shows the interrelationships of the activities. The Contractor must also provide a printout of the activities showing early start, early finish, late start, late finish, duration and float. The activity list printout must also indicate predecessor and successor activities.

B. As-Built Schedules. The as planned (baseline) schedule must be updated with complete progress-to-date information (actualized) up to the date of the start of the alleged delay. Each updated schedule will serve as the as-built schedule for analyzing the alleged delay and provide a new baseline as-planned schedule for the next delay. This process must be repeated for each alleged delay as it occurs. In updating the baseline schedule, the alleged delay must be treated as an activity and inserted into the schedule as a predecessor to the impacted activity (ies). When an activity that has already started is impacted, it is preferable to divide this activity into two parts and show the impact affecting the second part. For schedules which incorporate a time line (or data date), the delay activity must be inserted at the time it actually occurred. Some software scheduling programs have a PAUSE-RESUME feature that can be used to facilitate the requirements. The updated schedule must also be accompanied by a listing of activities as with the baseline schedule. This activities list must contain the alleged delay as an activity showing the duration and the activities which are predecessors and successors to it. When computer generated schedules are used, the Contractor must provide, in electronic media format, the complete data files for the updated schedule that included the delay activity, preferably either in Suretrak or in Microsoft Project. Each electronic media must contain a label identifying the Project name, Contractor's name, program name and version number, data date and project finish date.

C. Other Documents: In order to determine the amount of the alleged delay and if it is compensable, the Contractor must provide all backup documentation relevant to the issue and as required by the Engineer. This documentation must include copies of such items as: purchase orders; delivery schedules; correspondence; memoranda of telephone calls; force account daily worksheets (initialed by the Inspector); payroll data; estimating (bid) worksheets; and any other materials which may be requested by the Engineer.

D. Procedure: Only after receipt of sufficient documentation will the Engineer analyze each alleged delay and determine if it is supported or refuted. If supported, the Engineer will determine if it is excusable or non-excusable, compensable or non-

compensable. If the Engineer determines that the delay did not affect the Project Completion, the as-planned schedule, which has been updated to the date of the alleged delay, must be revised to indicate this. If the Engineer determines the delay did occur but was N/N, then no time extension will be granted. It is imperative that an actualized schedule be submitted as soon as the occurrence of the alleged delay is known. In no event will the Contractor submit an actualized updated schedule later than 60 days after the occurrence of the alleged delay becomes known.

If the Engineer determines the delay did occur and was excusable but, due to a reason listed in section I.B. is non-compensable, he/she will determine the length of the E/N delay and prepare a Change Order to add that time to the Agreement. The Engineer's decision will be final.

If the Engineer determines the delay was excusable and compensable, he/she will determine the length of the E/C delay and proceed to review the Contractor's damage calculations in accordance with Section III. The Engineer will check the Contractor's calculations, review the backup documentation provided, and prepare a Change Order to cover both the additional compensation and the time extension. The Engineer's decision on both the time extension and additional compensation for the delay will be final.

If the issue involves a concurrent delay, the Engineer will analyze available data to determine the portions which are E/C, E/N, and/or N/N as described above. The Engineer will proceed to determine the length of E/C delay and verify the Contractor's delay damage calculations, if any are provided. Upon completion of this review, the Engineer will prepare a Change Order for the Contractor's review and signature. The Engineer's decision regarding excusable delay and additional compensation for the delay is final.

The amount of time the Engineer will require to analyze the alleged delay(s) will depend upon the Engineer's workload, the complexity of the delay analysis, availability of supporting data, extent of cooperation by the Contractor, and other factors beyond the Engineer's control. It is entirely possible other delay(s) may occur while the Engineer is analyzing particular claim for delay(s). The Engineer's failure to respond to the Contractor in a set period of time will not be used as the basis for a further delay claim or as justification for extending and existing delay claim. The time required for delay analysis by the Engineer will not be counted against the time allotted for processing Final Payment as required by (MAG Section 109.7(B)) or the release of retention and Final Payment as prescribed by A.R.S. Arizona Revised Statutes §34-221.

III. CALCULATING MONETARY DELAY DAMAGES:

Additional compensation for delay, when authorized by the Engineer, will be calculated in accordance with MAG Section 109.5 ACTUAL COST WORK with the following exceptions:

A. No additional compensation or other monetary damages will be awarded or paid for any loss of anticipated profits by the Contractor, Subcontractors or Suppliers.

B. No additional compensation or other monetary damages will be awarded for home office overhead or non-project general conditions of the Contractor, Subcontractors or Suppliers.

C. Equipment:

1. Contractor-owned equipment rate calculations must be computed in accordance with Section 109.04(D)(3), Arizona Department of Transportation "Standard Specifications for Road and Bridge Construction," 2008 or latest edition and as modified herein. Year and regional adjustment factors must be based on the most recent publications of the Rental Rate Blue Book for Construction Equipment, published by the Equipment Guide-Book Company, San Jose, CA, same as provided by ADOT and in print as of the date of alleged delay. In no event will the compensation for Contractor-owned equipment exceed the purchase price, including tax, paid by the Contractor for the equipment. Compensation will not be allowed for small tools or equipment that show a daily equipment rental rate of less than $5.00 per day or for unlisted equipment that has a value of less than for hundred dollars ($400.00).
2. For leased and rented equipment or equipment not otherwise listed in the Blue Book, rental contracts, or other supporting data will be used to establish the hourly rate. No hourly operating expense will be allowed for delay on standby equipment. In no case will equipment be considered for rental which exceeds the hourly rate for the first eight hours and the daily rate divided by eight for all additional hours as compared with similar equipment listed in the Blue Book. The hourly standby rate must be computed as the lesser of:

    a. Dividing the monthly invoice or rental value by 176 hours per month when the equipment is utilized by the Contractor for more than three weeks;

    b. Dividing the monthly invoice or rental value by 40 hours per week when the equipment is utilized by the Contractor for more than three days.

    In no event will compensation be paid for delay at more than 8 hours per day or 40 hours per week.

3. Except for vehicles used by supervisory personnel, all equipment will be paid at the "standby" rate during the delay period.

4. Equipment brought solely to mitigate the delay (such as pumps, light plants, etc.) may be paid in accordance with ADOT section 109.04(D) (3).

5. The Blue Book regional adjustment will apply in determining rental rates.

D. Material:

Allowable material charges may include, in addition to material incorporated in the

work material used to mitigate the delay such as barricades, plates, shoring, cold mix, etc. Except in emergencies the Contractor will not employ such material without the prior written approval of the Engineer.

E. Labor:

1. Except for Supervisory Personnel (Superintendent, Project Engineer, and Foremen), labor wages will not be paid after the first one-half day of claimed delay or impact. It is expected the Contractor will reassign or layoff unneeded employees.

2. For Foreman wages to be included, that Foreman must have been actively employed on the project prior to the commencement of the delay and be directly responsible for the activity being delayed.

3. Labor burden must be actual amounts incurred but must not exceed the ADOT approved rate.

F. All costs (equipment, material, and labor) must be substantiated by the City of Chandler's Daily Work Reports.

IV. DOCUMENT REQUIRED FOR CLAIM ANALYSIS:

For purposes of reviewing the Contractor's request for additional compensation, it will be required that the Contractor submit the following listed information. Information requested must be prepared on forms which are substantially similar to the City of Chandler's Daily Work Report form, a copy of which is attached as an exhibit.

A. Labor:

For each employee, laborer, and foreman, for which compensation is requested: Name, classification, dates of work performed, daily hours worked, total hours worked, labor rates, labor burden rates, overtime or premium time charges. Further, the Contractor must make available for inspection and copying to the Engineer the following listed documentation.

1. Certified payroll reports for the period of work claimed.
2. Accounting of Fringe Benefits – certified by a CPA.
3. Contractor's and Subcontractor's daily field reports and daily diaries.

B. Materials:

For all materials for which compensation is requested, if any, total quantities of materials, prices, extensions and transportation costs must be provided on a daily basis. Further, the Contractor must make available for inspection and copying to the Engineer the following listed documentation.

1. Invoices for all materials incorporated.
2. Weigh tickets.
3. Purchase orders.

4. Delivery schedules.
5. Quotes or proposals from manufacturers or supplier.
6. Freight bills, Bills of Lading, or other documentation to show transportation costs.
7. Restocking charges-invoices from vendor.

C. Equipment:

For all equipment, the Contractor must provide the Engineer with the designation, dates and hours of usage, dates and hours of standby, if any, daily hours, total hours, rental rates and extension for each unit of equipment and machinery. Rental rates will be as established in Section III. Further, the Contractor must make available for inspection and copying to the Engineer the following listed documentation.

1. Owned:
   a. Purchase contracts(s).
   b. Depreciation schedule(s).
   c. Invoices for fuel, lube, repairs and other operating costs.

2. Leased:
   a. Lease agreement with hourly rate, overtime rate, double shift rate, etc.
   b. Invoices or other documentation showing hours worked on a daily basis.

D. Subcontractors/Owner-Operators:

In the event the Contractor submits a claim which includes requests for compensation for Subcontractors of Owner-Operators, the same information requested of the Contractor must be provided by the Subcontractor/Owner-Operator. Further, the Contractor must make available for inspection and copying to the Engineer the following listed documentation.

1. Bid/Estimate work sheets and/or spreadsheets.
2. Subcontract Agreements or Agreements with Owner-Operator.
3. All invoices and billing statements received from the Subcontractor/Owner-Operator which relates to the amount requested.

E. Miscellaneous:

Further, the Contractor must make available for inspection and copying to the Engineer the following listed documentation.

1. Evidence of payment for bonds and insurance premiums (MAG 109.5.6).
2. Taxes – unless the Contractor can show otherwise, taxes are reimbursable at 65% of the total cost (less bonds and insurance).

V. TIME LIMIT ON SUBMISSIONS OF CLAIM FOR DELAY OR IMPACT DAMAGES:

No claims for delay or impact damages will be considered or allowed more than 45 days after the event or occurrence which the Contractor claims gives rise to the delay or impact. In no event will a

claim for delay or impact damages be considered after submission by the Contractor of the Final Payment Request.

COST REDUCTION INCENTIVE PROPOSALS FOR DESIGN BID BUILD AGREEMENTS

The Contractor may submit to the Engineer proposals for modifying the Plans, Specifications, or other requirements of the Agreement for the sole purpose of reducing the total cost of Project construction. The proposals must not impair in any manner the essential functions or characteristics of the project; including but not limited to service life, economy of operations, ease of maintenance, desired appearance, compatibility with existing or planned equipment, standardization of systems, or design and safety standards.

It must not be inferred from this Policy that the Engineer is required to consider any proposal submitted.

Submissions that propose changes in the basic design of a bridge, propose changes in pipe line size, materials, bedding conditions, pipe specifications; or that propose any change in pavement design will not be considered.

Proposals submitted pursuant to this Policy will be identified as Cost Reduction Incentive Proposals. They must be submitted in writing and, at a minimum, contain the following.

1. Complete the attached or similar cost reduction incentive proposal form.

2. A description of both the existing Agreement Requirements for performing the work and the proposed changes.

3. All Engineering Drawings and computations necessary for the thorough and expeditious evaluation.

4. An itemization of the existing Agreement Requirements that must be changed if the Proposal is adopted and a recommendation as to the manner in which the change should be made.

5. A detailed estimate of the cost of performing the Work under the existing Agreement and under the proposed changes, including the cost of developing and implementing the changes.

6. The Agreement items affected by the proposed changes and any variations in quantities resulting from the changes.

7. An objective estimate of any effects the proposal will have on collateral cost to the City, costs of related items, and cost of maintenance and operation.

8. A statement as to the effect that the Proposal will have on the time for the completion of the Project.

9. A statement as to the time by which a Change Order adopting the Proposal must be executed or when the Engineer must have given verbal approval.

Proposals will be processed expeditiously; however, the City will not be liable for any delay in acting upon any Proposal nor for any failure to accept any Proposal pursuant to this Special Provision.

The Engineer will be the sole judge of the acceptability of a Proposal and of the estimated net savings in construction costs from the adoption of all or any part of the Proposal. The Contractor will be notified in writing by the Engineer as to whether his/her Proposal has been accepted. The decision by the Engineer is final.

When the City deems such action to be appropriate, it reserves the right to require the Contractor to share equally in the cost to the City of investigating, evaluating, and processing the proposal as a condition for the consideration of such Proposal. Such cost must be shared whether the Proposal is accepted or rejected. When such a condition is imposed, the City will estimate these costs and the Contractor must indicate his acceptance thereof in writing. Such acceptance will authorize the City to deduct the Contractor's share of the costs from any monies due or that may become due to the Contractor under the Agreement.

If the Contractor's Proposal is accepted in whole or in part, the necessary Agreement Modifications and Agreement Price Adjustments will be affected by the execution of a Change Order which will specifically state that it is executed pursuant to this Special Provision.

The Contractor must continue to perform the work in accordance with the requirements of the Agreement until a Change Order incorporating the Proposal has been executed or until he/she has been given verbal approval by the Engineer that his/her Proposal has been accepted. If the Change Order has not been executed or he/she has not been given verbal approval on or before the date specified on the attached cost reduction incentive proposal form or on or before such other date as the Contractor may have subsequently specified in writing, the Proposal may be deemed to be rejected.

The executed Change Order will incorporate the changes in the Plans, Specifications, or other requirements of the Agreement which are necessary to permit the Proposal, or such part of it which has been accepted, to be put into effect, and will include any condition – upon which the City's approval thereof is based, if such approval is conditional. The executed Change Order may also extend the time for the completion of the Agreement if such an extension has been deemed to be warranted by the Engineer as a result of his evaluation of the Proposal.

The executed Change Order will also establish the estimated net savings in the cost of performing the Work attributable to the Proposal effectuated by the Change Order. In determining the net savings, the right is reserved to the Engineer to disregard the Agreement bid prices if, in his/her judgment, such prices do not represent a fair measure of the value of the Work to be performed or to be deleted. The net savings will be established by determining the Contractor's cost of performing the Work, taking into account his/her cost of developing the Proposal and implementing the change, and reducing this amount by any ascertainable collateral costs to the City. The executed Change Order may provide that the Contractor be paid 50 percent of the estimated net savings amount.

The executed Change Order may also provide for the adjustment in Agreement prices. Agreement prices may be adjusted by subtracting the City's share of the accrued net savings.

The amount specified to be paid to the Contractor in the executed Change Order which effectuates a Cost Reduction Proposal will constitute full compensation to the Contractor for the Cost Reduction

Proposal and the performance of the work thereof pursuant to the said Change Order.

Upon acceptance of a Cost Reduction Incentive Proposal, any restrictions imposed by the Contractor on its use or on disclosure of the information will become void, and the City thereafter will have the right to use all or any part of the Proposal without obligation or compensation of any kind to the Contractor.

COST REDUCTION INCENTIVE PROPOSAL FORM

TO: CIP City Engineer

FROM:

PROJECT NAME: **Taxiway B Improvements Phase 1**

CITY PROJECT NUMBER: **AI2302.401; ADOT No.: E3S4C**

DATE:

Summary of Change (Brief description of proposed change including advantages and disadvantages):

ESTIMATED COST SUMMARY (Attached detailed estimate):

A.	Original Cost:	$
B.	Proposed Cost:	$
C.	Construction Savings (A-B):	$
D.	Gross Savings (Included OH %, Bond %)	$
E.	Contractor Implementing	$
F.	City Implementing Cost:	$
	Reduction in Agreement Price (C+D-E-F) x 50%:	$

Date by which a Change Order must be issued so as to obtain maximum cost reduction:

CITY OF CHANDLER, ARIZONA
PUBLIC WORKS & UTILITIES DEPARTMENT

CONTRACTOR'S AFFIDAVIT REGARDING SETTLEMENT OF CLAIMS

_____, Arizona
Date _____

Project Name: Taxiway B Improvements Phase 1
City Project No.: AI2302.401; ADOT No.: E3S4C

To the City of Chandler, Arizona

Gentlemen:

This is to certify that all lawful claims for materials, rental of equipment and labor used in connection with the construction of the above project, whether by subcontractor or claimant in person, have been duly discharged.

The undersigned, for the total compensation of $_____, as set out in the final pay application, as full and complete payment under the terms of the Agreement, hereby waives and relinquishes any and all further claims or right of lien under, in connection with, or as a result of the above described project. The undersigned further agrees to indemnify and save harmless the City of Chandler against any and all liens, claims or liens, suits, actions, damages, charges and expenses whatsoever, which said City may suffer arising out of the failure of the undersigned to pay for all labor performances and materials furnished for the performance of said installation.

Signed and dated at _____, this _____ day of _____ 20_____.

_____
CONTRACTOR

By _____

STATE OF ARIZONA)
) SS
COUNTY OF MARICOPA)

The foregoing instrument was subscribed and sworn to before me this _____ day of _____ 20 _____.

_____
Notary Public

_____
My Commission Expires

PERFORMANCE BOND

ARIZONA STATUTORY PERFORMANCE BOND
PURSUANT TO TITLES 28, 34, AND 41, ARIZONA REVISED STATUTES
(Penalty of this bond must be 100% of the Agreement amount)

KNOW ALL MEN BY THESE PRESENTS THAT:_____

(hereinafter "Principal"), and _____ (hereinafter "Surety"), a corporation organized and existing under the laws of the State of _____ with its principal office in the City of _____, holding a certificate of authority to transact surety business in Arizona issued by the Director of Insurance pursuant to Title 20, Chapter 2, Article 1, as Surety, are held and firmly bound unto _____(hereinafter "Obligee") in the amount of _____ (Dollars) ($_____), for the payment whereof, Principal and Surety bind themselves, and their heirs, administrators, executors, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has entered into a certain written Agreement with the Obligee, dated

the _____ day of _____, 20___ for construction of **Taxiway B Improvements Phase 1, City Project No.: AI2302.401; ADOT No.: E3S4C** which Agreement is hereby referred to and made a part hereof as fully and to the same extent as if copies at length herein.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that if the Principal faithfully performs and fulfills all the undertakings, covenants, terms, and conditions of the Agreement during the original term of the Agreement and any extension of the Agreement, with or without notice of the Surety, and during the life of any guaranty required under the Agreement, and also performs and fulfills all the undertakings, covenants, terms, conditions, and agreements of all duly authorized modifications of the Agreement that may hereafter be made, notice of which modifications to the Surety being hereby waived, the above obligation is void. Otherwise it remains in full force and effect.

PROVIDED, HOWEVER that this bond is executed pursuant to the provisions of Title 34, Chapter 2, Article 2, Arizona Revised Statutes, and all liabilities on this bond will be determined in accordance with the provisions of Title 34, Chapter 2, Article 2, Arizona Revised Statutes, to the same extent as if it were copied at length in this Agreement.

The prevailing party in a suit on this bond may recover as part of the judgment reasonable attorney fees that may be fixed by a judge of the court.

Witness our hands this _____ day of _____, 20__.

_____
PRINCIPAL SEAL

_____
AGENT OF RECORD

By _____

_____
SURETY SEAL

_____
AGENT ADDRESS

PAYMENT BOND

ARIZONA STATUTORY PAYMENT BOND
PURSUANT TO TITLES 28, 34, AND 41, OF THE ARIZONA REVISED STATUTES
(Penalty of this Bond must be 100% of the Agreement amount)

KNOW ALL MEN BY THESE PRESENTS THAT:_____

(hereinafter "Principal"), as Principal, and _____(hereinafter "Surety"), a corporation organized and existing under the laws of the State of _____ with its principal office in the City of _____, holding a certificate of authority to transact surety business in Arizona issued by the Director of the Department of Insurance pursuant to Title 20, Chapter 2, Article 1, as Surety, are held and firmly bound unto _____ (hereinafter "Obligee") in the amount of _____ (Dollars) ($_____), for the payment whereof, the Principal and Surety bind themselves, and their heirs, administrators, executors, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has entered into a certain written Agreement with the Obligee, dated the _____ day of _____, 20___ for construction of **Taxiway B Improvements Phase 1, City Project No.: AI2302.401; ADOT No.: E3S4C** which Agreement is hereby referred to and made a part hereof as fully and to the same extent as if copied at length herein.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that if the Principal promptly pays all moneys due to all persons supplying labor or materials to the Principal or the Principal's subcontractors in the prosecution of the work provided for in said Agreement, this obligation is void. Otherwise it remains in full force and effect.

PROVIDED, HOWEVER that this bond is executed pursuant to the provisions of Title 34, Chapter 2, Article 2 Arizona Revised Statutes, and all liabilities on this bond will be determined in accordance with the provisions, conditions and limitations of Title 34, Chapter 2, Article 2, Arizona Revised Statutes, to the same extent as if it were copied at length in this Agreement.

The prevailing party in a suit on this bond may recover as part of the judgment reasonable attorney fees that may be fixed by a judge of the court.

Witness our hands this _____ day of _____, 20__.

_____
PRINCIPAL SEAL

_____
AGENT OF RECORD

By _____

_____
SURETY SEAL

_____
AGENT ADDRESS

DISPUTE RESOLUTION

A. INFORMAL DISPUTE RESOLUTION

The parties to the Agreement agree that time is of the essence in relation to performance of the Agreement and completion of the Project, therefore any and all disputes in relation to the Agreement will initially be referred to the Project Manager, the Design Professional Representative and/or the Contractor Representative as applicable to the dispute, for immediate resolution. If, after good faith efforts to reach a resolution, none is reached, any party to the dispute may submit the dispute to the Dispute Resolution Representative ("DRR") process set forth below, which is intended to be an expedited process.

B. DISPUTE RESOLUTION REPRESENTATIVE ("DRR") PROCESS

1. The Parties under the Agreement agree that all claims and disputes in relation to the Project which are not resolved in the ordinary course of the Project ("Claim" or "Claims") will, as a prerequisite to any mediation, or litigation of the Claim, first be submitted for resolution between the designated Dispute Resolution Representatives of the Parties as set forth herein (the "DRR Process").

2. The DRR Process will be initiated through service of a DRR Notice as set forth below:

   a. For claims by the Contractor or the Design Professional, the DRR Process will be initiated by the party asserting the claim serving written notice on the City setting forth in detail: (i) the basis for the claim; (ii) the effect of the Claim upon the construction of, and/or Project Schedule for, the Project;
   (iii) the specific relief requested, the amount thereof, and how such was calculated; (iv) the parties involved in the Claim, and how they are involved; (v) the specific Agreement provisions in the Agreement Documents (including, if applicable, drawings and specifications) which apply; and (vi) efforts made to date to resolve the Claim.

   b. For claims by the City, the DRR process will be initiated by the City providing written notice to the other parties of the basis and amount of its claim, the parties involved in the Claim, and how they are involved, the provisions in the Agreement Documents that apply, and the relief requested.

   c. The DRR Notice will be hand-delivered and e-mailed to the other parties' designated Dispute Resolution Representatives.

3. The other parties will respond in writing to the DRR Notice ("DRR Response") within ten (10) calendar days of receipt of the DRR Notice, setting forth those items set forth in the DRR Notice that they agree with, dispute, and/or have questions concerning. The DRR Response will be hand-delivered and e-mailed to the other parties' Dispute Resolution Representatives.

4. The designated Dispute Resolution Representatives for the Parties to the claim will then meet as soon as possible and in any event within twenty (20) calendar days of submission of the DRR Notice (regardless of whether a DRR Response has been submitted by all parties involved in the dispute), at a mutually agreed upon time and place, to attempt to resolve the Claim based upon the DRR Notice and DRR Response.

5. At any time after the first meeting required above, either party may terminate the DRR Process by written notice to the other party.

6. The parties may agree, in writing, to extend or modify the time limits or other provisions of the DRR process in relation to a specific pending Claim.

7. Unless otherwise designated in a written notice to the other parties, the City and the representatives of the Contractor and of the Design Professional will act as the parties' designated Dispute Resolution Representatives.

8. If a resolution of the Claim is reached, that resolution must be set forth in writing and must be signed by the Parties' designated Dispute Resolution Representative. If the resolution involves a change in any Agreement Documents, the Agreement Price, the Project Schedule, or any other change requiring a written Change Order or Amendment, the parties must execute an appropriate written Change Order or Amendment pursuant to the terms of the Agreement Documents.

C. MEDIATION

1. Unless extended by written agreement of the parties involved in the dispute, any Claim not resolved through the DRR process set forth above within five (5) calendar days after the meeting required under B (4) above, or after the DRR is terminated pursuant to B (5) above, whichever is earlier, will be submitted to mediation as a condition precedent to litigation by either party.

2. The mediation will be commenced by written demand upon the other party for mediation. If the parties cannot agree upon a mediator within ten (10) calendar days of the written demand, either party may make a request to the Civil Presiding Judge of the Maricopa County Superior Court to appoint a mediator. The mediation will occur within forth (40) calendar days of the written demand for mediation, unless the parties agree, in writing, to a longer period of time.

3. The qualifications for the mediator will be that he/she be: (a) an experienced mediator, arbitrator or litigator of construction disputes; and (b) having engaged a significant portion of his/her time involving and/or resolving construction disputes for at least the past five (5) years.

4. Each party will provide to the other party and the mediator all of the information and documentation required under B(1) and (2) above, together with any additional information and documentation which the party believes relevant. In addition, the parties will exchange, and provide to the mediator such additional memoranda, information and/or documentation, as the

mediator may request, and in the form and at such times, as the mediator may direct.

5. The parties will share the mediator's fee and any filing fees equally. The mediation will be held in Chandler, Arizona, unless another location is mutually agreed upon. Agreements reached in mediation will be specifically enforceable in any court having jurisdiction thereof.

D. LITIGATION

Any claim arising out of or related to the Agreement, except Claims relating to aesthetic effect and except those claims waived as provided for in the Agreement Documents, must be resolved through litigation in the Maricopa County, Arizona Superior Court.

CITY OF CHANDLER, ARIZONA
PUBLIC WORKS & UTILITIES DEPARTMENT

CERTIFICATE OF COMPLETION

PROJECT NAME:	**Taxiway B Improvements Phase 1**		
CITY PROJECT NO.:	**AI2302.401; ADOT No.: E3S4C**		
If Federally Funded:			
FEDERAL NO.:		**ADOT NO:**	

(*This section to be completed by Prime*)
I HEREBY CERTIFY THAT ALL GOODS AND/OR SERVICES REQUIRED BY CITY OF CHANDLER FOR THIS PROJECT HAVE BEEN DELIVERED IN ACCORDANCE WITH THE AGREEMENT DOCUMENTS AND BID SPECIFICATIONS AND ALL ACTIVITIES REQUIRED BY THE AGREEMENTOR UNDER THE AGREEMENT HAVE BEEN COMPLETED AS OF THE COMPLETION DATE LISTED HERE:

FINAL ACCEPTANCE DATE:	

PRIME CONTRACTOR:

FIRM NAME:			
PRINCIPAL:			
TITLE:			
SIGNATURE:		DATE:	

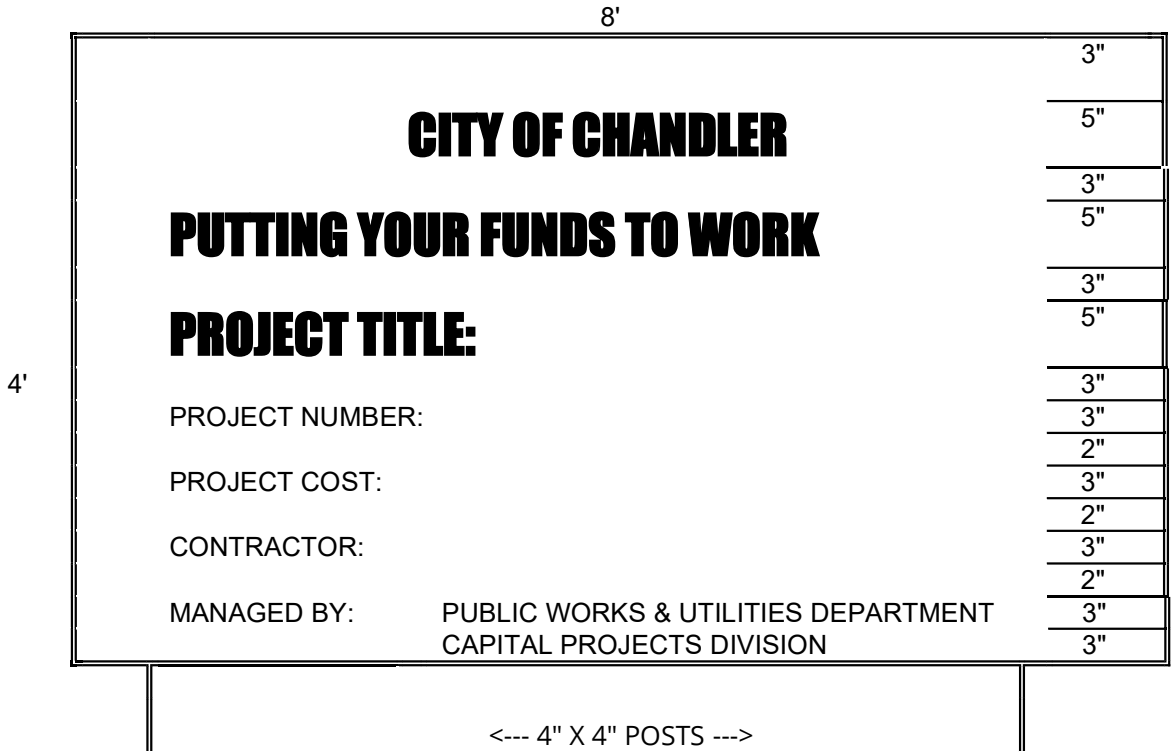
CERTIFIED BY [*INSERT NAME AND TITLE OF PARTY THAT OVERSEES CONSTRUCTION*]:

FIRM NAME:			
SIGNATURE:		DATE:	

PROJECT ACCEPTED BY CITY OF CHANDLER:

NAME:			
SIGNATURE:		DATE:	

CONSTRUCTION SIGN DETAIL



NOTES:

SIGN(S) MUST BE FURNISHED AND ERECTED PRIOR TO COMMENCEMENT OF CONSTRUCTION. POSTS MUST BE ANCHORED A MINIMUM OF TWO FEET INTO THE GROUND. BOTTOM OF SIGN MUST BE A MINIMUM OF FOUR FEET ABOVE THE GROUND.

TYPICAL PROJECT IDENTIFICATION SIGN FOR GENERAL PROJECTS MUST BE NON-REFLECTORIZED GREEN BACKGROUND, AND NON-REFLECTORIZED WHITE LETTERS AND NUMERALS.

ONE SIGN MUST BE ERECTED FOR BUILDINGS AND OTHER LIMITED AREA SINGLE SITES. FOR MULTIPLE SITES, ONE SIGN MUST BE ERECTED AT EACH SITE.

FOR LINEAR PROJECTS ONE HALF MILE OR LONGER, PLACE ONE SIGN AT EACH END OF THE PROJECT.

COST OF THE WORK

(APPLICABLE SOLELY TO CONSTRUCTION MANAGER AT RISK AND JOB ORDER CONTRACTING)

SECTION 1 – COSTS TO BE REIMBURSED

1.1 Cost of the Work

The term Cost of the Work will mean costs necessarily incurred by Contractor in the proper performance of the Work. Such costs must be at rates not higher than the standard paid at the place of the Project except with prior consent of City. The Cost of the Work will include only the items set forth in this Section 1.

1.2 Labor Costs

1.2.1 Wages of construction workers directly employed by the Contractor to perform the construction of the Work at the site or, with City's approval, at off-site workshops. Cost to be reimbursed will be the actual wages paid to the individuals performing the work.

1.2.2 Wages or salaries of the Contractor's supervisory and administrative personnel when stationed at the site with City's approval. No Contractor personnel stationed at the Contractor's home or branch offices will be charged to the Cost of the Work. Non-field office based Contractor management and support personnel are expected to provide service and advice from time to time throughout the job and his/her time devoted to Project matters is considered to be covered by the Contractor's Fee.

1.2.3 Wages and salaries of Contractor's supervisory or administrative personnel who would normally be stationed at the field office in accordance with Section 1.2.2 but who become engaged, at factories, workshops or on the road, in expediting the production or transportation of materials or equipment required for the Work, but only for that portion of his/her time required for the Work. Employee bonuses and/or costs associated with Employee Stock Ownership Plans ("ESOP") will not be considered reimbursable labor or labor burden costs and will be considered non-reimbursable costs considered to be covered by the Contractor's Fee.

1.2.4 Costs paid or incurred by Contractor for taxes, insurance, contributions, assessments and benefits required by law or collective bargaining agreements and, for personnel not covered by such agreements, customary benefits such as sick leave, medical and health benefits, holiday, vacations and pensions, provided such costs are based on wages and salaries included in the Cost of the Work under Subparagraphs 1.2.1 through 1.2.3.

1.2.4.1 Cost of the Work will include the actual net cost to Contractor for worker's compensation insurance attributable to the wages chargeable to the Cost of Work per this Agreement. The actual net cost of worker's compensation must take into consideration all cost adjustments due to experience modifiers, premium discounts, policy dividends, retrospective rating plan premium adjustments, assigned risk pool rebates, any applicable weekly maximums, etc. Contractor may charge an estimated amount for worker's compensation insurance costs, but will make appropriate cost adjustments to actual costs within 45 days of receipt of actual cost adjustments from the insurance carrier.

1.2.4.3 Overtime wages paid to salaried personnel (if approved in advance in writing by City) will be reimbursed at the actual rate of overtime pay paid to the individual. No time charges for overtime hours worked on the Project will be allowed if the individual is not paid for the overtime worked.

1.2.4.4 Any overtime premium or shift differential expense to be incurred by Contractor for hourly workers will require City's advance written approval before the incremental cost of the overtime premium or shift differential will be considered a reimbursable cost. If the Contractor is required to work overtime as a result of an inexcusable delay or other coordination problems caused by the Contractor or anyone he/she is responsible for, the overtime premium and/or shift differential expense portion of the payroll expense and related labor burden costs will be considered as cost not to be reimbursed.

1.2.4.5 Reimbursable labor burden costs will be limited to payroll taxes, worker's compensation insurance, the employer's portion of union benefit costs for union employees working on the Project, and the actual verifiable fringe benefit costs incurred by Contractor for non-union individuals working on the Project subject to the following maximum percentages for the following reimbursable non-union fringe benefit costs. The following maximums (as a percentage of reimbursable actual wages by individual) will apply for each of the following types of fringe benefit costs specifically attributable to each of the non-union personnel working on the Project:

- Medical Insurance, Dental, Life & AD&D Insurance: 12.00%
- Holiday, vacation and other paid time not worked: 10.00%
- Pension Plan Contributions to Vested Employee Account, Simplified Employee Pension Plans, or 401K matching plans (Note: ESOP related costs are covered by the Contractor Fee) 10.00%

For non-union personnel, no other fringe benefit costs (other than the three specific categories listed immediately above, will be considered reimbursable Cost of Work. Any labor burden costs that are in excess of the amounts considered reimbursable or are otherwise not considered reimbursable under the terms of this agreement are intended to be covered by the Contractor Fee.

1.3 Subcontract Costs

1.3.1 Payments made by Contractor to Subcontractors in accordance with the requirements of the subcontracts.

1.3.2 For Scope of Work Bid Packages typically performed by Subcontractors, Contractor may "self- perform" such work on an actual cost basis subject to an agreed upon Guaranteed Maximum Price for the "self-performed work". The Contractor must, unless agreed to by City in writing, bid his/her proposed guaranteed Maximum Price for the work to be "self-performed" against at least three other interested trade Contractors. All savings under any such Subcontract for "self-performed work" must be applied to reduce the Cost of Work under the Agreement and the Guaranteed Maximum Price. For purposes of defining "self-performed work" subject to this provision, any division of Contractor, or any separate Contractor or Subcontractor that is partially owned or wholly owned by the Contractor or any of his/her employees or employee's relatives will be considered a related party entity and will be subject to this provision regarding "self-performed work". No self-performed work will

be allowed to be performed on a Fixed Price basis.

1.3.3 Contractor (with respect to its Suppliers, Subcontractors and all lower tier Subcontractors) must provide City advance written notice and must obtain City's approval for any proposed Subcontract Change Order, Material Purchase Order, or other financial commitment in an amount in excess of $5,000 prior to placing such order or entering into such agreement (regardless of whether or not any such commitment will affect the prime Agreement Guaranteed Maximum Cost). It is agreed that sums applicable to any Subcontract Change Order, Purchase Order or other financial commitment entered into in violation of the above notice and approval requirement will not be included in the amounts owning to Contractor, Subcontractors or Suppliers whether as Costs of the Work or as reasonable termination costs in the event of termination.

1.4 Costs of Material and Equipment Incorporated in the Completed Construction

1.4.1 Costs, including transportation and storage, of materials and equipment incorporated or to be incorporated in the completed construction.

1.4.2 Costs of materials described in the preceding Subparagraph 1.4.1 in excess of those actually installed to allow for reasonable waste and spoilage. Unused excess materials, in any, will become City's property at the completion of the Work or, at City's option, may be sold by the Contractor. Any amounts realized from such sales must be credited to City as a deduction from the Cost of Work.

1.4.3 Proceeds from the sale of recyclable materials, scrap, waste, etc. will be credited to job cost.

1.5 Costs of Other materials and Equipment, Temporary Facilities and Related Items

1.5.1 Costs, including transportation and storage, installation, maintenance, dismantling and removal of materials, supplies, temporary facilities, machinery, equipment and hand tools not customarily owned by construction workers, that are provided by the Contractor at the site and fully consumed in the performance of the Work; and cost (less salvage value) of such items if not fully consumed, whether sold to others or retained by Contractor. Cost for items previously used by Contractor will mean fair market value.

1.5.2 Rental charges for temporary facilities, machinery, equipment, and hand tools not customarily owned by construction workers that are provided by Contractor at the site, whether rented from Contractor or others, and costs of transportation, installation, minor repairs and replacements, dismantling and removal thereof. Rates and quantities of equipment rented will be subject to City's prior written approval.

1.5.2.1 The Projected usage for each piece of equipment to be rented for use on the Project and the estimated total rentals must be considered by Contractor before the piece of equipment is rented so that an appropriate rent versus buy decision can be made. Purchased equipment must be considered "job owned". At the completion of the Project, Contractor must transfer title and possession of all remaining job-owned equipment to City, or Contractor may keep any such equipment for an appropriate fair market value credit to job cost, which will be mutually agreed to by City and Contractor.

1.5.2.2 Each piece of equipment to be rented must have hourly, daily, weekly and monthly rates and

the most economical rate available will be reimbursed based on the circumstances of actual need and usage of the piece of equipment while it is stationed at the jobsite. When the piece of equipment is no longer needed for the work, no rental charges will be reimbursed if the piece of equipment remains at the jobsite for the convenience of Contractor.

1.5.2.3 Equipment Rental Rates

1.5.2.3.1 Compensation for equipment used on the Project will be paid in accordance with the Equipment Plan submitted by Contractor in the accepted GMP Proposal and no payments will be made in excess of the rates set forth in the Equipment Plan, or actual documented costs, whichever is less.

1.5.2.3.2 All equipment rental rates and costs are subject to City's right to audit when submitted as part of Equipment Plan and/or at any time during the Project.

1.5.2.4 The aggregate rentals chargeable for each piece of Contractor owned tools or equipment must not exceed 50% of the fair market value of such equipment at the time of its commitment to the Work. The original purchase price and date of purchase of the equipment will be documented with a copy of the purchase invoice for the piece of equipment. Such aggregate limitations will apply and no further rentals will be charged even if a piece of equipment is taken off the job and is later replaced by a similar piece of equipment. For purposes of computing the aggregate rentals applicable to aggregate rental limitations, rental charges for similar pieces of equipment will be combined if the pieces of equipment were not used at the same time.

1.5.2.5 Fair market value for used material and equipment as referred to in the Agreement Documents will mean the estimated price a reasonable purchaser would pay to purchase the used material or equipment at the time it was initially needed for the job. Note: This is usually lower than the price a reasonable purchaser would pay for similar new construction material or construction equipment.

1.5.2.6 All losses resulting from lost, damaged or stolen tools and equipment will be the sole responsibility of Contractor, and not City, and the cost of such losses will not be reimbursable under the Agreement.

1.5.2.7 Contractor will be required to maintain a detailed equipment inventory of all job-owned equipment (either purchased and charged to job cost or job-owned through aggregate rentals) and such inventory must be submitted to City each month. For each piece of equipment, such inventory should contain at a minimum (1) original purchase price or acquisition cost (2) acquisition date (3) approved Fair Market Value at the time the piece of equipment was first used on the job and (4) final disposition.

1.5.2.8 All costs incurred for minor maintenance and repairs will be reimbursed at actual cost. Such costs include routine and preventative maintenance, minor repairs and other incidental costs. Repairs and/or replacement of a capital nature are considered to be covered by the rental rates. Major repairs and overhauls are not considered routine and ordinary; consequently such costs are not reimbursable and are intended to be covered by the rental rates.

1.5.3 Costs of removal of debris from the Site.

1.5.4 Costs of document reproductions, facsimile transmissions and long-distance telephone calls, postage and parcel delivery charges, telephone service at the site and reasonable petty cash expenses of the site office.

1.5.5 That portion of the reasonable expenses of Contractor's personnel incurred while traveling in discharge of duties connected with the Work.

1.5.5.1 No travel expenses will be reimbursed to Contractor's representatives unless Project related travel required them to travel to a destination more than 100 miles from the Project location. Any travel involving airfare will require advance written approval by an authorized City's representative.

1.5.6 Costs of materials and equipment suitably stored off the site at a mutually acceptable location, if approved in advance by the City.

1.5.7 Reproduction costs will be the actual costs of reproduction subject to a maximum of five cents ($.05) per square foot for prints and a maximum of five cents ($.05) per 8 ½ by 11-inch page for offset print or photo copied agreement documents, specifications, etc. Telephone costs will be the actual costs paid to the third party telephone company for the field office telephone.

1.6 Miscellaneous Costs

1.6.1 That portion of insurance and bond premiums that can be directly attributed to the Agreement. The City will reimburse Contractor for contractually required bond at time of first pay application for GMP and Cost-Based Agreements upon receipt of proof of payment from the Contractor. If the Contractor completes Work for less than the Agreement Price, Contractor must credit the City a pro- rated amount for the unused portion of the bond payment

1.6.1.1 Contractor's actual cost for insurance will be considered to be included within the Maximum limit for General Conditions Costs. All premiums for any insurance and bonds required for the Project must reflect the net actual costs to Contractor after taking into consideration cost adjustments due to experience modifiers, premium discounts, policy dividends, retrospective rating plan premium adjustments, assigned risk pool rebates, refunds, etc.

1.6.1.2 The amount to be reimbursed to Contractor for all contractually required insurance will be actual costs not to exceed a total of 2% of the Agreement Value, unless Contractor establishes to City's satisfaction that the actual cost is higher and City agrees to such actual higher cost in writing. If Contractor's cost of contractually required insurance is greater than the amount agreed to be reimbursed per this Agreement Provision, the difference will be considered to be covered by the Contractor's Fee. The City will reimburse Contractor for contractually required insurance on a monthly basis for GMP and Cost-Based Agreements. If Contractor can demonstrate substantial savings by paying for all insurance in advance, the City may agree to reimburse all insurance costs at time of first pay application for GMP and Cost-Based Agreements with proof of payment from Contractor.

1.6.2 Sales, use or similar taxes imposed by a governmental authority that are related to the Work.

1.6.3 Fees and assessments for the building permit and for other permits, licenses and inspections for which Contractor is required by the Agreement Documents to pay.

1.6.4 Fees of laboratories for tests required by the Agreement Documents, except those related to defective or nonconforming Work and which do not fall within the scope of ¶ 1.7.3 below.

1.6.5 Royalties and license fees paid for the use of a particular design, process or product required by the Agreement Documents; the cost of defending suites or claims for infringement of patent rights arising from such requirement of the Agreement Documents; and payments made in accordance with legal judgments against Contractor resulting from such suites or claims and payments of settlements made with City's consent. However, such costs of legal defenses, judgments and settlements must not be included in the calculation of the Contractor's Fee or subject to the Guaranteed Maximum Price.

1.6.6 Data processing costs related to the Work. However, any such data processing costs will be limited to the cost of personal computer hardware used at the field office in the normal day to day administration, management and control of the Project. The aggregate charges for any such hardware must not exceed the Fair Market Value of the hardware at the time it was brought to the field office. If the total charges for any particular piece of hardware reach an amount equal to the Fair Market Value, that particular piece of hardware must be turned over to City whenever it is no longer needed for the Project. If Contractor elects to keep the particular piece of hardware, the job costs must be credited with a mutually agreeable amount which will represent the Fair Market Value of the particular piece of hardware at the time it was no longer needed for the job. Software or other costs associated with the use of computer programs will not be considered to be a reimbursable cost and will be considered to be covered by the Contractor's Fee.

1.6.7 Deposits lost for causes other than Contractor's negligence or failure to fulfill a specific responsibility to City as set forth in the Agreement Documents.

1.6.8 Legal, mediation and arbitration costs, including attorneys' fees, other than those arising from disputes between City and Contractor, reasonably incurred by Contractor in the performance of the Work and with City's prior written approval; which approval will not be unreasonably withheld.

1.6.9 Expenses incurred in accordance with Contractor's standard personnel policy for relocation and temporary living allowances of personnel required for the Work, if pre-approved by City in writing. If City authorizes the reimbursement of relocation costs, the reimbursable relocation expenses will be limited to a maximum of $50,000 per person. Any relocation cost incurred by Contractor in excess of the amount reimbursed by City will be considered to be covered by the Contractor's Fee.

1.7 Other Costs and Emergencies

1.7.1 Other costs incurred in the performance of the Work if and to the extent approved in advance in writing by City.

1.7.2 Costs due to emergencies incurred in taking action to prevent threatened damage, injury or

loss in case of an emergency affecting the safety of persons and property.

1.7.3 Costs of repairing or correcting damaged or nonconforming Work executed by Contractor, Subcontractors or Suppliers, provided that such damaged or nonconforming Work was not caused by negligence or failure to fulfill a specific responsibility of Contractor and only to the extent that the cost of repair or correction is not recoverable by Contractor from insurance, sureties, Subcontractors or Suppliers.

1.8 Related Party Transactions

1.8.1 The term "related party" will mean a parent, subsidiary, affiliate or other entity having common ownership or management with Contractor; any entity in which any stockholder in, or management employee of, Contractor owns any interest in excess of ten percent in the aggregate; or any person or entity which has the right to control the business or affairs of Contractor. The term "related party" includes any member of the immediate family of any person identified above.

1.8.2 If any of the costs to be reimbursed arise from a transaction between Contractor and a related party, Contractor must notify City in writing of the specific nature of the contemplated transaction, including the identity of the related party and the anticipated cost to be incurred, before any such transaction is consummated or cost incurred. If City, after such notification, authorizes in writing the proposed transaction, then the cost incurred will be included as a cost to be reimbursed, and Contractor must procure the Work, equipment, goods or service from the related party, as a Subcontractor. If City fails to authorize the transaction, Contractor must procure the Work, equipment, goods or service from some person or entity other than a related party.

SECTION 2 – COSTS NOT TO BE REIMBURSED

2.1 The Cost of Work must not include:

2.1.1 Salaries and other compensation of Contractor's personnel stationed at Contractor's principal office or offices other than the site office, except as specifically provided in Subparagraphs 1.2.2 and 1.2.3.

2.1.2 Expenses of Contractors' principal office and offices other than the site office.

2.1.3 Overhead and general expenses, except as may be expressly included in Section 1.

2.1.3.1 Costs of Contractor's home office computer services or other outside computer processing services will be considered overhead and general expense. Accordingly, Contractor should not plan to perform any such computer related services or alternatives at the field office when such services or functions can be performed at Contractor's home or branch offices, or other outside service locations.

2.1.4 Contractor's capital expenses, including interest on Contractor's capital employed for the Work.

2.1.5 Rental costs of machinery and equipment, except as specifically provided in subparagraph 1.5.2.

2.1.6 Except as provided in Subparagraph 1.7.3 of the Agreement, costs due to the negligence or failure to fulfill a specific responsibility of Contractor, Subcontractors and Suppliers or anyone directly or indirectly employed by any of them or for whose acts of them may be liable.

2.1.7 Any cost not specifically and expressly described in Section 1.

2.1.8 Costs, other than costs included in Change Orders approved by City that would cause the GMP to be exceeded.

SECTION 3 – DISCOUNTS, REBATES, REFUNDS AND SAVINGS

3.1 Cash discounts obtained on payments made by Contractor will accrue to City if (1) before making the payment, Contractor included them in an Application for Payment and received payment therefore from City, or (2) City has deposited funds with Contractor with which to make payments; otherwise, cash discounts will accrue to Contractor. Trade discounts, rebates, refunds and amounts received from sales or surplus materials and equipment will accrue to City, and Contractor must make provisions so that they can be secured.

3.1.1 Cost of the Work will be credited with all insurance policy discounts, performance and payment bond rebates or refunds, refunds or return premiums from any Subcontractor default insurance, refunds or rebates from any Contractor controlled insurance programs applicable to the Project, merchandise rebates of any nature, refunds of any nature, insurance dividends; and a portion of any volume rebates or free material credits earned with purchase of material or other goods and services charged to the job.

3.1.2 "Cash" discounts which may accrue to Contractor will be limited to a maximum of 1.5% of invoice cost. Any portion of "Cash" discounts greater than 1.5% will automatically accrue to City if Contractor is eligible to take advantage of the discounts.

3.2 Amounts that accrue to City in accordance with the provisions of Paragraph 3.1 will be credited to City as a deduction from the Cost of the Work.

3.3 Any and all savings on the GMP, or any separately guaranteed items comprising the GMP, will belong to City, subject to any express right in the Agreement for Contractor to share in savings. Savings are subject to City's right to audit, and may be audited separately.

SECTION 4 – GENERAL CONDITIONS COSTS

4.1 General Conditions Costs may include, but are not limited to, the following types of costs incurred by Contractor during construction of the Work to the extent they are reimbursable Costs of the Work as delineated above: payroll costs for Work conducted at the site, payroll costs for the superintendent and full-time general foremen, payroll costs for management personnel resident and working on the site workers not included as direct labor costs engaged in support (e.g. loading/unloading, clean-up, etc.), administrative office personnel, costs of offices and temporary facilities including office materials, office supplies, office equipment, minor expenses, utilities, fuel, sanitary facilities and telephone services at the site, costs of liability insurance premiums not included in labor burdens for direct labor

costs, costs of bond premiums, costs of consultants not in the direct employ of Contractor or Subcontractors, fees for permits and licenses.

4.2 General Conditions Costs may be paid on a percentage of the Agreement Price or on a lump/stipulate sum basis as set forth in the Agreement. All costs included in the General Conditions Costs will not be separately invoiced to or paid by City.

4.3 The total amount of General Conditions Costs for the Work may be divided by the number of days allowed for performance of the Work, to determine a fixed daily rate for General Conditions Costs that may be used in computing the General Conditions Costs allocated to any period of time, or for any adjustments in the General Conditions Costs agreed to in writing by City.

LANDSCAPE ESTABLISHMENT PERIOD

Section 1 – Description and General

Contractor is in direct control of work performed under the Landscape Establishment Period. If work is subcontracted, a representative of the Contractor will be present at the site of the work for all hours that the subcontractor works. Subcontracting of Landscape Establishment work will be permitted for weed eradication with herbicides, because of special licensing. A licensed temporary service may be used to supply labor to Contractor if Contractor has received approval from City Representatives. Contractor will submit the required subcontract documentation.

Contractor must provide adequate personnel to accomplish the required maintenance of the plant materials at intervals acceptable to City Representatives.

If not healthy at the end of the maintenance period, the maintenance must be continued until the plant material is approved by City.

1.1 Time and Schedule

Unless otherwise expressly agreed to in writing by City, the Landscape Establishment Period will be per General Conditions Section 6.5.4.

1.2 Planted Stock and Seeding Establishment

1.2.1 Tree planting and staking must be per City of Chandler Standard Detail C-801.

1.2.2 All trees will stand erect on their own without stakes when brought to this site. If the tree cannot stand on its own when nursery stakes are removed, the tree will be removed and replaced.

1.3 Pre-Emergent Herbicide and Weed Control

1.3.1 Contractor will provide three applications of an approved pre-emergent herbicide on all unpaved areas of the project, as directed by City Representatives, to control weed growth in all areas of the project. The number of applications may be increased as directed by the City Representative, and at no additional cost to City, if the City Representative deems additional applications are required to control weed growth.

1.3.2 Application sequence will be approved in advance by City. The first application of pre-emergent will be completed prior to the application of Decomposed Granite and will be included with the cost of the Decomposed Granite as specified and part of the Construction Phase portion of work. The second application of pre-emergent will be completed after installation of the Decomposed Granit and no later than half-way through the Landscape Establishment Period. The third and final application of pre-emergent will be applied 15 days prior to completion of the Landscape Establishment portion of the project. The second and third pre-emergent applications will be included with the cost of Landscape Establishment. Watering will be completed in accordance with the manufacturer's recommendations, as included and as related to each application.

1.3.3 The pre-emergent herbicide will be applied in accordance with the Technical Specifications and the recommendations of the pre-emergent herbicide manufacturer, as approved by City Representatives.

1.3.4 The control of weeds will be accomplished by the use of herbicides. Manual removal of weeds will be required, after herbicides have taken affect.

1.3.5 Contractor is responsible for the removal and disposal of all trash and debris that during the Landscape Establishment Period. Contractor will keep the project in a neat and orderly manner during the duration of the Landscape Establishment Period.

1.4 Water

The water used during Landscape Establishment to properly maintain the plant material will be furnished by City, at designated sources from within the project limits, at no charge to Contractor. Contractor will be responsible for all equipment, materials and labor necessary to load, transport and unload water for watering purposes.

1.5 Plant Material Replacements

The plant material replacement will be considered as included in the work for Landscape Establishment, and will be made at no charge to the City.

1.5.1 Shrub and Plant Replacement - During the second half of the Landscaping Establishment period, Contractor will provide, where required, plant replacements as follows:

Original Size	**Replacement Size**
1 gallon	5 gallon
5 gallon	15 gallon
15 gallon	24-inch box
36-inch box	48-inch box

1.5.2 Tree Replacement – During the second half of the Landscape Establishment Period, Contractor will provide plant material replacements for existing plants that die as follows:

Existing Plant Material Sizes	**Replacement Size**
Trees:	
2-inch Caliper	24-inch box
4-inch Caliper	36-inch box
6-inch Caliper and greater	54-inch box
Shrubs:	
All Existing Shrubs	15 gallon

1.6 Measurement and Payment

See Technical Specifications for Measurement Payment provisions.

EXHIBIT C

TECHNICAL SPECIFICATIONS

PROJECT SPECIFICATIONS

Chandler Municipal Airport
Taxiway 'B' Improvements Phase 1: Taxiway 'L' to Taxiway 'N'

City Project No: AI2302.401
ADOT Project No: E3S4C
Dibble Project No.: 1021015.11

Prepared For:
City of Chandler

September 27, 2024

CHANDLER arizona

DIBBLE

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Prepared For:
Chandler Municipal Airport
2380 S Stinson Way
Chandler, AZ 85286

September 27, 2024

Duane Dana, PE
Senior Project Manager

Dibble



CITY OF CHANDLER
CHANDLER MUNICIPAL AIRPORT
Taxiway 'B' Improvements Phase 1

City Project No.: AI2302.401

ADOT Project No.: E3S4C

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DIVISION I

SPECIAL PROVISIONS

CITY OF CHANDLER
Chandler Municipal Airport
Taxiway 'B' Improvements Phase 1
City Project No: AI2302.401
ADOT Project No: E3S4C

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SECTION 50 UTILITIES AND EXISTING FACILITIES

50.01 General

This item shall govern the field location of all underground existing utilities in areas to be improved, to avoid conflicts with proposed surface or underground improvement. Work under this section shall include, but not be limited to, the location of all underground facilities. Underground facilities means any item that is buried or placed below ground for use in connection with the storage or conveyance of water, sewage, electronic, telephone or telegraphic communications, electric energy, oil, gas or other substances, and shall include, but not be limited to pipes, sewers, conduits, cables, valves, lines, wires, manholes, attachments and those portions of poles and their attachments below ground, including electrical and communication ducts, airfield lighting and control cables, fiber optic lines, storm drains, electrical and telephone lines. The Contractor shall employ a private utility location service to locate the existing Owner and non-Owner utilities prior to starting the work. The Contractor shall pothole and use prudent care when excavating and locating said utilities.

The Contractor shall comply with the State requirements regarding excavation and underground utilities per A.R.S., Chapter 2, Article 6.3. and Sections 40.360.31 and other pertinent Sections of the Blue Stake Law. The Airport is not a member, but has distribution systems for gas, electrical, water, and sewer on the site. The Contractor shall be responsible for locating all Owner and non-Owner utilities.

The Contractor's attention is directed to the following Arizona Revised Statutes:

a. ARS 40-360.22. Excavations, determining location of underground facilities; providing information. This statute requires that no person shall begin excavation before the location and marking are complete or the excavator is notified that marking is unnecessary and requires that upon notification, the Owner of the facility shall respond as promptly as practical, but in no event later than two (2) working days. This section is not applicable to an excavation made during an emergency that involves danger to life, health or property if reasonable precautions are taken to protect underground facilities.

b. ARS 40-360.23. Making excavations in careful, prudent manner; liability for negligence. This statute states that obtaining information as required does not excuse any person making any excavation from doing so in a careful and prudent manner, nor shall it excuse such persons from liability for any damage or injury resulting from his negligence.

c. ARS 40-360.28. Civil penalty; liability. If the Owner or operator fails to locate, or incorrectly locates the underground facility, pursuant to this article, the Owner or operator becomes liable for resulting damages, costs and expenses to the injured party.

The Contractor is hereby advised that the location of all utilities, as shown on the Plans, may not be complete nor exact and the Contractor shall satisfy himself as to the exact location of the utilities. The Contractor shall be responsible for any damage done to public or private property and such damage shall be repaired at the Contractor's expense.

Location of any underground utility lines may be field verified by calling the Blue Stake Center (Arizona 811) telephone number 811 or create a ticket online using E-Stake at:

https://exactix.arizona811.com/

The Contractor is required to call at least two (2) working days before digging. The Contractor shall locate all utilities including those that Blue Stake will not locate.

The Contractor is to protect all existing facilities during construction. The Contractor shall notify the appropriate Utility Company or agency of any construction that may affect their facilities.

Measurement for "Location of Underground Utilities" shall be by the lump sum for subcontractors (i.e., Utility Designation/Potholing contractor) to complete utility locating in the project area.

Payment for location of underground utilities, measured as prescribed above, shall be paid based on the cost of completed work. Such payment shall be full compensation for furnishing all labor, equipment tools and materials and for all designation, preparation, excavation, backfilling and placing of materials; and for all incidentals necessary. Payment for the cost of each utility location will not be made until survey data has been submitted and approved by the Engineer.

Payment will be made under:

No. 4, Spec No. SP–50.01.1 Location of Underground Utilities – per Allowance

50.02 Water for Construction Purposes

The Contractor, at his expense, shall provide all water required for, and in connection with, the work to be performed. The Contractor shall remove all temporary waterlines installed, after completion of the work, if directed to do so by the Engineer.

It is the Contractor's responsibility to identify the water source and its compatibility, storage, and costs for all water requirements for this project. The Contractor must submit a water source and its intended use to the Engineer for approval. No direct payment will be made for construction water. The cost thereof shall be included in other items for which direct payment is made.

50.03 Electrical Power

All power for lighting, operation of Contractor's plant or equipment, or for any other use as may be required in the execution of the work to be performed under the provision of these Contract Documents shall be provided by the Contractor at his expense. The Contractor shall remove all temporary electrical facilities installed, after completion of the work, if ordered to do so by the Engineer.

50.04 Sanitary Facilities

The Contractor shall furnish temporary sanitary facilities at the site, as provided herein, for the needs of all construction workers and other performing work or furnishing services on the Project. Sanitary facilities shall be of reasonable capacity, properly maintained throughout the construction period, and obscured from public view to the greatest practical extent. If toilets of the chemically treated type are used, at least one toilet will be furnished for each 20 men. Contractor shall enforce the use of such sanitary facilities by all personnel at the site.

END SECTION 50

SECTION 60 OPERATIONS, SAFETY AND SECURITY

60.01 Definitions

a. Air Carrier Aircraft
An aircraft with a seating capacity of more than 5 passengers that is being operated by an air carrier.

b. Air Carrier Operation
The takeoff and landing of an air carrier aircraft and includes the period of time from 15 minutes before and until 15 minutes after the takeoff or landing.

c. Air Operations Area (AOA)
Air operations area, paved or unpaved, is any area of the airport used for or intended for landing, takeoff, or surface maneuvering of aircraft including its associated runway, taxiway, or apron.

d. Airfield Operations Specialist
CHD employee who monitors activities within the Airport Restricted Areas. Operations Specialists ensure a safe and secure operating environment is maintained on the airfield.

e. Airport Marking Aids
Marking used on runway and taxiway surfaces to identify a specific runway, a runway threshold, a centerline, a hold line, etc. A runway should be marked in accordance with its present usage such as: visual, non-precision instrument, precision instrument.

f. Construction
The presence and movement of construction-related personnel, equipment, and materials in any location that could infringe upon the movement of aircraft.

g. Escort
A person authorized by CHD to accompany contractor personnel within the Airport Restricted Area. The escort shall accompany or monitor the activities of an individual(s) in a manner sufficient to take responsive action in a sized area approved by the Engineer. A proper escort is defined as maintaining visual monitoring, within reasonable voice range and being able to react to the actions of those under escort.

h. FAA
The Federal Aviation Administration, a branch of the U.S. Department of Transportation that regulates aviation and airport safety and certification.

i. FOD
Foreign Object Debris/Damage, meaning any object that is potentially hazardous to aircraft.

j. General Aviation
That portion of civil aviation which encompasses all facets of aviation except air carriers holding a certificate of public convenience and necessity from a Civil Aeronautics Board and Large aircraft commercial operators.

k. Haul Route
A specified path created for vehicles to maneuver within the Airport Restricted Area to/from a work site. Haul routes are subject to the approval of the Engineer in accordance with the Contract Documents.

l. Instrument Landing System (ILS)
An electronic visual approach guidance system used by aircraft during landing operations.

m. Movement Area
The runways, taxiways, and other areas of an airport that are used for taxiing or hover taxiing, air taxiing, takeoff, and landing of aircraft, exclusive of loading ramps and aircraft parking areas (reference 14 CFR part 139).

n. Navigational Aid (NAVAID)
An apparatus generally located within the AOA, serving as a guide to aircraft.

o. Obstruction
Any object/obstacle exceeding the obstruction standards specified by 14 CFR part 77, subpart C.

p. Object Free Area (OFA)
An area on the ground centered on the runway, taxiway, or taxilane centerline provided to enhance safety of aircraft operations by having the area free of objects except for those objects that need to be located in the OFA for air navigation or aircraft ground maneuvering purposes (see AC 150/5300-13, *Airport Design*, for additional guidance on OFA standards and wingtip clearance criteria).

q. Obstacle Free Zone (OFZ)
The airspace below 150 feet (45m) above the established airport elevation and along the runway and extended runway centerline that is required to be clear of all objects, except for frangible visual NAVAIDs that need to be located in the OFZ because of their function, in order to provide clearance protection for aircraft landing or taking off from the runway and for missed approaches (refer to AC 150/5300-13 for guidance on OFZs).

r. Precision Approach Path Indicator (PAPI)
An airport lighting facility providing vertical visual approach slope guidance to aircraft during approach to landing by radiating a directional pattern of high intensity red and white focused light beams which indicate to the pilot that he/she is "on path" if he sees red/white, "above path" if white/white, and "below path" if red/red.

s. Restricted Area
Areas that do not allow access to the general public. These are limited access areas that the Executive Director, the FAA, or commercial aviation business owners have elected to restrict for purposes of security or safety. It is enclosed by a perimeter fence and includes but is not limited to the AOA, perimeter roadways, haul routes, contractor security gate and worksite.

t. Runway
A defined rectangular area on a land airport prepared for the landing and takeoff run of aircraft along its length. Runways are normally numbered in relation to their magnetic direction rounded off to the nearest 10 degrees; e.g., runway 16 and runway 34.

u. Runway End Identifier Lights (REIL)
Two synchronized flashing lights, one on each side of the runway threshold, which provides rapid and positive identification of the approach end of a particular runway.

v. Runway Lights/Runway Edge Lights
Lights having a prescribed angle of emission used to define the lateral limits of a runway. Runway lights are uniformly spaced and the intensity may be controlled or preset.

w. Runway Safety Area (RSA)
A defined surface surrounding the runway prepared or suitable for reducing the risk of damage to airplanes in the event of an undershoot, overshoot, or excursion from the runway, in accordance with AC 150/5300-13.

x. Safety Area
A designated area abutting the edges of a runway or taxiway intended to reduce the risk of damage to an aircraft inadvertently leaving the runway or taxiway.

y. Taxi
The movement of an airplane under its own power on the surface of an airport.

z. Taxiway
A defined surface used by aircraft for transition/movement to and from aircraft parking areas/aprons to runways.

aa. Taxiway Lights/Taxiway Edge Lights
Lights having a prescribed angle of emission used to define the lateral limits of a taxiway and are blue in color.

bb. Threshold Lights
Fixed green lights arranged symmetrically left and right of the runway centerline, identifying the runway threshold.

cc. TSA
The Transportation Security Administration, a branch of the U.S. Department of Homeland Security that oversees aviation security.

dd. Visual Flight Rules (VFR)
Rules that govern the procedures for conducting flight under visual conditions. The term "VFR" is also used in the United States to indicate weather conditions that are equal to or greater than minimum VFR requirements.

ee. Worksite
Area in which work under contract is being performed, generally starting at the contractor on-site trailer. Airport ID badges must be displayed within the worksite at all times.

60.02 Airport Security Requirements

The airport is operated in strict compliance with TSA and Federal Aviation Regulations (FAR), which prohibit unauthorized persons or vehicles in the AOA. Equipment and workmen will be restricted to the work area defined on the plans. Any violation by Contractor's personnel or subcontractors will subject the Contractor to penalties imposed by the TSA, FAA or CHD.

The Contractor shall be responsible for the protection of the construction site, and all work, materials, equipment, and existing facilities thereon, against vandals and other unauthorized persons. Security measures shall include such additional security fencing, barricades, lighting, and other measures as the Contractor may deem necessary to protect the site.

The Contractor's responsibilities for work areas are as follows:

1. The Contractor shall be held responsible for controlling his employees, subcontractors, and their employees with regard to traffic movement.

2. The Contractor shall rebuild, repair, restore, and make good at his own expense all injuries or damages to any portion of the work occasioned by his use of these facilities before completion and acceptance of his work.

3. The Contractor shall submit to the Engineer in writing a detailed work plan for each construction phase. The work plan shall include, but not be limited to, temporary electrical facilities and paving/seal sequence. This plan shall be submitted 14 calendar days prior to the start of each construction phase. No work within the construction phase may commence until the phase work plan is approved.

4. The Contractor shall submit to the Engineer in writing a plan, by construction phase, for controlling construction equipment and vehicular movements in the Air Operations Area (AOA). This plan shall be submitted at the Pre-Construction Conference. No work may commence until this plan is approved. The Plan must include material haul roads.

5. Any time construction occurs within airport property, the Contractor shall be responsible for assuring that no breeches of airport property occur through his respective construction access gate. Restricted areas are fenced and must remain fenced at all times. The gates will remain closed and locked or a guard will be provided at the Contractor's expense. The Contractor will furnish the guard with a roster of his personnel and ensure that each individual has adequate identification. The duplicate keys for each lock will be turned over to the airport.

    - No person shall enter the Contractor's worksite without authorization. Any person found within the worksite without proper identification as described herein shall be considered unauthorized and shall be removed from the worksite.
    - Persons authorized to provide escorts include CHD staff and designated Contractor supervisors. The number of personnel being escorted shall not exceed ten (10) personnel; this includes vendors, subcontractors, visitors and part-time workers. **Failure to provide an escort can result in loss of escort privileges and fines.**

60.03 Airport Safety Requirements

a. Operating Construction Vehicles on the Airport

No vehicle shall enter the contractor worksite unless the following conditions are met:

- The driver is authorized to access the worksite.
- The driver possesses a valid driver's license.
- The vehicle is properly marked with the company name.
- Vehicle is marked with lighted beacon or checkered flag or under escort.
- Transient haul truck drivers are required to check in with the contractor security guard.

b. Prohibited Vehicles

The use of motorcycles, bicycles, two-wheeled motor scooters and privately-owned vehicles within the worksite is strictly prohibited.

c. Vehicle Condition

Vehicles must be in good mechanical condition with operational lights, horn, brakes, and clear visibility from the driver's seat. Trailers and semi-trailers must be equipped with proper brakes so that when disengaged from a towing vehicle, neither aircraft engine blast nor wind will cause them to become free rolling.

d. Compliance

All traffic within the Airport Restricted Area and/or contractor worksite must comply with any lawful order, signal or direction of any Airport employee. When such traffic is controlled by signs or pavement markings, such symbols shall be obeyed, unless otherwise directed by an officer or agent of the Airport.

e. Night or Low Visibility Operations

All vehicle headlights, taillights, and running or clearance lights shall be in operational condition. Headlights shall be used at all times.

f. Construction Vehicle and Equipment Markings

All construction equipment and vehicles shall have flashing amber beacons mounted at the highest point during the nighttime, and a 3' x 3' orange and white checkered flag or a flashing amber beacon during the daytime. All vehicles and equipment on the construction site shall have company designations visibly displayed. No personal vehicles will be allowed in the work area. All construction vehicles and equipment must have the company name and/or logo and vehicle number at least four (4) inches in height on each side of the vehicle.

g. Operation of Vehicles within the Airport Restricted Area

No vehicle shall operate within the Airport Restricted Area:

- In a careless or negligent manner.
- With disregard of the rights and safety of others.
- At a speed or in a way which endangers persons or property.
- While the driver is under the influence of drugs or alcohol.
- If such vehicle is loaded or maintained as to endanger persons or property.

h. Speed Limits

The speed limit on perimeter roads is 25 miles per hour. The speed limit on the haul routes is 15 miles per hour.

i. Vehicle Accidents

Each operator of a motor vehicle involved in an accident on the airport that results in damage to property or personal injury shall first contact **9-1-1** and then report it fully to Airport Operations as soon as possible after the accident. The report must include the name and address of the person reporting. Copies of reports taken by City of Chandler are acceptable for incidents that occur in the public areas of the airport.

j. Hearing Protection

Contractor personnel working on or adjacent to the AOA are encouraged to wear hearing protection.

k. Worker Injuries

In the event of a serious injury requiring medical attention, call **9-1-1** and notify the operator you are at the Chandler Municipal Airport. All injuries must also be reported to Airport Operations as soon as possible.

l. After Hours Contacts

The Contractor shall submit to the Engineer a list of personnel who can be contacted 24 hours a day, seven (7) days a week and can respond in a reasonable time frame regarding any possible emergency on the work site. The list must include names, job titles and phone numbers.

m. Daily Site Inspections

Prior to the Contractor leaving the worksite for the day, an inspection of the site shall be completed. All discrepancies noted in the inspection must be corrected to the satisfaction of the Engineer prior to the Contractor leaving the worksite.

n. Deliveries

All deliveries for the Contractor shall be received by the Contractor. Deliveries will not be accepted by anyone other than the Contractor. CHD and its authorized representatives will not accept or be responsible for deliveries.

o. Runway and Taxiway Closures

Taxiway and runway closures require a minimum of:

- Prior notification and coordination in accordance with the Contract Documents.
- Closure requests shall factor in time for unanticipated events such as weather and equipment malfunction.
- Movement area closure schedules must be met. The Contractor shall advise the Engineer immediately of any need to extend a closure.
- Failure to meet a closure schedule may result in fines.
- Barricade lights must be red in color and either steady burn or flashing.
- Strict adherence and coordination with the phasing plans found within the Construction Plans.

- Two Lighted X's shall be provided by the Airport for this project during runway closures. The Contractor is fully responsible to operate and maintain the Lighted X's including the lights and fuel. Lighted X's are required to be placed at the beginning of each nightly closure and removed before reopening the runway. No work can take place within the phase requiring nighttime closures without the Lighted X's being in place and operational.

q. Haul Routes

A portion of the haul route is in the City of Chandler Public Right-of-Way and Contractor shall abide by City of Chandler Traffic regulations. Contractor shall maintain access in the vicinity of the haul routes to provide access to the parking lot and CHD vehicles.

Placards will be issued to transient haul trucks (i.e. concrete) upon entry into the Restricted Area by the gate guard.

r. Cranes or Mobilized Equipment

All activities involving cranes or mobilized vehicles exceeding 20 feet in height on or near the AOA require 48-hour advance coordination with Airport Operations. The following information is required:

- Location of equipment
- Maximum extendable height
- Duration of use
- Daily hours of operation
- Whether or not the crane can be lowered when not in use

Equipment must be lowered to its stowed height when not in use or as otherwise directed. The **highest point** of each piece of equipment shall be marked by a 3' x 3' orange and white checkered flag. At night and during periods of low visibility, the highest point of the crane must be marked by a red obstruction light. Crews must be prepared to remove equipment promptly if so directed.

s. Runway Safety Areas

Construction within the following areas is prohibited, unless required by the Contract Documents and is subject to approval of the Engineer.

- Within 75 feet parallel to an active runway centerline
- Within 39.5 feet parallel to a taxiway centerline
- Within 300 feet of the end of an active runway

t. Staging & Storage Area

All contractor materials, equipment and supplies shall be within the contractor's designated staging and storage area. All staging and storage areas shall be marked, debris boxes covered and area kept neat and clean of debris.

For equipment that must remain in the work area, the following conditions must be met:

- Be located outside of the runway/taxiway safety and obstruction free areas.
- Be marked with lighted barricades around the equipment perimeter with a spacing of no more than 10 feet.

- Be coordinated at least 48 hours in advance with the Engineer.
- The highest point of the equipment marked and lit with a red flashing/steady burning omni-directional obstruction light.

u. Barricades & Lighting

The perimeters of the actual work areas, all uneven surfaces, mounds and excavations shall be adequately barricaded with vertical panel barricades, low level barricades and/or Type II barricades and lighted with omni-directional flashing red lights to prevent intrusion by taxiing aircraft, equipment and vehicles. Low profile barricades shall be supplemented with flashing high intensity red lights. Low level barricades shall be orange and white in color and shall be a minimum of six (6) feet in length and ten (10) inches in height. All cones and other marking devices must be lighted or equipped with reflectors during periods of darkness as directed by Airport Operations.

The Contractor will be responsible for placing and maintaining the low-profile barricades. The Contractor will provide a 24/7 point of contact capable of responding within one (1) hour to address issues with the barricades.

All barricades and cones must be maintained and kept in proper working order by the Contractor. All burnt out lights or inoperative batteries must be replaced immediately. Barricades and cones must remain upright at all times.

The placement of sandbags on barricades may be required in situations of adverse weather. In addition, the Contractor must keep an adequate supply of extra barricades, lights and batteries on site. Escorts for barricade maintenance must be provided by the Contractor or coordinated in advance with Airport Operations.

Only red, battery-powered or approved solar-powered, omni-directional lights are acceptable within the Restricted Area of the airport.

See Special Provisions Section 60.05 for additional information and barricading requirements.

v. Trenches and Excavations

Contractors shall close trenches located within active safety areas at the end of each workday. No open trenches or excavations will be allowed within the following active safety areas without prior coordination and approval with the Engineer:

- Within 75 feet parallel to a runway centerline (trenches/excavations within 75 feet of a runway centerline require a runway closure which is subject to strict controls).
- Within a taxiway object free area.
- Within 1,000 feet of the end of a runway.
- Open trenches not to exceed 500 feet in length at any one time.
- Spoils from excavations are to be placed on the runway/taxiway side that is closest to the trench.
- Spoils length not to exceed 500 feet in length at any one time.
- Spoil height is not to exceed 4 feet or any height that would cause a visual obstruction.

- Spoils not returned to the trench or removed from the worksite are to be properly marked with lighted barricades with a spacing of no more than 8' or that to properly delineate the trench.

w. Stockpiled Material

Stockpiled materials are allowed only within the Contractor's designated staging & storage areas.

- Remove daily all stockpiled material from within aircraft movement areas, unless otherwise directed by the Engineer.
- No excavated or stored materials may remain within active runway or taxiway safety areas and object free zones.
- Stockpiled material may be located within the Air Operations Area only upon prior coordination and approval of the Engineer.

x. Contractor Security Guards

The following procedures are for Contractor security guards controlling Contractor access gates into the Restricted Areas. Only personnel and vehicles meeting the following conditions will be allowed access within the Airport Restricted Area:

- Authorized contractors and subcontractors with driver endorsement.
- Authorized suppliers and service companies under positive escort.
- Airport vehicles with proper identification.
- Tenant vehicles with the proper identification.
- Transient haul trucks with proper placard displayed.

y. Haul Trucks

Transient haul truck drivers are required to check in with the Contractor security guard. The driver shall be issued an orange/white checkered flag to be mounted on the highest point of the truck; and shall be returned to the security guard upon check out. Advise the driver to remain on the marked haul route and follow the appropriate signs to the intended work area. At no time shall a driver unfamiliar with the worksite be allowed to deviate from the marked haul route.

y. Weapons

No person, except a peace officer, authorized air carrier employee, airport employee or a member of an armed force of the United States on official duty, shall carry any weapon, explosive, or inflammable material on or about his person, openly or concealed, on airport property. No person shall furnish, give, sell, or trade a weapon on airport property. A weapon includes all those listed in Section 13-3101, Arizona Revised Statutes.

z. Security Guard Responsibilities

- Use primary radio or back-up telephone equipment to notify Airport Operations and the Contractor Foreman of any security violation or threat to airport safety. Report any failure of radio or back-up equipment immediately.
- Assure that all authorized Contractor employees or suppliers use designated haul route and staging areas.
- Monitor the Restricted Area access gate at all times and NEVER leave a gate open, unsecured or unattended.

aa. Contractor Responsibilities

- The Contractor must maintain and provide to the Engineer a log detailing the contract number, the airfield access point used, and all authorized and anticipated subcontractors and suppliers that will be requiring entry.
- The Contractor must furnish guards with a sufficient number of flags for transient vehicles such as concrete or asphalt trucks entering the Property.
- The Contractor must furnish guards a means of securing the access point should the guard have to leave the area in an emergency.

60.04 Schedule of Fines

Due to both the safety and security precautions necessary at CHD and the impact to airport users, failure of the Contractor to adhere to the prescribed requirements/regulations has consequences that may jeopardize the health, welfare and lives of the customers and employees at CHD, as well as the Contractor's own employees. Therefore, if the Contractor is found to be in non-compliance with the security, airfield badging/licensing and airfield safety requirements by either the Owner's personnel or the Engineer or his representatives, the Owner may issue a Notice of Violation (NOV). The Contractor may appeal the NOV; however, appeals must be made in writing, and within four (4) calendar days of the offending incident, to the CHD Project Representative. The appeal shall state, in sufficient detail, why the NOV/circumstance is unwarranted. A final and binding decision on the appeal will be made by Airport Operations within ten (10) working days of receipt of the appeal, and the Contractor will then be notified of this decision in writing. No further appeals to the specific NOV will be considered/accepted. Subsequent fines and/or requirements, if any, will be applied in accordance with the **Schedule of Fines** listed below and the applicable amount will be withheld from the Contractor's monthly payment application following the date of the violation. The Prime Contractor shall be held financially responsible for all NOV's issued to their subcontractors, lower tier subcontractors, or material suppliers associated with this Contract.

Schedule of Fines	
Description Of Fines	**Per Person Per Occurrence**
Runway or Taxiway Safety Area Incursion	$1,000
Taxiway Incursion	$2,500
Runway Incursion	$2,500
Security Violation	$2,500
Level 1 Violation of Airport Rules and Regulations	$250
Level 2 Violation of Airport Rules and Regulations	$500
Level 3 Violation of Airport Rules and Regulations	$1,000

60.05 Traffic Control, Barricading and Cleanup

General Requirements:

The Contractor shall submit a Cleanup Plan for approval by the Owner to be followed at the close of each day's work. At a minimum, the Plan shall include an itemized, detailed list of tasks and equipment to be used to properly clear all areas within Runway and Taxiway Safety Areas in accordance with FAA AC 150/5370-2 (latest revision). The Plan shall specifically identify all work to be performed on a daily basis for each Phase of construction identified on the plans. The Plan shall also include the requirement of the Contractor and Engineer to perform a site walk of the entire effected area of construction a minimum of 2 hours before that area is scheduled to be reopened to aircraft traffic to assure that it has be cleaned and cleared of all equipment and debris in accordance with FAA AC 150/5370-2 (latest edition).

The Contractor shall also be responsible for delineating the limits of construction operations consistent with the approved Phasing and Barricading Safety Plan(s) and/or as directed by the Airport. The Contractor shall submit a Phasing and Barricading Safety Plan(s) as required in the Airport's Construction Safety Plan.

The Contractor shall be responsible for providing, the installation of, and the maintenance of barricades and traffic control devices necessary for the control of aircraft, vehicular, and pedestrian traffic. Any requests to modify the approved barricading and phasing plans must be submitted to the City for review and approval.

The Airfield Safety and Security and Barricade/Temporary Fencing and Traffic Control Plans must be submitted by the Contractor at the Pre-Construction Conference.

Measurement and payment for the Airfield Safety and Security Plans identified above shall be considered incidental to the project, and shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals necessary to complete the work to the satisfaction of the Owner, as shown on the plans or as directed by the Engineer.

Barricade Requirements:

All construction areas shall be delineated with low-profile barricades that meet FAA standards to prevent intrusion by taxiing aircraft, vehicles, or pedestrians, (FAA AC 150/5370-2, latest edition). Low level barricades shall be orange in color with white reflective tape on both sides of the barricade and shall be a minimum of six (6) feet in length and a maximum of ten (10) inches in height, (not including required flagging or lights).

All barricades must be equipped with RED omni-directional lights, either flashing or steady burning, to provide additional visual warning whether during normal daytime and nighttime operations or during periods of reduced visibility due to weather conditions. Lights may be either battery-powered or solar-powered; however, the intensity of the lights must be sufficient to adequately and without ambiguity delineate the construction areas. The Contractor is responsible to maintain all barricade lights in working conditions to the approval of the Airport.

Barricades should include orange or alternating orange and white checkered flags at least 20 inches by 20 inches square and securely fastened to eliminate jet engine ingestion. The barricades shall be installed so that they are always in the extended position and properly oriented. Maximum spacing between barricades shall be eight (8) feet, or as shown on the approved plans, or as directed by the Airport.

The use of frangible hazard markings, such as concrete barriers, railroad ties and/or metal-drum-type barricades is prohibited. For certain non-movement areas, the City may consider the use of Type II or other similar barricades with prior approval.

a. Non-Movement Areas

In addition to the general barricade requirements above, for projects that may impact airport business and facilities, it will be necessary to coordinate ingress and egress routes with the City. The Contractor shall coordinate and make provisions, including barricading, to accommodate aircraft movements to and from existing businesses and facilities within the construction area.

b. Movement Areas

In addition to the general barricade requirements above, all barricades, temporary markers, and other objects placed and left in safety areas associated with any runway, taxiway, or taxilane must be as low as possible to the ground; of low mass; easily collapsible upon contact with an aircraft or any of its components; and weighted to prevent displacement from prop wash, jet blast, rotor wash, or surface wind.

Special Requirements:

1. The Contractor shall be allowed to have a maximum of five (5) red flashing lights out of service at a single time. The Contractor shall be fined $250 each night that six (6) or more barricade lights are out of service. All fines shall be paid directly to the Airport.

2. The Contractor shall coordinate his construction so that taxiways and runways are open to traffic during weekends to the greatest extent possible consistent with FAA Safety Standards and the Airport's operational requirements.

3. The Contractor shall employ a "designated" person who will be responsible for ensuring that all barricades, signs, barricade lights, and any other traffic control devices are established and maintained in strict compliance with the contract requirements. The designated person shall:

a. Inspect all barricading and traffic control devices on a regular, recurring basis to ensure functionality and compliance with FAA standards.

b. Ensure that existing airport signage and lighting does not conflict or create any confusion with the barricades and traffic control devises and shall immediately bring any conflicting conditions to the attention of the City Inspector.

c. Be available 24 hours a day to maintain all barricades including lights and flags used to delineate construction and hazardous areas in fully operational condition.

d. Ensure that flagmen, when employed, are sufficiently trained to operate safely on the airport.

Aircraft Movement Area:

a. Vehicle Equipment – Daytime Operations:
All Contractor vehicles and equipment operating in the AOA during daylight hours must be equipped with either a 3-foot by 3-foot international orange and white checker patterned flag mounted on a staff and secured to the vehicle in such a location as to be visible from all directions or a flashing amber beacon, light bar or similar warning light device mounted on the vehicle in such a location as to be visible from any direction.

b. Vehicle Equipment –Escort Operations:
Contractor vehicles may be used to escort a maximum of three (3) other vehicles onto AOA, (only for a short period of time). The vehicle providing the escort must lead and is responsible for the trailing vehicle(s).

When any vehicle other than those routinely used on the runways, taxiways and aprons is required to travel over any portion of aircraft movement areas, it shall be escorted by a vehicle properly identified to operate in the area or be provided with a flag on a staff so attached to the vehicle so that the flag will be readily visible.

A flag or escort vehicle is not required for vehicles that have been painted, marked, and lighted for routine use on aircraft movement areas. Any vehicle operation on the movement area during the hours of darkness shall be equipped with a flashing amber dome-type beacon.

Vehicular traffic crossing active movement areas must be controlled by two-way radio in communication with the control tower and by escort or flagman. The clearance shall be confirmed by the driver's personal observation that no aircraft is approaching his position. Aircraft have the right-of-way at all times.

Airport Construction Restrictions and Requirements:
The Contractor is responsible for compliance at all times with the policies and guidelines specified in Chandler Municipal Airport's *Construction Safety Plan*, and with the FAA Advisory Circular (AC) 150/5370-2 (latest edition), *Operational Safety on Airports During Construction*. These documents may be made available to the Contractor upon request.

Approved Airfield Radios:
If needed, the Contractor shall be responsible for obtaining and maintaining ICOM IC-A24/A6 VHF Air Band Transceiver radios, or approved equal, for his crews for use during construction and will not be permitted to borrow radios from the airport for use during construction. At a minimum, the Contractor shall provide radios for the Project Superintendent, all personnel required to control construction traffic across active runways, taxiways, and parking aprons, and operators on controlled surfaces, (i.e. sweeper operators, escort vehicles, or others who have need to operate/transit outside of the restricted construction areas). All costs associated with acquiring and maintaining the approved radios shall be considered incidental to SP-60.05.1 bid item and no separate payments will be made.

Haul Route:
The Contractor must follow the haul route provided on the Approved Plans, or as directed by the Airport and/or Resident Project Representative (RPR). The Contractor shall keep all work areas clean of debris and shall be fully liable for any damages that occur to an aircraft caused by construction debris. The Contractor shall be responsible to restore any damages to any pavement used as haul routes incurred during construction to the original state at no additional cost to the owner. All cost associated with the restoration of the haul routes shall be considered incidental to other appropriate bid items and no separate payments will be made.

Measurement and Payment:
Measurement and payment for Airfield Safety and Security shall be by lump sum and shall be considered full compensation for furnishing all labor, materials, fuel, warning lights, crossing guards, escorts, furnishing, placing, and maintaining (day and night) all temporary fencing, barricades and lights, maintaining and operating Airport-supplied Lighted X's, all vehicle and equipment markings, and training for all construction personnel, tools, equipment, flagmen, cell phones, radios, and incidentals to safely control traffic as identified in these Special Provisions and in the *Construction Safety and Phasing Plan* (Appendix A) to provide the proper security for Chandler Municipal Airport.

Partial payments of the lump sum item will be made uniformly over the contract time, provided that the airfield safety and security is maintained and satisfactory to the RPR. All costs for all work, tools, equipment, materials, etc. for Airfield Safety and Security as described herein shall be provided in the bid line item provided below.

Payment will be made under:

No. 5, Spec No. SP-60.05.1	Airfield Safety and Security – per Lump Sum

END SECTION 60

SECTION 70 MISCELLANEOUS

70.01 Project Signs

The Contractor shall furnish and erect one (1) project sign and one or more access gate sign(s). The signs shall be maintained by the Contractor for the duration of the project and shall be removed by the Contractor during final clean-up. The Owner in the Pre-Construction Conference shall determine the location of the project sign. The sign shall be furnished and erected by the Contractor prior to the start of construction. The project sign shall 4 feet by 8 feet, mounted on 4-inch by 4-inch posts buried 48 inches deep (minimum), where the sign is 3 feet above grade. The information on the sign shall be determined by the Chandler Municipal Airport, below is an example:

City of Chandler
DOLLARS AT WORK
CHANDLER MUNICIPAL AIRPORT

Taxiway 'B' Improvements Phase 1
FINANCED BY
ADOT and the City of Chandler
Project Cost: $_____

The gate signs shall be 2 sign faces back to back and facing both directions of traffic. The gate sign shall be 4 feet by 8 feet, mounted on 4-inch by 4-inch posts buried 48 inches deep (minimum), where the sign is 3 feet above grade. The information on the gate signs shall be non-reflective green background and nonreflective white letter and numbers, as follows:

CHANDLER MUNICIPAL AIRPORT
GATE NO. ____

No direct payment will be made for furnishing and erecting the project sign and the access gate sign(s). The cost thereof shall be included in other items for which direct payment is made. The Engineer or his authorized representative shall determine the gate sign location(s).

If required by the Engineer, the Contractor shall provide and maintain public relations banners consisting of at least two (2) banners per staging area. The banners shall be approximately five (5) feet in height and twenty (20) feet in length, three (3) color vinyl reading the information above and including the "Chandler Municipal Airport" logos, or as directed by the Airport. Banners will be replaced as necessary to provide an acceptable condition. The Contractor shall not display or advertise their name or logo on the outside of the security fence or gates.

END SECTION 70

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SECTION 80 CONSTRUCTION ITEMS

80.01 Riprap

Description

Riprap shall be in accordance MAG Specifications Section 703, (D50 = 6-inches at 12-Inch Depth). All riprap shall consist of rounded river rock. The riprap shall be constructed to a minimum depth as noted in the plans, at the locations shown in the plans or as directed by the RPR. The top of the riprap shall be built flush where it lies with the adjacent grade around it or as directed by the RPR. Any work found to be inconsistent with the plans, details, and the specifications will require the removal and replacement at the Contractor's sole expense. All earthwork excavation and miscellaneous removals necessary required for riprap installation as directed by the RPR shall be considered incidental to the riprap payment line item provided below.

Method of Measurement

Measurement for riprap shall be made by the square yard and shall include furnishing and installing all material complete in place, as called for on the plans and shall include all costs of removal of obstructions, excavation, compaction, and all other related work not specifically covered in other pay items.

Method of Payment

Payment for riprap shall be made at the contract unit price per square yard. This price shall include compensation in full for furnishing and installing material complete in place, as called for on the plans and shall include all costs of removal of obstructions, excavation, compaction, and all other related work not specifically covered in other pay items.

Payment will be made under:

No. 6, Spec No. SP-80.01.1	Riprap (D50 = 6-Inch, T = 12-Inch) – per Square Yard

END SECTION 80

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DIVISION II

CIVIL TECHNICAL SPECIFICATIONS

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Item C-100 Contractor Quality Control Program (CQCP)

100-1 General. Quality is more than test results. Quality is the combination of proper materials, testing, workmanship, equipment, inspection, and documentation of the project. Establishing and maintaining a culture of quality is key to achieving a quality project. The Contractor shall establish, provide, and maintain an effective Contractor Quality Control Program (CQCP) that details the methods and procedures that will be taken to assure that all materials and completed construction required by this contract conform to contract plans, technical specifications and other requirements, whether manufactured by the Contractor, or procured from subcontractors or vendors. Although guidelines are established and certain minimum requirements are specified here and elsewhere in the contract technical specifications, the Contractor shall assume full responsibility for accomplishing the stated purpose.

The Contractor shall establish a CQCP that will:

a. Provide qualified personnel to develop and implement the CQCP.

b. Provide for the production of acceptable quality materials.

c. Provide sufficient information to assure that the specification requirements can be met.

d. Document the CQCP process.

The Contractor shall not begin any construction or production of materials to be incorporated into the completed work until the CQCP has been reviewed and approved by the Resident Project Representative (RPR). No partial payment will be made for materials subject to specific quality control (QC) requirements until the CQCP has been reviewed and approved.

The QC requirements contained in this section and elsewhere in the contract technical specifications are in addition to and separate from the quality assurance (QA) testing requirements. QA testing requirements are the responsibility of the RPR or Contractor as specified in the specifications.

100-2 Description of program.

a. General description. The Contractor shall establish a CQCP to perform QC inspection and testing of all items of work required by the technical specifications, including those performed by subcontractors. The CQCP shall ensure conformance to applicable specifications and plans with respect to materials, off-site fabrication, workmanship, construction, finish, and functional performance. The CQCP shall be effective for control of all construction work performed under this Contract and shall specifically include surveillance and tests required by the technical specifications, in addition to other requirements of this section and any other activities deemed necessary by the Contractor to establish an effective level of QC.

b. Contractor Quality Control Program (CQCP). The Contractor shall describe the CQCP in a written document that shall be reviewed and approved by the RPR prior to the start of any production, construction, or off-site fabrication. The written CQCP shall be submitted to the RPR for review and approval at least 10 calendar days before the CQCP Workshop. The Contractor's CQCP and QC testing laboratory must be approved in writing by the RPR prior to the Notice to Proceed (NTP).

The CQCP shall be organized to address, as a minimum, the following:

1. QC organization and resumes of key staff
2. Project progress schedule
3. Submittals schedule
4. Inspection requirements
5. QC testing plan
6. Documentation of QC activities and distribution of QC reports
7. Requirements for corrective action when QC and/or QA acceptance criteria are not met
8. Material quality and construction means and methods. Address all elements applicable to the project that affect the quality of the pavement structure including subgrade, subbase, base, and surface course. Some elements that must be addressed include, but is not limited to mix design, aggregate grading, stockpile management, mixing and transporting, placing and finishing, quality control testing and inspection, smoothness, laydown plan, equipment, and temperature management plan.

The Contractor must add any additional elements to the CQCP that is necessary to adequately control all production and/or construction processes required by this contract.

100-3 CQCP organization.

a. QC technicians. A sufficient number of QC technicians necessary to adequately implement the CQCP must be provided. These personnel must be either Engineers, engineering technicians, or experienced craftsman with qualifications in the appropriate field equivalent to NICET Level II in Civil Engineering Technology or higher, and shall have a minimum of two (2) years of experience in their area of expertise.

The QC technicians must report directly to a responsible project supervisor and shall perform the following functions:

1. Inspection of all materials, construction, plant, and equipment for conformance to the technical specifications, and as required by paragraph 100-6.
2. Performance of all QC tests as required by the technical specifications and paragraph100-8.
3. Performance of tests for the RPR when required by the technical specifications.

Certification at an equivalent level of qualification and experience by a state or nationally recognized organization will be acceptable in lieu of NICET certification.

b. Staffing levels. The Contractor shall provide sufficient qualified QC personnel to monitor each work activity at all times. Where material is being produced in a plant for incorporation into the work, separate plant and field technicians shall be provided at each plant and field placement location. The scheduling and coordinating of all inspection and testing must match the type and pace of work activity. The CQCP shall state where different technicians will be required for different work elements.

100-4 Project progress schedule. Critical QC activities must be shown on the project schedule as required by Section 80, paragraph 80-03, *Execution and Progress*.

100-5 Submittals schedule. The Contractor shall submit a detailed listing of all submittals (for example, mix designs, material certifications) and shop drawings required by the technical specifications. The listing can be developed in a spreadsheet format and shall include as a minimum:

a. Specification item number

b. Item description

c. Description of submittal

d. Specification paragraph requiring submittal

e. Scheduled date of submittal

100-6 Inspection requirements. QC inspection functions shall be organized to provide inspections for all definable features of work, as detailed below. All inspections shall be documented by the Contractor as specified by paragraph 100-9.

Inspections shall be performed as needed to ensure continuing compliance with contract requirements until completion of the particular feature of work. Inspections shall include the following minimum requirements:

a. During plant operation for material production, QC test results and periodic inspections shall be used to ensure the quality of aggregates and other mix components, and to adjust and control mix proportioning to meet the approved mix design and other requirements of the technical specifications. All equipment used in proportioning and mixing shall be inspected to ensure its proper operating condition. The CQCP shall detail how these and other QC functions will be accomplished and used.

b. During field operations, QC test results and periodic inspections shall be used to ensure the quality of all materials and workmanship. All equipment used in placing, finishing, and compacting shall be inspected to ensure its proper operating condition and to ensure that all such operations are in conformance to the technical specifications and are within the plan dimensions, lines, grades, and tolerances specified. The CQCP shall document how these and other QC functions will be accomplished and used.

100-7 Contractor QC testing facility.

a. For projects that include Item P-401, Item P-403, and Item P-404, the Contractor shall ensure facilities, including all necessary equipment, materials, and current reference standards, are provided that meet requirements in the following paragraphs of ASTM D3666, *Standard Specification for Minimum Requirements for Agencies Testing and Inspecting Road and Paving Materials*:

8.1.3 Equipment Calibration and Checks;

8.1.9 Equipment Calibration, Standardization, and Check Records;

8.1.12 Test Methods and Procedures

100-8 QC testing plan. As a part of the overall CQCP, the Contractor shall implement a QC testing plan, as required by the technical specifications. The testing plan shall include the minimum tests and test frequencies required by each technical specification Item, as well as any additional QC tests that the Contractor deems necessary to adequately control production and/or construction processes.

The QC testing plan can be developed in a spreadsheet fashion and shall, as a minimum, include the following:

a. Specification item number (e.g., P-401)

b. Item description (e.g., Hot Mix Asphalt Pavements)

c. Test type (e.g., gradation, grade, asphalt content)

d. Test standard (e.g., ASTM or American Association of State Highway and Transportation Officials (AASHTO) test number, as applicable)

e. Test frequency (e.g., as required by technical specifications or minimum frequency when requirements are not stated)

f. Responsibility (e.g., plant technician)

g. Control requirements (e.g., target, permissible deviations)

The QC testing plan shall contain a statistically-based procedure of random sampling for acquiring test samples in accordance with ASTM D3665. The RPR shall be provided the opportunity to witness QC sampling and testing.

All QC test results shall be documented by the Contractor as required by paragraph 100-9.

100-9 Documentation. The Contractor shall maintain current QC records of all inspections and tests performed. These records shall include factual evidence that the required QC inspections or tests have been performed, including type and number of inspections or tests involved; results of inspections or tests; nature of defects, deviations, causes for rejection, etc.; proposed remedial action; and corrective actions taken.

These records must cover both conforming and defective or deficient features, and must include a statement that all supplies and materials incorporated in the work are in full compliance with the terms of the contract. Legible copies of these records shall be furnished to the RPR daily. The records shall cover all work placed subsequent to the previously furnished records and shall be verified and signed by a responsible project supervisor.

Contractor QC records required for the contract shall include, but are not necessarily limited to, the following records:

a. Daily inspection reports. Each Contractor QC technician shall maintain a daily log of all inspections performed for both Contractor and subcontractor operations. These technician's daily reports shall provide factual evidence that continuous QC inspections have been performed and shall, as a minimum, include the following:

1. Technical specification item number and description
2. Compliance with approved submittals
3. Proper storage of materials and equipment
4. Proper operation of all equipment
5. Adherence to plans and technical specifications
6. Summary of any necessary corrective actions
7. Safety inspection.
8. Photographs and/or video

The daily inspection reports shall identify all QC inspections and QC tests conducted, results of inspections, location and nature of defects found, causes for rejection, and remedial or corrective actions taken or proposed.

The daily inspection reports shall be signed by the responsible QC technician and a responsible project supervisor. The RPR shall be provided at least one copy of each daily inspection report on the work day following the day of record. When QC inspection and test results are recorded and transmitted electronically, the results must be archived.

b. Daily test reports. The Contractor shall be responsible for establishing a system that will record all QC test results. Daily test reports shall document the following information:

1. Technical specification item number and description
2. Test designation
3. Location
4. Date of test
5. Control requirements
6. Test results
7. Causes for rejection
8. Recommended remedial actions
9. Retests

Test results from each day's work period shall be submitted to the RPR prior to the start of the next day's work period. When required by the technical specifications, the Contractor shall maintain statistical QC charts. When QC daily test results are recorded and transmitted electronically, the results must be archived.

100-10 Corrective action requirements. The CQCP shall indicate the appropriate action to be taken when a process is deemed, or believed, to be out of control (out of tolerance) and detail what action will be taken to bring the process into control. The requirements for corrective action shall include both general requirements for operation of the CQCP as a whole, and for individual items of work contained in the technical specifications.

The CQCP shall detail how the results of QC inspections and tests will be used for determining the need for corrective action and shall contain clear rules to gauge when a process is out of control and the type of correction to be taken to regain process control.

When applicable or required by the technical specifications, the Contractor shall establish and use statistical QC charts for individual QC tests. The requirements for corrective action shall be linked to the control charts.

100-11 Inspection and/or observations by the RPR. All items of material and equipment are subject to inspection and/or observation by the RPR at the point of production, manufacture or shipment to determine if the Contractor, producer, manufacturer or shipper maintains an adequate QC system in conformance with the requirements detailed here and the applicable technical specifications and plans. In addition, all items of materials, equipment and work in place shall be subject to inspection and/or observation by the RPR at the site for the same purpose.

Inspection and/or observations by the RPR does not relieve the Contractor of performing QC inspections of either on-site or off-site Contractor's or subcontractor's work.

100-12 Noncompliance.

a. The Resident Project Representative (RPR) will provide written notice to the Contractor of any noncompliance with their CQCP. After receipt of such notice, the Contractor must take corrective action.

b. When QC activities do not comply with either the CQCP or the contract provisions or when the Contractor fails to properly operate and maintain an effective CQCP, and no effective corrective actions have been taken after notification of non-compliance, the RPR will recommend the Owner take the following actions:

1. Order the Contractor to replace ineffective or unqualified QC personnel or subcontractors and/or
2. Order the Contractor to stop operations until appropriate corrective actions are taken.

METHOD OF MEASUREMENT

100-13 Basis of measurement and payment. Contractor Quality Control Program (CQCP) is for the personnel, tests, facilities, and documentation required to implement the CQCP. The CQCP will be paid as a lump sum with the following schedule of partial payments:

a. With first pay request, 25% with approval of CQCP.

b. When 25% or more of the original contract is earned, an additional 25%.

c. When 50% or more of the original contract is earned, an additional 20%.

d. When 75% or more of the original contract is earned, an additional 20%

e. After final inspection and acceptance of project, the final 10%.

BASIS OF PAYMENT

100-14 Payment will be made under:

No. 1, Spec No. C-100-14.1 Contractor Quality Control Program (CQCP) – per Lump Sum

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

National Institute for Certification in Engineering Technologies (NICET)

ASTM International (ASTM)

ASTM C1077	Standard Practice for Agencies Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Testing Agency Evaluation
ASTM D3665	Standard Practice for Random Sampling of Construction Materials
ASTM D3666	Standard Specification for Minimum Requirements for Agencies Testing and Inspecting Road and Paving Materials

END OF ITEM C-100

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Item C-102 Temporary Air and Water Pollution, Soil Erosion, and Siltation Control

DESCRIPTION

102-1.1 This item shall consist of temporary control measures as shown on the plans or as ordered by the Resident Project Representative (RPR) during the life of a contract to control pollution of air and water, soil erosion, and siltation through the use of silt fences, berms, dikes, dams, sediment basins, fiber mats, gravel, mulches, grasses, slope drains, and other erosion control devices or methods.

Temporary erosion control shall be in accordance with the approved erosion control plan; the approved Construction Safety and Phasing Plan (CSPP) and AC 150/5370-2, *Operational Safety on Airports During Construction*. The temporary erosion control measures contained herein shall be coordinated with the permanent erosion control measures specified as part of this contract to the extent practical to assure economical, effective, and continuous erosion control throughout the construction period.

Temporary control may include work outside the construction limits such as borrow pit operations, equipment and material storage sites, waste areas, and temporary plant sites.

Temporary control measures shall be designed, installed and maintained to minimize the creation of wildlife attractants that have the potential to attract hazardous wildlife on or near public-use airports.

102-1.2 This project is subject to the terms and conditions of Arizona Pollutant Discharge Elimination System (AZPDES) General Permit No. AZG2020-001 for Storm Water Discharges Associated with Construction Activities (*2020 CGP*). Under the provisions of the *2020 CGP*, both the County and the Contractor shall be designated as operators, and both must ensure compliance with the terms and conditions contained therein.

Work under this item shall consist of preparing all required documents and certifications, performing inspections, and furnishing all materials, labor, and equipment necessary to comply with all requirements of *2020 CGP*.

MATERIALS

102-2.1 Grass. Grass that will not compete with the grasses sown later for permanent cover per Item T-901 shall be a quick-growing species (such as ryegrass, Italian ryegrass, or cereal grasses) suitable to the area providing a temporary cover. Selected grass species shall not create a wildlife attractant.

102-2.2 Mulches. Mulches may be hay, straw, fiber mats, netting, bark, wood chips, or other suitable material reasonably clean and free of noxious weeds and deleterious materials. Mulches shall not create a wildlife attractant.

102-2.3 Fertilizer. Fertilizer shall be a standard commercial grade and shall conform to all federal and state regulations and to the standards of the Association of Official Agricultural Chemists.

102-2.4 Slope drains. Slope drains may be constructed of pipe, fiber mats, rubble, concrete, asphalt, or other materials that will adequately control erosion.

102-2.5 Silt fence. Silt fence shall consist of polymeric filaments which are formed into a stable network such that filaments retain their relative positions. Synthetic filter fabric shall contain ultraviolet ray inhibitors and stabilizers to provide a minimum of six months of expected usable construction life. Silt fence shall meet the requirements of ASTM D6461.

102-2.6 Other. All other materials shall meet commercial grade standards and shall be approved by the RPR before being incorporated into the project.

CONSTRUCTION REQUIREMENTS

102-3.1 General. In the event of conflict between these requirements and pollution control laws, rules, or regulations of other federal, state, or local agencies, the more restrictive laws, rules, or regulations shall apply.

The RPR shall be responsible for assuring compliance to the extent that construction practices, construction operations, and construction work are involved.

102-3.2 Schedule. Prior to the start of construction, the Contractor shall submit schedules in accordance with the approved Construction Safety and Phasing Plan (CSPP) and the plans for accomplishment of temporary and permanent erosion control work for clearing and grubbing; grading; construction; paving; and structures at watercourses. The Contractor shall also submit a proposed method of erosion and dust control on haul roads and borrow pits and a plan for disposal of waste materials. Work shall not be started until the erosion control schedules and methods of operation for the applicable construction have been accepted by the RPR.

102-3.3 Construction details. The Contractor will be required to incorporate all permanent erosion control features into the project at the earliest practicable time as outlined in the plans and approved CSPP. Except where future construction operations will damage slopes, the Contractor shall perform the permanent seeding and mulching and other specified slope protection work in stages, as soon as substantial areas of exposed slopes can be made available. Temporary erosion and pollution control measures will be used to correct conditions that develop during construction that were not foreseen during the design stage; that are needed prior to installation of permanent control features; or that are needed temporarily to control erosion that develops during normal construction practices, but are not associated with permanent control features on the project.

Where erosion may be a problem, schedule and perform clearing and grubbing operations so that grading operations and permanent erosion control features can follow immediately if project conditions permit. Temporary erosion control measures are required if permanent measures cannot immediately follow grading operations. The RPR shall limit the area of clearing and grubbing, excavation, borrow, and embankment operations in progress, commensurate with the Contractor's capability and progress in keeping the finish grading, mulching, seeding, and other such permanent control measures current with the accepted schedule. If seasonal limitations make such coordination unrealistic, temporary erosion control measures shall be taken immediately to the extent feasible and justified as directed by the RPR.

The Contractor shall provide immediate permanent or temporary pollution control measures to minimize contamination of adjacent streams or other watercourses, lakes, ponds, or other areas of water impoundment as directed by the RPR. If temporary erosion and pollution control measures are required due to the Contractor's negligence, carelessness, or failure to install permanent controls as a part of the work as scheduled or directed by the RPR, the work shall be performed by the Contractor and the cost shall be incidental to this item.

The RPR may increase or decrease the area of erodible earth material that can be exposed at any time based on an analysis of project conditions.

The erosion control features installed by the Contractor shall be maintained by the Contractor during the construction period.

Provide temporary structures whenever construction equipment must cross watercourses at frequent intervals. Pollutants such as fuels, lubricants, bitumen, raw sewage, wash water from concrete mixing operations, and other harmful materials shall not be discharged into any waterways, impoundments or into natural or manmade channels.

102-3.4 Installation, maintenance and removal of silt fence. Silt fences shall extend a minimum of 16 inches and a maximum of 34 inches above the ground surface. Posts shall be set no more than 10 feet on center. Filter fabric shall be cut from a continuous roll to the length required minimizing joints where possible. When joints are necessary, the fabric shall be spliced at a support post with a minimum 12-inch overlap and securely sealed. A trench shall be excavated approximately 4 inches deep by 4 inches wide on the upslope side of the silt fence. The trench shall be backfilled and the soil compacted over the silt fence fabric. The Contractor shall remove and dispose of silt that accumulates during construction and prior to establishment of permanent erosion control. The fence shall be maintained in good working condition until permanent erosion control is established. Silt fence shall be removed upon approval of the RPR.

PERMIT REQUIREMENTS

102-4.1 Please note that the terms and conditions of Arizona Pollutant Discharge Elimination System (AZPDES) General Permit No. AZG2020-001 for Storm Water Discharges Associated with Construction Activities (*2020 CGP*), except to the extent that more explicit or more stringent requirements are written directly into the contract documents, have the same force and effect (and are made a part of the contract documents by reference) as if copied directly into the contract documents, or as if published copies are bound herewith.

Both the Airport and the Contractor are designated as operators of the construction site. Both must complete a joint Notice of Intent (NOI) with both the Airport and the Contractor listed on the NOI and the Storm Water Pollution Prevention Plan (SWPPP) to comply with the terms and conditions of the *2020 CGP*.

The NOI's must be signed by the contractor in accordance with the signatory requirements of the *2020 CGP* and must contain all required eligibility certifications. The Project Manager for the Airport will ensure that both the Contractor's and the Airport's completed and signed NOI's are submitted to the ADEQ.

It shall be the responsibility of the Contractor to prepare a joint SWPPP and both the Airport and the Contractor must ensure its compliance with the minimum conditions of the *2020 CGP*, including measures to protect impaired or unique waters, measures to protect threatened and/or endangered species, and measures to protect properties eligible for protection under the National Historic Preservation Act. The SWPPP must reflect the Contractor's entire scope of activities at the job site as anticipated for the duration of the construction activities. The Contractor must indicate in the SWPPP those changes in job site requirements and for the order of work performance that will require modifications to the SWPPP and include those modifications in the SWPPP.

Once completed, it shall be the responsibility of the Airport to review and approve the SWPPP prior to the start of work. The preconstruction conference shall not be held and the Contractor shall not be allowed to start work until the Airport has approved the SWPPP as being adequate and in accordance with the requirements of the *2020 CGP*. The Airport shall approve or not approve the SWPPP within seven (7) calendar days after receipt of the SWPPP from the Contractor for purposes of review. Failure of the Contractor and the Airport to reach agreement on the adequacy of the SWPPP prior to the preconstruction conference will delay the start of work. The Contractor shall not be entitled to additional compensation for costs that result from such delay in the construction start date.

The SWPPP is not to be submitted to the ADEQ unless directed to do so by the Airport or in response to a direct request from the ADEQ Director (or authorized representative). If the SWPPP must be submitted to the ADEQ for review and approval, authorization to discharge under the *2020 CGP* may be withheld by ADEQ for up to thirty-two (32) business days after receipt of the SWPPP.

It shall be the responsibility of the Contractor to implement the SWPPP, and ensure day-to-day compliance with the terms and conditions of the SWPPP and the *2020 CGP* The Contractor shall, with the approval of the Airport Project Coordinator, update and revise the SWPPP as necessary throughout the duration of the project to ensure compliance with the *2020 CGP* requirements.

The Contractor shall retain a copy of the SWPPP and the *2020 CGP* at a central location on the job site for the use of all operators whenever they are on the construction site. A copy of the signed SWPPP must be retained on the construction site or at another location easily accessible during normal working hours.

All subcontractors and construction site operators having control over only a portion of the construction site shall comply with the requirements of the *2020 CGP* and the common SWPPP under the supervision of the Contractor. The Contractor shall ensure that all partial site operators having day-today operational control of activities necessary to ensure compliance with the SWPPP or other permit requirements submit NOIs to ADEQ as required by the *2020 CGP*. Subcontractors and partial site operators shall ensure that their activities do not render any other party's pollution prevention plan measures ineffective.

The Contractor shall obtain and incorporate into the SWPPP copies of all NOIs required by the *2020 CGP*. The Contractor shall ensure that all required documents are complete and accurate, and all required NOIs are received by ADEQ at least two (2) business days before a contractor, subcontractor, or partial site operator is allowed to perform any work at the construction site.

The Contractor shall submit the Contractor's completed and signed NOI form to the ADEQ through the *myDEQ* through the ADEQ website (www.azdeq.gov).

The Contractor shall provide a copy of the Contractor's completed and signed NOI form to the Airport at the preconstruction conference. The Contractor shall ensure that a copy of the Contractor's completed NOI form along with a copy of the Airport's completed NOI form is incorporated into the SWPPP. The Contractor must submit the NOI to the City if so directed by the Airport.

Failure by the Contractor to provide copies of the required completed NOI forms by the time of the preconstruction conference shall cause a delay in the construction start date. The Contractor shall not be entitled to additional compensation for costs that result from such delay in the construction start date.

The Contractor must submit an amended NOI if ADEQ provides notification that the previously submitted NOI is incomplete. The amended NOI must be submitted to the ADEQ, the Airport, and if so directed by the Airport, to the City.

The Contractor may assume coverage under the *2020 CGP* two (2) business days after receipt of the NOI by ADEQ; unless ADEQ provides notification that the NOI needs additional evaluation. Such notification may be made in writing, electronically, by fax, or by phone; and will typically be made within two (2) business days after receipt of the NOI. The Contractor cannot assume coverage under the permit and must delay the start of construction for a period of thirty-two (32) business days after receipt of the NOI by ADEQ, unless additional notice is received from ADEQ during this time period. If there is no additional notice, the Contractor may assume coverage under the *2020 CGP* and initiate construction activities at the end of the 32 business days.

102-4.2 The SWPPP must be prepared prior to submitting the NOI to ADEQ for coverage under the *2020 CGP*, and the Contractor must implement the SWPPP as written from the initial commencement of construction activity until final stabilization is complete. A Draft SWPPP Plan Template is included in the project plans for use by the Contractor in preparing the final SWPPP. The SWPPP must be prepared in accordance with good engineering practice, and must:

a. Identify potential sources of pollution which may reasonably be expected to affect the quality of storm water discharges from the construction site;

b. Identify, describe and ensure implementation of Best Management Practices (BMPs) that will be used to reduce the amount of pollutants in storm water discharges from the construction site;

c. Assure compliance with the terms and conditions of the *2020 CGP*; and

d. Identify the party responsible for on-site implementation of the SWPPP.

Specific requirements for the contents of the SWPPP include identification of all operators of the project site, and the areas over which each operator has control. The SWPPP must also provide a description of the nature of the construction activity that includes:

a. A description of the project and its intended use after the Notice of Termination (NOT) is filed (e.g. a municipal park, a municipal building, high density housing, a city street, a water treatment plant, a municipal airport, etc.);

b. A description of the intended sequence of activities that disturb the soil at the site (e.g. grubbing, excavation, grading, utilities, infrastructure installation, etc.);

c. The total area of the site, and an estimate of the total area of the site expected to be disturbed by excavation, grading, or other activities, including off-site barrow and fill areas;

d. An estimate of the runoff coefficient of the site for both the pre-construction and postconstruction conditions, and data describing the soil and any existent data on the quality of any discharge from the site;

e. A general location map (e.g. USGS quadrangle map, a portion of a city or county map, or other map) with enough detail to identify the location of the construction site and the receiving waters within one mile of the site.

The SWPPP must contain a legible site map completed to scale that shows the entire site, and identifies:

a. The directions of storm water flow (e.g. use arrows to show which way or ways storm water will flow on, through, and off the site), and the approximate slopes anticipated after major grading activities;

b. Areas of soil disturbance and areas of no soil disturbance;

c. Locations of structural and non-structural controls identified in the SWPPP;

d. Locations where stabilization practices are expected to occur;

e. Locations of off-site material, waste, borrow areas, or equipment storage areas;

f. Locations of all surface water bodies (including wetlands);

g. Locations where storm water discharges to surface water (including dry washes) and to the City's storm sewer system;

h. Locations and registration numbers of on-site drywells;

i. Areas where final stabilization has been accomplished and no further construction-phase permit requirements apply.

The SWPPP must identify the nearest receiving water or waters, including ephemeral and intermittent streams, dry sloughs, and arroyos. If applicable, the SWPPP must also identify the area and extent of, and describe any wetlands near the site that could be disturbed or that could potentially receive discharges from the disturbed areas of the project.

The SWPPP must identify the location and describe any storm water or non-storm water discharges at the site associated with activity other than construction and other pollutant sources, such as fueling operations, on-site material storage areas, waste piles, etc. This includes discharges from dedicated asphalt plants and dedicated concrete plants that are covered by the *2020 CGP*.

The SWPPP must identify and address off-site storage areas or borrow areas that are used solely for this construction project.

The SWPPP must describe all pollution control measures that will be implemented as part of the construction project to control pollutants in storm water discharges. For each major activity identified in the project description, the SWPPP must clearly describe appropriate control measures; the general sequence during the construction process when the measures will be implemented; and identify the construction site operator responsible for the implementation of the described control measures.

Off-site material storage areas (including overburden and stockpiles of dirt, borrow areas, etc.) used solely by the Contractor for the permitted construction project are considered a part of the project and must be addressed in the SWPPP.

For purposes of controlling erosion and sediment, the SWPPP must address the following:

a. Erosion and sediment controls must be designed to retain sediment on the construction site to the extent practicable.

b. All control measures must be properly selected, installed, and maintained per the manufacturer's specifications and good engineering practices. If periodic inspections or information is discovered that indicates a control has been used inappropriately, or installed incorrectly, the Contractor must replace or modify the control for site situations as soon as practicable and before the next anticipated storm event.

c. When sediment escapes the construction site, off-site accumulations of sediment must be routinely removed at a frequency sufficient to ensure no adverse effects on water quality.

The SWPPP must describe good housekeeping procedures to prevent litter, construction debris, and construction chemicals exposed to storm water from becoming a pollutant source for storm water discharges.

The SWPPP must include a description of and identify interim and permanent stabilization practices for the construction site, including a schedule of when the practices will be implemented. The SWPPP shall document those areas where existing vegetation will be preserved.

The Contractor must initiate stabilization measures within 14 calendar days in those areas where construction activities have temporarily or permanently ceased, except:

a. Where stabilization by the 14th day is precluded by frozen ground conditions, stabilization measures must be initiated as soon as practicable.

b. Where construction activity on a portion of the site has temporarily ceased, but earth disturbing activities will resume in that area within the 14 days. In this event, temporary stabilization measures do not have to be initiated on that portion of the site.

c. When the site is using vegetative stabilization measures and it is during seasonally arid conditions, vegetative stabilization measures must be initiated as soon as practicable.

The Contractor must maintain the following records as part of the SWPPP:

a. Dates when major grading activities occur;

b. Dates when construction activities temporarily or permanently cease on a portion of the site;

c. Dates when stabilization measures are initiated and completed, and the reasons for any delay.

The SWPPP must describe structural practices to divert flows from exposed soils, store flows or otherwise limit runoff and the discharge of pollutants from exposed areas of the site to the degree attainable. Placement of structural practices in floodplains should be avoided to the degree attainable. A combination of sediment and erosion control measures is required to achieve maximum pollutant removal. Sediment basins and velocity dissipation devices must be utilized and placed in accordance with Part IV.D.5 of the *2020 CGP*.

The SWPPP must include a description of post-construction storm water management measures that will be installed during the construction process to control pollutants in storm water discharges after construction operations have been completed. Structural measures shall be placed on upland soils to the degree attainable and must be designed and installed consistent with applicable Airport or City storm water management requirements.

The SWPPP must identify all allowable sources of non-storm water discharges listed in Part l.C.2 of the *2020 CGP* except for flows from firefighting activities. Non-storm water discharges are to be eliminated or reduced to the extent feasible. The Contractor must implement appropriate BMPs to minimize pollutants in any non-storm water discharges and must describe those BMPs in the SWPPP. Except if used in emergency firefighting, super- chlorinated wastewaters must be held on-site until the chorine dissipates, or otherwise dechlorinated prior to discharge.

The SWPPP must describe:

a. Measures to prevent the discharge of solid materials, including building materials, to waters of the United States, except as authorized by a permit issued under section 404 of the Clean Water Act;

b. Measures to minimize off-site vehicle tracking of sediments, to the extent practicable, and the generation of on-site dust;

c. Construction and waste materials expected to be stored on-site with updates as appropriate. The SWPPP must also include a description of the controls to reduce pollutants from these materials including storage practices to minimize exposure of the materials to storm water, and spill prevention and response practices;

d. Any pollutant sources from areas other than construction (including storm water discharges from dedicated asphalt plants, dedicated concrete plants, and/or any other nonconstruction pollutant sources), with details of controls and measures that will be implemented at those sites to minimize pollutant discharges; and

e. Measures to sufficiently stabilize soil at culvert locations to prevent the formation of rills and gullies during construction.

The SWPPP must include a copy of the *2020 CGP*. Copies of the NOIs submitted to ADEQ and/or copies of the certificates received from ADEQ specifying the authorization numbers must also be incorporated into the SWPPP as they become available. If any other agreements with state, federal, or local officials exist that would affect the provisions or implementation of the SWPPP, copies of these agreements must also be included in the SWPPP. (Please note: these types of agreements would include grading and drainage approvals and/or permits, and storm water management approvals and/or permits issued by the City.)

The SWPPP must be consistent with applicable federal, state, and local requirements for soil and erosion control or storm water management. The SWPPP may incorporate by reference the appropriate elements of soil and erosion or storm water management plans required by other agencies. A copy of these requirements incorporated by reference must be provided as an attachment to the SWPPP and must be updated as necessary to remain consistent with any revisions made to the requirements by the responsible agency or agencies.

A schedule for routine inspections of the construction site must be included in the SWPPP. This schedule must comply with Part IV.H.1 and Part IV.H.2 of the *2020 CGP*.

The Contractor must sign the SWPPP in accordance with Part VII.K of the *2020 CGP*. A copy of the signed SWPPP must be retained on the construction site or at another location easily accessible during normal working hours.

102-4.3 The Contractor shall not begin any construction activity until all applicable SWPPP controls, devices, and practices have been put into place.

In accordance with the terms and conditions of the *2020 CGP*, the Contractor shall post the following documents at the construction site near the main entrance:

a. The AZPDES authorization number for the project or a copy of the NOI if an authorization number has not yet been assigned,

b. The name and telephone number of a local office or site contact person,

c. A brief description of the construction project, and

d. The location of the SWPPP if the site is inactive or does not have an on-site location to store the plan, and the name of the contact person for accessing the SWPPP.

The Contractor shall provide adequate and timely maintenance of vegetation, erosion and sediment control measures, and other protective measures and/or BMPs identified in the site plan or SWPPP to ensure that they remain in effective operating condition. Maintenance needs identified through inspections or other means shall be accomplished as soon as practicable and before the next anticipated storm event. If existing protective measures need to be modified or additional measures added, implementation of these changes must be completed before the next anticipated storm event, if practicable. If not practicable, implementation must be completed as soon as it is practicable. Sediment and debris must be removed from sediment traps, sediment ponds, trash racks, and similar structures when the design capacity of the structure has been reduced by fifty (50) percent.

The Contractor shall employ qualified personnel as defined by Part IV.H.3 of the *2020 CGP* to inspect construction site areas in accordance with the requirements of Part IV.H.4 of the *2020 CGP*. All inspection results shall be documented in reports that, at a minimum, include:

a. The inspection date;

b. The name, title, and qualifications of the person or persons performing the inspection. The qualifications must be either on or attached to the report. Alternatively, if the SWPPP documents the qualifications of the person or persons performing the inspection, then that portion of the SWPPP may be referenced;

c. The weather information for the period since the last inspection (or since the start of construction if this is the first inspection), including the best estimate of the beginning of each storm event, the duration of each event, the time that has elapsed since the last storm event, and the approximate amount of rainfall for each event in inches;

d. The location or locations of discharges of sediment or other pollutants from the site; Airport;

e. The location or locations and identification of BMP's that need to be maintained, failed to operate as designed, or proved inadequate;

f. The location or locations where additional BMP's that do not exist at the time of the inspection need to be implemented;

g. Any corrective actions required, including any changes to the SWPPP that are needed, and the dates for implementation;

h. Identification of all sources of non-storm water and their associated pollution prevention control measures; and

i. Identification of material storage areas, and any evidence of or potential for pollutant discharge from such areas.

The Contractor must retain the inspection reports and any records of follow-up actions taken for a period of at least three (3) years from the date permit coverage expires or is terminated. Inspection reports must identify any instance of non-compliance with the terms and conditions of the *2020 CGP*. Where no instance of non-compliance is identified, the report must contain a certification that the construction project or site is being operated in compliance with the SWPPP and the *2020 CGP*. The report shall be signed in accordance with Part VII.K of the permit. Copies of all inspection reports shall be provided to the Airport at least once each month throughout the duration of the project.

Based on the results of the inspection, the Contractor must modify the SWPPP to include additional or modified BMPs designed to correct problems identified. These revisions must be completed within seven (7) calendar days following the inspection. If existing BMPs need to be modified, or if additional BMPs are needed, implementation must be completed before the next anticipated storm event. If implementation before the next anticipated storm event is not practicable, implementation must occur as soon as it is practicable.

The Contractor, with the approval of the Airport, must amend the SWPPP within fifteen (15) business days whenever:

1. There is a change in design, construction, operation, or maintenance at the construction site that has a significant effect on the discharge of pollutants to the waters of the United States, and such effect has not been previously addressed in the SWPPP; or

2. Inspections, monitoring (if required), or investigations by the Contractor, the City, state officials, or federal officials determine the discharges are causing or contributing to water quality exceedances, or the SWPPP is ineffective in eliminating or significantly minimizing pollutants in storm water discharges from the construction site.

The SWPPP and all reports required under this contract shall be available to the public in accordance with the requirements of section 308b. of the Clean Water Act. The Contractor shall make plans and reports available upon request to the ADEQ Director (or authorized representative); State, Tribal, or local agency with approval authority for sediment and erosion control plans, grading plans, or storm water management plans; local government officials; or to the operator of a municipal separate storm sewer receiving discharges from the site in accordance with the terms and conditions of the *2020 CGP*.

The ADEQ Director (or authorized representative) may notify the Contractor and/or the Airport at any time that the SWPPP is inadequate or does not meet one or more of the requirements of Part IV of the *2020 CGP*. Within fifteen (15) business days of receipt of such notification from ADEQ (or as otherwise provided by ADEQ), the Contractor must make the required changes to the SWPPP and submit to the ADEQ a written certification that the requested changes were made and implemented. The ADEQ may request submittal or re-submittal of the SWPPP to verify that all deficiencies have been adequately addressed.

No condition of the *2020 CGP* or the SWPPP shall release the Contractor from any responsibilities or requirements under any other environmental statutes or regulations, including requirements for the prevention or minimization of the discharge of hazardous substances or oil. If there is a release containing a hazardous substance or oil in an amount equal to or greater than the reportable quantities established under federal regulations that has the potential to impact storm water discharges from this site, the Contractor must report the release to the regulatory agencies in accordance with regulatory requirements. In addition, the Contractor must modify the SWPPP within fourteen (14) calendar days after gaining knowledge of the release to provide a description of the release, the circumstances leading to the release, and the date of the release. The SWPPP must identify measures to minimize and/or prevent the occurrence of such releases, and appropriate measures for responding to such releases. The *2020 CGP* does not authorize the discharge of any substance resulting from on-site spills, or the discharge of oil or chemicals.

The SWPPP (including a copy of the *2020 CGP*) shall be kept on the project site from the date of commencement of construction activities to the date of submittal of the Notice of Termination (NOT). A copy of the SWPPP and the permit shall be retained by the Contractor for a period of at least three (3) years following the date of final stabilization of the construction site. The Contractor shall also retain for the same three-year period all reports required by the *2020 CGP* and all records of data used to complete the NOI.

It shall be the responsibility of the Contractor to ensure that copies of all documents and records retained by the Contractor in accordance with requirements of the AZPDES permit are also provided to the Airport.

Within thirty (30) days of the date of final stabilization of the construction site, the Contractor shall submit a completed and properly signed Notice of Termination (NOT) form to the Airport. The Airport will also complete a NOT form, and will submit both the Contractor's and the Airport's NOT to the ADEQ at the address specified on the NOT form; thereby terminating the Contractor's and the Airport's *2020 CGP* coverage for the project.

METHOD OF MEASUREMENT

102-5.1 Storm Water Pollution Prevention Plan (SWPPP) is for the Contractor's participation in the preparation of the SWPPP, the implementation of the SWPPP, and the modification of the SWPPP as necessary for compliance with the *2020 CGP*.

The SWPP will be paid as a lump sum on a monthly schedule of equal payments throughout the entire construction period including any retention required by the terms and conditions of the construction contract to be paid after filing of the Notice of Termination (NOT).

No separate measurement or direct payment will be made for preparing the Notice of Intent (NOI), the Notice of Termination (NOT), Inspection and Maintenance Reports, or other documentation required to perform the work, the cost being considered as included in the allowance.

102-5.2 Temporary erosion and pollution control work required will be performed as scheduled or directed by the RPR. Completed and accepted work will not be measured and paid for directly but shall be considered as incidental to the implementation of the SWPPP.

- **a.** Temporary seeding and mulching.
- **b.** Temporary slope drains.
- **c.** Temporary benches, dikes, dams, and sediment basins, including necessary cleaning of sediment basins, and embankment placed as directed by the RPR.
- **d.** Fertilizing.
- **e.** Installation and removal of silt fence.

102-5.3 Control work performed for protection of construction areas outside the construction limits, such as borrow and waste areas, haul roads, equipment and material storage sites, and temporary plant sites, will not be measured and paid for directly but shall be considered as a subsidiary obligation of the Contractor.

BASIS OF PAYMENT

102-6.1 Payment will be made under:

No. 2, Spec No. C-102-6.1 Storm Water Pollution Prevention Plan (SWPPP) – per Lump Sum

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

Advisory Circulars (AC)

AC 150/5200-33	Hazardous Wildlife Attractants on or Near Airports
AC 150/5370-2	Operational Safety on Airports During Construction

ASTM International (ASTM)

ASTM D6461	Standard Specification for Silt Fence Materials

United States Department of Agriculture (USDA)

FAA/USDA Wildlife Hazard Management at Airports, A Manual for Airport Personnel

END OF ITEM C-102

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Item C-105 Mobilization

105-1 Description. This item of work shall consist of, but is not limited to, work and operations necessary for the movement of personnel, equipment, material and supplies to and from the project site for work on the project except as provided in the contract as separate pay items.

105-2 Mobilization limit. Mobilization shall be limited to 8 percent of the total project cost. Any amount bid over 8 percent will be paid after Final Completion of the project.

105-3 Posted notices. Prior to commencement of construction activities, the Contractor must post the following document in a prominent and accessible place where it may be easily viewed by all employees of the prime Contractor and by all employees of subcontractors engaged by the prime Contractor: Equal Employment Opportunity (EEO) Poster "Equal Employment Opportunity is the Law" in accordance with the Office of Federal Contract Compliance Programs Executive Order 11246. This notice must remain posted until final acceptance of the work by the Owner.

105-4 Engineer/RPR field office. An Engineer/RPR field office is not required.

METHOD OF MEASUREMENT

105-5 Basis of measurement and payment. Based upon the contract lump sum price for "Mobilization" partial payments will be allowed as follows:

- **a.** With first pay request, 25%.
- **b.** When 25% or more of the original contract is earned, an additional 25%.
- **c.** When 50% or more of the original contract is earned, an additional 40%.
- **d.** After Final Inspection, Staging area clean-up and delivery of all Project Closeout materials as required by Section 90, paragraph 90-11, *Contractor Final Project Documentation*, the final 10%.

BASIS OF PAYMENT

105-6 Payment will be made under:

No. 3, Spec No. C-105-6.1 Mobilization – per Lump Sum

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

Office of Federal Contract Compliance Programs (OFCCP)

Executive Order 11246, as amended

EEOC-P/E-1 Equal Employment Opportunity is the Law Poster

United States Department of Labor, Wage and Hour Division (WHD)

WH 1321 Employee Rights under the Davis-Bacon Act Poster

END OF ITEM C-105

Item P-101 Preparation/Removal of Existing Pavements

DESCRIPTION

101-1 This item shall consist of preparation of existing pavement surfaces for overlay, surface treatments, removal of existing pavement, and other miscellaneous items. The work shall be accomplished in accordance with these specifications and the applicable plans.

EQUIPMENT AND MATERIALS

101-2 All equipment and materials shall be specified here and in the following paragraphs or approved by the Resident Project Representative (RPR). The equipment shall not cause damage to the pavement to remain in place.

CONSTRUCTION

101-3.1 Removal of existing pavement.

The Contractor's removal operation shall be controlled to not damage adjacent pavement structure, and base material, cables, utility ducts, pipelines, or drainage structures which are to remain under the pavement.

a. Concrete pavement removal. Full depth saw cuts shall be made perpendicular to the slab surface. The Contractor shall saw through the full depth of the slab including any dowels at the joint, removing the pavement and installing new dowels as shown on the plans and per the specifications. Where the perimeter of the removal limits is not located on the joint and there are no dowels present, the perimeter shall be saw cut the full depth of the pavement. The pavement inside the saw cut shall be removed by methods which will not cause distress in the pavement which is to remain in place. If the material is to be wasted on the airport site, it shall be reduced to a maximum size of 2 inches. Concrete slabs that are damaged by under breaking shall be repaired or removed and replaced as directed by the RPR.

The edge of existing concrete pavement against which new pavement abuts shall be protected from damage at all times. Spall and underbreak repair shall be in accordance with the plans. Any underlaying material that is to remain in place, shall be recompacted and/or replaced as shown on the plans. Adjacent areas damaged during repair shall be repaired or replaced at the Contractor's expense.

b. Asphalt pavement removal. Asphalt pavement to be removed shall be cut to the full depth of the asphalt pavement around the perimeter of the area to be removed. If the material is to be incorporated into embankment, it shall be broken to a maximum size of 2 inches.

c. Repair or removal of Base, Subbase, and/or Subgrade. All failed material including surface, base course, subbase course, and subgrade shall be removed and repaired as shown on the plans or as directed by the RPR. Materials and methods of construction shall comply with the applicable sections of these specifications. Any damage caused by Contractor's removal process shall be repaired at the Contractor's expense.

101-3.2 Preparation of joints and cracks prior to overlay/surface treatment. Remove all vegetation and debris from cracks to a minimum depth of 1 inch. If extensive vegetation exists, treat the specific area with a concentrated solution of a water-based herbicide approved by the RPR. Fill all cracks greater than 1/4 inch wide with a crack sealant per ASTM D6690. The crack sealant, preparation, and application shall be compatible with the surface treatment/overlay to be used. To minimize contamination of the asphalt with the crack sealant, underfill the crack sealant a minimum of 1/8 inch, not to exceed 1/4 inch. Any excess joint or crack sealer shall be removed from the pavement surface.

101-3.3 Removal of Foreign Substances/contaminates prior to remarking. Removal of foreign substances/contaminates from existing pavement that will affect the bond of the new treatment shall consist of removal of rubber, fuel spills, oil, crack sealer, at least 90% of paint, and other foreign substances from the surface of the pavement. Areas that require removal are designated on the plans and as directed by the RPR in the field during construction.

Chemicals, high-pressure water, heater scarifier (asphaltic concrete only), cold milling or sandblasting may be used. If chemicals are used, they shall comply with the state's environmental protection regulations. Removal methods used shall not cause major damage to the pavement, or to any structure or utility within or adjacent to the work area. Major damage is defined as changing the properties of the pavement, removal of asphalt causing the aggregate to ravel, or removing pavement over 1/8 inch deep. If it is deemed by the RPR that damage to the existing pavement is caused by operational error, such as permitting the application method to dwell in one location for too long, the Contractor shall repair the damaged area without compensation and as directed by the RPR.

Removal of foreign substances shall not proceed until approved by the RPR. Water used for high-pressure water equipment shall be provided by the Contractor at the Contractor's expense. No material shall be deposited on the pavement shoulders. All wastes shall be disposed of in areas indicated in this specification or shown on the plans.

101-3.4 Concrete spall or failed asphaltic concrete pavement repair.

a. Repair of concrete spalls in areas to be overlaid with asphalt. The Contractor shall repair all spalled concrete as shown on the plans or as directed by the RPR. The perimeter of the repair shall be saw cut a minimum of 2 inches outside the affected area and 2 inches deep. The deteriorated material shall be removed to a depth where the existing material is firm or cannot be easily removed with a geologist pick. The removed area shall be filled with asphalt mixture with aggregate sized appropriately for the depth of the patch. The material shall be compacted with equipment approved by the RPR until the material is dense and no movement or marks are visible. The material shall not be placed in lifts over 4 inches in depth. This method of repair applies only to pavement to be overlaid.

b. Asphalt pavement repair. The Contractor shall repair all spalled concrete as shown on the plans or as directed by the RPR. The failed areas shall be removed as specified in paragraph 101-3.1b. All failed material including surface, base course, subbase course, and subgrade shall be removed. Materials and methods of construction shall comply with the applicable sections of these specifications.

101-3.5 Cold milling. Milling shall be performed with a power-operated milling machine or grinder, capable of producing a uniform finished surface. The milling machine or grinder shall operate without tearing or gouging the underlaying surface. The milling machine or grinder shall be equipped with grade and slope controls, and a positive means of dust control. All millings shall be removed and disposed in areas designated on the plans. If the Contractor mills or grinds deeper or wider than the plans specify, the Contractor shall replace the material removed with new material at the Contractor's Expense.

a. Patching. The milling machine shall be capable of cutting a vertical edge without chipping or spalling the edges of the remaining pavement and it shall have a positive method of controlling the depth of cut. The RPR shall layout the area to be milled with a straightedge in increments of 1-foot widths. The area to be milled shall cover only the failed area. Any excessive area that is milled because the Contractor doesn't have the appropriate milling machine, or areas that are damaged because of his negligence, shall be repaired by the Contractor at the Contractor's Expense.

b. Profiling, grade correction, or surface correction. The milling machine shall have a minimum width of 7 feet and it shall be equipped with electronic grade control devices that will cut the surface to the grade specified. The tolerances shall be maintained within +0 inch and -1/4 inch the specified grade. The machine must cut vertical edges and have a positive method of dust control. The machine must have the ability to remove the millings or cuttings from the pavement and load them into a truck. All millings shall be removed and disposed of in areas designated on the plans.

c. Clean-up. The Contractor shall sweep the milled surface daily and immediately after the milling until all residual materials are removed from the pavement surface. Prior to paving, the Contractor shall wet down the milled pavement and thoroughly sweep and/or blow the surface to remove loose residual material. Waste materials shall be collected and removed from the pavement surface and adjacent areas by sweeping or vacuuming. Waste materials shall be removed and disposed in areas designated on the plans.

101-3.6. Preparation of asphalt pavement surfaces prior to surface treatment. Existing asphalt pavements to be treated with a surface treatment shall be prepared as follows:

a. Patch asphalt pavement surfaces that have been softened by petroleum derivatives or have failed due to any other cause. Remove damaged pavement to the full depth of the damage and replace with new asphalt pavement similar to that of the existing pavement in accordance with paragraph 101-3.4b.

b. Repair joints and cracks in accordance with paragraph 101-3.2.

c. Remove oil or grease that has not penetrated the asphalt pavement by scrubbing with a detergent and washing thoroughly with clean water. After cleaning, treat these areas with an oil spot primer.

d. Clean pavement surface immediately prior to placing the surface treatment so that it is free of dust, dirt, grease, vegetation, oil or any type of objectionable surface film.

101-3.7 Maintenance. The Contractor shall perform all maintenance work necessary to keep the pavement in a satisfactory condition until the full section is complete and accepted by the RPR. The surface shall be kept clean and free from foreign material. The pavement shall be properly drained at all times. If cleaning is necessary or if the pavement becomes disturbed, any work repairs necessary shall be performed at the Contractor's expense.

101-3.8 Preparation of Joints in Rigid Pavement prior to resealing. Prior to application of sealant material, clean and dry the joints of all scale, dirt, dust, old sealant, curing compound, moisture and other foreign matter. The Contractor shall demonstrate, in the presence of the RPR, that the method used cleans the joint and does not damage the joint.

101-3.8.1 Removal of Existing Joint Sealant. All existing joint sealants will be removed by plowing or use of hand tools. Any remaining sealant and or debris will be removed by use of wire brushes or other tools as necessary. Resaw joints removing no more than 1/16 inch from each joint face. Immediately after sawing, flush out joint with water and other tools as necessary to completely remove the slurry.

101-3.8.2 Cleaning prior to sealing. Immediately before sealing, joints shall be cleaned by removing any remaining laitance and other foreign material. Allow sufficient time to dry out joints prior to sealing. Joint surfaces will be surface-dry prior to installation of sealant.

101-3.8.3 Joint sealant. Joint material and installation will be in accordance with Item P-605.

101-3.9 Preparation of Cracks in Flexible Pavement prior to sealing. Prior to application of sealant material, clean and dry the joints of all scale, dirt, dust, old sealant, curing compound, moisture and other foreign matter. The Contractor shall demonstrate, in the presence of the RPR, that the method used cleans the cracks and does not damage the pavement.

101-3.9.1 Preparation of Crack. Widen crack with router by removing a minimum of 1/16 inch from each side of crack. Immediately before sealing, cracks will be blown out with a hot air lance combined with oil and water-free compressed air.

101-3.9.2 Removal of Existing Crack Sealant. Existing sealants will be removed by routing. Following routing any remaining debris will be removed by use of a hot lance combined with oil and water-free compressed air.

101-3.9.3 Crack Sealant. Crack sealant material and installation will be in accordance with Item P-605.

101-3.9.4 Removal of Pipe and other Buried Structures.

a. **Removal of Existing Pipe Material.** Not used.

b. **Removal of Inlets/Manholes.** Not used.

METHOD OF MEASUREMENT

101-4.1 Sawcut Pavement. The unit of measurement for sawcutting pavement shall be the number of linear feet regardless of thickness.

101-4.2 Pavement Removal. The unit of measurement for removal of pavement shall be the number of square yards removed by the Contractor regardless of thickness. Any pavement removed outside the limits of removal because the pavement was damaged by negligence on the part of the Contractor shall not be included in the measurement for payment.

BASIS OF PAYMENT

101-5.1 Payment. Payment shall be made at contract unit price for the unit of measurement as specified above. This price shall be full compensation for furnishing all materials and for all preparation, hauling, and placing of the material and for all labor, equipment, tools, and incidentals necessary to complete this item.

No. 7, Spec No. P-101-5.1	Sawcut AC Pavement (Full Depth ±4-Inch) – Per Linear Foot
No. 8, Spec No. P-101-5.2	Remove AC Pavement (Full Depth ±4-Inch) – Per Square Yard

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

Advisory Circulars (AC)

AC 150/5380-6	*Guidelines and Procedures for Maintenance of Airport Pavements*

ASTM International (ASTM)

ASTM D6690	*Standard Specification for Joint and Crack Sealants, Hot Applied, for Concrete and Asphalt Pavements*

END OF ITEM P-101

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Item P-151 Clearing and Grubbing

DESCRIPTION

151-1.1 This item shall consist of clearing or clearing and grubbing, including the disposal of materials, for all areas within the limits designated on the plans or as required by the Resident Project Representative (RPR).

a. Clearing shall consist of the cutting and removal of all trees, stumps, brush, logs, hedges, the removal of fences and other loose or projecting material from the designated areas. The grubbing of stumps and roots will not be required.

b. Clearing and grubbing shall consist of clearing the surface of the ground of the designated areas of all trees, stumps, down timber, logs, snags, brush, undergrowth, hedges, heavy growth of grass or weeds, fences, structures, debris, and rubbish of any nature, natural obstructions or such material which in the opinion of the RPR is unsuitable for the foundation of strips, pavements, or other required structures, including the grubbing of stumps, roots, matted roots, foundations, and the disposal from the project of all spoil materials resulting from clearing and grubbing.

c. Tree Removal. Tree Removal shall consist of the cutting and removal of isolated single trees or isolated groups of trees, and the grubbing of stumps and roots. The removal of all the trees of this classification shall be in accordance with the requirements for the particular area being cleared.

CONSTRUCTION METHODS

151-2.1 General. The areas denoted on the plans to be cleared shall be staked on the ground by the Contractor as indicated on the plans.

The removal of existing structures and utilities required to permit orderly progress of work shall be accomplished by local agencies, unless otherwise shown on the plans. Whenever a telephone pole, pipeline, conduit, sewer, roadway, or other utility is encountered and must be removed or relocated, the Contractor shall advise the RPR who will notify the proper local authority or owner to secure prompt action.

151-2.1.1 Disposal. All materials removed by clearing or by clearing and grubbing shall be disposed of in the designated waste disposal area, except when otherwise directed by the RPR. As far as practicable, waste concrete and masonry shall be placed on slopes of embankments or channels. When embankments are constructed of such material, this material shall be placed in accordance with requirements for formation of embankments. Any broken concrete or masonry that cannot be used in construction and all other materials not considered suitable for use elsewhere, shall be disposed of by the Contractor. In no case, shall any discarded materials be left in windrows or piles adjacent to or within the airport limits. The manner and location of disposal of materials shall be subject to the approval of the RPR and shall not create an unsightly or objectionable view. When the Contractor is required to locate a disposal area outside the airport property limits, the Contractor shall obtain and file with the RPR permission in writing from the property owner for the use of private property for this purpose.

151-2.1.2 Blasting. Blasting shall not be allowed.

151-2.2 Clearing. The Contractor shall clear the staked or indicated area of all materials as indicated on the plans. Trees unavoidably falling outside the specified clearing limits must be cut up, removed, and disposed of in a satisfactory manner. To minimize damage to trees that are to be left standing, trees shall be felled toward the center of the area being cleared. The Contractor shall preserve and protect from injury all trees not to be removed. The trees, stumps, and brush shall be cut flush with the original ground surface. The grubbing of stumps and roots will not be required.

Fences shall be removed and disposed of as directed by the RPR. Fence wire shall be neatly rolled and the wire and posts stored on the airport if they are to be used again, or stored at a location designated by the RPR if the fence is to remain the property of a local owner or authority.

151-2.3 Clearing and grubbing. In areas designated to be cleared and grubbed, all stumps, roots, buried logs, brush, grass, and other unsatisfactory materials as indicated on the plans, shall be removed, except where embankments exceeding 3-1/2 feet in depth will be constructed outside of paved areas. For embankments constructed outside of paved areas, all unsatisfactory materials shall be removed, but sound trees, stumps, and brush can be cut off flush with the original ground and allowed to remain. Tap roots and other projections over 1-1/2 inches in diameter shall be grubbed out to a depth of at least 18 inches below the finished subgrade or slope elevation.

Any buildings and miscellaneous structures that are shown on the plans to be removed shall be demolished or removed, and all materials shall be disposed of by removal from the site. The cost of removal is incidental to this item. The remaining or existing foundations, wells, cesspools, and like structures shall be destroyed by breaking down the materials of which the foundations, wells, cesspools, etc., are built to a depth at least 2 feet below the existing surrounding ground. Any broken concrete, blocks, or other objectionable material that cannot be used in backfill shall be removed and disposed of at the Contractor's expense. The holes or openings shall be backfilled with acceptable material and properly compacted.

All holes in embankment areas remaining after the grubbing operation shall have the sides of the holes flattened to facilitate filling with acceptable material and compacting as required in Item P-152. The same procedure shall be applied to all holes remaining after grubbing in areas where the depth of holes exceeds the depth of the proposed excavation.

METHOD OF MEASUREMENT

151-3.1 Clearing and grubbing shall be considered incidental to Item P-152 and no separate measurement shall be made.

BASIS OF PAYMENT

151-4.1 Payment for clearing and grubbing shall be incidental to Item P-152. There will be no separate payment for clearing and grubbing.

END OF ITEM P-151

Item P-152 Excavation, Subgrade, and Embankment

DESCRIPTION

152-1.1 This item covers excavation, disposal, placement, and compaction of all materials within the limits of the work required to construct safety areas, runways, taxiways, aprons, and intermediate areas as well as other areas for drainage, building construction, parking, or other purposes in accordance with these specifications and in conformity to the dimensions and typical sections shown on the plans.

152-1.2 Classification. All material excavated shall be classified as defined below:

a. Unclassified excavation. Unclassified excavation shall consist of the excavation and disposal of all material, regardless of its nature.

152-1.3 Unsuitable excavation. Unsuitable material shall be disposed in designated waste areas as shown on the plans. Materials containing vegetable or organic matter, such as muck, peat, organic silt, or sod shall be considered unsuitable for use in embankment construction. Material suitable for topsoil may be used on the embankment slope when approved by the RPR.

CONSTRUCTION METHODS

152-2.1 General. Before beginning excavation, grading, and embankment operations in any area, the area shall be cleared or cleared and grubbed in accordance with Item P-151.

The suitability of material to be placed in embankments shall be subject to approval by the RPR. All unsuitable material shall be disposed of in waste areas as shown on the plans. All waste areas shall be graded to allow positive drainage of the area and adjacent areas. The surface elevation of waste areas shall be specified on the plans or approved by the RPR.

When the Contractor's excavating operations encounter artifacts of historical or archaeological significance, the operations shall be temporarily discontinued and the RPR notified per Section 70, paragraph 70-20. At the direction of the RPR, the Contractor shall excavate the site in such a manner as to preserve the artifacts encountered and allow for their removal. Such excavation will be paid for as extra work.

Areas outside the limits of the pavement areas where the top layer of soil has become compacted by hauling or other Contractor activities shall be scarified and disked to a depth of 4 inches, to loosen and pulverize the soil. Stones or rock fragments larger than 4 inches in their greatest dimension will not be permitted in the top 6 inches of the subgrade.

If it is necessary to interrupt existing surface drainage, sewers or under-drainage, conduits, utilities, or similar underground structures, the Contractor shall be responsible for and shall take all necessary precautions to preserve them or provide temporary services. When such facilities are encountered, the Contractor shall notify the RPR, who shall arrange for their removal if necessary. The Contractor, at their own expense, shall satisfactorily repair or pay the cost of all damage to such facilities or structures that may result from any of the Contractor's operations during the period of the contract.

a. Blasting. Blasting shall not be allowed.

152-2.2 Excavation. No excavation shall be started until the work has been staked out by the Contractor and the RPR has obtained from the Contractor, the survey notes of the elevations and measurements of the ground surface. The Contractor and RPR shall agree that the original ground lines shown on the original topographic mapping are accurate, or agree to any adjustments made to the original ground lines.

Digital terrain model (DTM) files of the existing surfaces, finished surfaces and other various surfaces were used to develop the design plans.

Existing grades on the design cross sections or DTM's, where they do not match the locations of actual spot elevations shown on the topographic map, were developed by computer interpolation from those spot elevations. Prior to disturbing original grade, Contractor shall verify the accuracy of the existing ground surface by verifying spot elevations at the same locations where original field survey data was obtained as indicated on the topographic map. Contractor shall recognize that, due to the interpolation process, the actual ground surface at any particular location may differ somewhat from the interpolated surface shown on the design cross sections or obtained from the DTM's. Contractor's verification of original ground surface, however, shall be limited to verification of spot elevations as indicated herein, and no adjustments will be made to the original ground surface unless the Contractor demonstrates that spot elevations shown are incorrect. For this purpose, spot elevations which are within 0.1 foot of the stated elevations for ground surfaces, or within 0.04 foot for hard surfaces (pavements, buildings, foundations, structures, etc.) shall be considered "no change". Only deviations in excess of these will be considered for adjustment of the original ground surface. If Contractor's verification identifies discrepancies in the topographic map, Contractor shall notify the RPR in writing at least two weeks before disturbance of existing grade to allow sufficient time to verify the submitted information and make adjustments to the design cross sections or DTM's. Disturbance of existing grade in any area shall constitute acceptance by the Contractor of the accuracy of the original elevations shown on the topographic map for that area.

All areas to be excavated shall be stripped of vegetation and topsoil. Topsoil shall be stockpiled for future use in areas designated on the plans or by the RPR. All suitable excavated material shall be used in the formation of embankment, subgrade, or other purposes as shown on the plans. All unsuitable material shall be disposed of as shown on the plans.

The grade shall be maintained so that the surface is well drained at all times.

When the volume of the excavation exceeds that required to construct the embankments to the grades as indicated on the plans, the excess shall be used to grade the areas of ultimate development or disposed as directed by the RPR. When the volume of excavation is not sufficient for constructing the embankments to the grades indicated, the deficiency shall be obtained from borrow areas.

a. Selective grading. When selective grading is indicated on the plans, the more suitable material designated by the RPR shall be used in constructing the embankment or in capping the pavement subgrade. If, at the time of excavation, it is not possible to place this material in its final location, it shall be stockpiled in approved areas until it can be placed. The more suitable material shall then be placed and compacted as specified. Selective grading shall be considered incidental to the work involved. The cost of stockpiling and placing the material shall be included in the various pay items of work involved.

b. Undercutting. Rock, shale, hardpan, loose rock, boulders, or other material unsatisfactory for safety areas, subgrades, roads, shoulders, or any areas intended for turf shall be excavated to a minimum depth of 12 inches below the subgrade or to the depth specified by the RPR. Muck, peat, matted roots, or other yielding material, unsatisfactory for subgrade foundation, shall be removed to the depth specified. Unsuitable materials shall be disposed off the airport. The cost is incidental to this item. This excavated material shall be paid for at the contract unit price per cubic yard for unsuitable excavation. The excavated area shall be backfilled with suitable material obtained from the grading operations or borrow areas and compacted to specified densities. The necessary backfill will constitute a part of the embankment. Where rock cuts are made, backfill with select material. Any pockets created in the rock surface shall be drained in accordance with the details shown on the plans. Undercutting will be paid as unclassified excavation.

c. Over-break. Over-break, including slides, is that portion of any material displaced or loosened beyond the finished work as planned or authorized by the RPR. All over-break shall be graded or removed by the Contractor and disposed of as directed by the RPR. The RPR shall determine if the displacement of such material was unavoidable and their own decision shall be final. Payment will not be made for the removal and disposal of over-break that the RPR determines as avoidable. Unavoidable over-break will be classified as "Unclassified Excavation."

d. Removal of utilities. The removal of existing structures and utilities required to permit the orderly progress of work will be accomplished by the Contractor as indicated on the plans. All existing foundations shall be excavated at least 2 feet below the top of subgrade or as indicated on the plans, and the material disposed of as directed by the RPR. All foundations thus excavated shall be backfilled with suitable material and compacted as specified for embankment or as shown on the plans.

e. Unsuitable Excavation and Replacement, Backfill and Compaction. If zones of unstable or soft subgrade are found during site grading and proof rolling, the Contractor shall remove the unstable soils to a depth of 24-inches below the finished subgrade, then backfill and compact in accordance with 152-2.10. For wet, suitable subgrade, the soils may be set aside to dry and be re-compacted once they have dried sufficiently. For unsuitable subgrade with a CBR less than 5, crushed aggregate base course material meeting the requirements of Technical Specification P-209 or asphalt millings shall be used for backfill. The work shall only be performed with advance approval of the RPR after the RPR concurs with the Contractor's proposed method. All hauling, work, equipment and material required shall be considered incidental to "Unsuitable Excavation and Replacement, Backfill and Compaction".

152-2.3 Borrow excavation. There are no borrow sources within the boundaries of the airport property. The Contractor shall locate and obtain borrow sources, subject to the approval of the RPR. The Contractor shall notify the RPR at least 15 days prior to beginning the excavation so necessary measurements and tests can be made by the RPR. All borrow pits shall be opened to expose the various strata of acceptable material to allow obtaining a uniform product. Borrow areas shall be drained and left in a neat, presentable condition with all slopes dressed uniformly. Borrow areas shall not create a hazardous wildlife attractant.

152-2.4 Drainage excavation. Drainage excavation shall consist of excavating drainage ditches including intercepting, inlet, or outlet ditches; or other types as shown on the plans. The work shall be performed in sequence with the other construction. Ditches shall be constructed prior to starting adjacent excavation operations. All satisfactory material shall be placed in embankment fills; unsuitable material shall be placed in designated waste areas or as directed by the RPR. All necessary work shall be performed true to final line, elevation, and cross-section. The Contractor shall maintain ditches constructed on the

project to the required cross-section and shall keep them free of debris or obstructions until the project is accepted.

152-2.5 Preparation of cut areas or areas where existing pavement has been removed. In those areas on which a subbase or base course is to be placed, the top 12 inches of subgrade shall be compacted to not less than 95% of maximum density for non-cohesive soils, and 95% of maximum density for cohesive soils as determined by ASTM D698. As used in this specification, "non-cohesive" shall mean those soils having a plasticity index (PI) of less than 3 as determined by ASTM D4318.

152-2.6 Preparation of embankment area. All sod and vegetative matter shall be removed from the surface upon which the embankment is to be placed. The cleared surface shall be broken up by plowing or scarifying to a minimum depth of 6 inches and shall then be compacted per paragraph 152-2.10.

Sloped surfaces steeper than one (1) vertical to four (4) horizontal shall be plowed, stepped, benched, or broken up so that the fill material will bond with the existing material. When the subgrade is part fill and part excavation or natural ground, the excavated or natural ground portion shall be scarified to a depth of 12 inches and compacted as specified for the adjacent fill.

No direct payment shall be made for the work performed under this section. The necessary clearing and grubbing and the quantity of excavation removed will be paid for under the respective items of work.

152-2.7 Control Strip. The first half-day of construction of subgrade and/or embankment shall be considered as a control strip for the Contractor to demonstrate, in the presence of the RPR, that the materials, equipment, and construction processes meet the requirements of this specification. The sequence and manner of rolling necessary to obtain specified density requirements shall be determined. The maximum compacted thickness may be increased to a maximum of 12 inches upon the Contractor's demonstration that approved equipment and operations will uniformly compact the lift to the specified density. The RPR must witness this demonstration and approve the lift thickness prior to full production.

Control strips that do not meet specification requirements shall be reworked, re-compacted, or removed and replaced at the Contractor's expense. Full operations shall not begin until the control strip has been accepted by the RPR. The Contractor shall use the same equipment, materials, and construction methods for the remainder of construction, unless adjustments made by the Contractor are approved in advance by the RPR.

152-2.8 Formation of embankments. The material shall be constructed in lifts as established in the control strip, but not less than 6 inches nor more than 12 inches of compacted thickness.

When more than one lift is required to establish the layer thickness shown on the plans, the construction procedure described here shall apply to each lift. No lift shall be covered by subsequent lifts until tests verify that compaction requirements have been met. The Contractor shall rework, re-compact and retest any material placed which does not meet the specifications.

The lifts shall be placed, to produce a soil structure as shown on the typical cross-section or as directed by the RPR. Materials such as brush, hedge, roots, stumps, grass and other organic matter, shall not be incorporated or buried in the embankment.

Earthwork operations shall be suspended at any time when satisfactory results cannot be obtained due to rain, freezing, or other unsatisfactory weather conditions in the field. Frozen material shall not be placed in the embankment nor shall embankment be placed upon frozen material. Material shall not be placed on surfaces that are muddy, frozen, or contain frost. The Contractor shall drag, blade, or slope the embankment to provide surface drainage at all times.

The material in each lift shall be within ±2% of optimum moisture content before rolling to obtain the prescribed compaction. The material shall be moistened or aerated as necessary to achieve a uniform moisture content throughout the lift. Natural drying may be accelerated by blending in dry material or manipulation alone to increase the rate of evaporation.

The Contractor shall make the necessary corrections and adjustments in methods, materials or moisture content to achieve the specified embankment density.

The Contractor's laboratory will take samples of excavated materials which will be used in embankment for testing and develop a Moisture-Density Relations of Soils Report (Proctor) in accordance with ASTM D698. A new Proctor shall be developed for each soil type based on visual classification.

The Contractor's laboratory shall perform all density tests in the presence of the RPR and provide test results upon completion to the Engineer for acceptance. Density tests will be taken for every 3,000 square yards of compacted embankment for each lift which is required to be compacted, or other appropriate frequencies as determined by the RPR.

If the material has greater than 30% retained on the 3/4-inch sieve, follow AASHTO T-180 Annex Correction of maximum dry density and optimum moisture for oversized particles.

Rolling operations shall be continued until the embankment is compacted to not less than 95% of maximum density for non-cohesive soils, and 95% of maximum density for cohesive soils as determined by ASTM D698. Under all areas to be paved, the embankments shall be compacted to a depth of 8 inches and to a density of not less than 95% of the maximum density as determined by ASTM D698. As used in this specification, "non-cohesive" shall mean those soils having a plasticity index (PI) of less than 3 as determined by ASTM D4318.

On all areas outside of the pavement areas, no compaction will be required on the top 4 inches which shall be prepared for a seedbed in accordance with Item T-901.

The in-place field density shall be determined in accordance with ASTM D1556 and ASTM 6938 using Procedure A, the direct transmission method, and ASTM D6938 shall be used to determine the moisture content of the material. The machine shall be calibrated in accordance with ASTM D6938. The Contractor's laboratory shall perform all density tests in the RPR's presence and provide the test results upon completion to the RPR for acceptance. If the specified density is not attained, the area represented by the test or as designated by the RPR shall be reworked and/or re-compacted and additional random tests made. This procedure shall be followed until the specified density is reached.

Compaction areas shall be kept separate, and no lift shall be covered by another lift until the proper density is obtained.

During construction of the embankment, the Contractor shall route all construction equipment evenly over the entire width of the embankment as each lift is placed. Lift placement shall begin in the deepest portion of the embankment fill. As placement progresses, the lifts shall be constructed approximately parallel to the finished pavement grade line.

When rock, concrete pavement, asphalt pavement, and other embankment material are excavated at approximately the same time as the subgrade, the material shall be incorporated into the outer portion of the embankment and the subgrade material shall be incorporated under the future paved areas. Stones, fragmentary rock, and recycled pavement larger than 4 inches in their greatest dimensions will not be allowed in the top 12 inches of the subgrade. Rockfill shall be brought up in lifts as specified or as directed by the RPR and the finer material shall be used to fill the voids forming a dense, compact mass. Rock, cement concrete pavement, asphalt pavement, and other embankment material shall not be disposed of except at places and in the manner designated on the plans or by the RPR.

When the excavated material consists predominantly of rock fragments of such size that the material cannot be placed in lifts of the prescribed thickness without crushing, pulverizing or further breaking down the pieces, such material may be placed in the embankment as directed in lifts not exceeding 2 feet in thickness. Each lift shall be leveled and smoothed with suitable equipment by distribution of spalls and finer fragments of rock. The lift shall not be constructed above an elevation 4 feet below the finished subgrade.

There will be no separate measurement of payment for compacted embankment. All costs incidental to placing in lifts, compacting, discing, watering, mixing, sloping, and other operations necessary for construction of embankments will be included in the contract price for excavation, borrow, or other items.

152-2.9 Proof rolling. The purpose of proof rolling the subgrade is to identify any weak areas in the subgrade and not for compaction of the subgrade. Before start of embankment, and after compaction is completed, the subgrade area shall be proof rolled with a 30-ton Proof Roller with tires spaced not more than 32 inches on-center with tires inflated to 125 psi in the presence of the RPR. Apply a minimum of 3 coverages, or as specified by the RPR under pavement areas. A coverage is defined as the application of one tire print over the designated area. Soft areas of subgrade that deflect more than1 inch or show permanent deformation greater than 1 inch shall be removed and replaced with suitable material or reworked to conform to the moisture content and compaction requirements in accordance with these specifications. Removal and replacement of soft areas is incidental to this item.

152-2.10 Compaction requirements. The subgrade under areas to be paved shall be compacted to a depth of 12 inches and to a density of not less than 95% of the maximum dry density as determined by ASTM D698. On all areas outside the pavement areas, no compaction will be required on the top 4 inches.

The material under areas to be compacted shall be within -3% and +1% of optimum moisture content before being rolled to obtain the prescribed compaction (except for expansive soils). The material under areas outside the pavement areas to be compacted shall be within -3% and +1% of optimum moisture content before being rolled to obtain the prescribed compaction (except for expansive soils). When the material has greater than 30 percent retained on the ¾ inch sieve, follow the methods in ASTM D698. Tests for moisture content and compaction will be taken at a minimum of 3,000 square yards of subgrade. All quality assurance testing shall be done by the Contractor's laboratory in the presence of the RPR, and density test results shall be furnished upon completion to the RPR for acceptance determination.

The in-place field density shall be determined in accordance with ASTM D1556 and ASTM D6938 using Procedure A, the direct transmission method, and ASTM D6938 shall be used to determine the moisture content of the material. The machine shall be calibrated in accordance with ASTM D6938 within 12 months prior to its use on this contract. The gage shall be field standardized daily.

Maximum density refers to maximum dry density at optimum moisture content unless otherwise specified.

If the specified density is not attained, the entire lot shall be reworked and/or re-compacted and additional random tests made. This procedure shall be followed until the specified density is reached.

All cut-and-fill slopes shall be uniformly dressed to the slope, cross-section, and alignment shown on the plans or as directed by the RPR and the finished subgrade shall be maintained.

152-2.11 Finishing and protection of subgrade. Finishing and protection of the subgrade is incidental to this item. Grading and compacting of the subgrade shall be performed so that it will drain readily. All low areas, holes or depressions in the subgrade shall be brought to grade. Scarifying, blading, rolling and other methods shall be performed to provide a thoroughly compacted subgrade shaped to the lines and grades shown on the plans. All ruts or rough places that develop in the completed subgrade shall be graded, re-compacted, and retested. The Contractor shall protect the subgrade from damage and limit hauling over the finished subgrade to only traffic essential for construction purposes.

The Contractor shall maintain the completed course in satisfactory condition throughout placement of subsequent layers. No subbase, base, or surface course shall be placed on the subgrade until the subgrade has been accepted by the RPR.

152-2.12 Haul. All hauling will be considered a necessary and incidental part of the work. The Contractor shall include the cost in the contract unit price for the pay of items of work involved. No payment will be made separately or directly for hauling on any part of the work.

The Contractor's equipment shall not cause damage to any excavated surface, compacted lift or to the subgrade as a result of hauling operations. Any damage caused as a result of the Contractor's hauling operations shall be repaired at the Contractor's expense.

The Contractor shall be responsible for providing, maintaining and removing any haul roads or routes within or outside of the work area, and shall return the affected areas to their former condition, unless otherwise authorized in writing by the Owner. No separate payment will be made for any work or materials associated with providing, maintaining and removing haul roads or routes.

152-2.13 Surface Tolerances. In those areas on which a subbase or base course is to be placed, the surface shall be tested for smoothness and accuracy of grade and crown. Any portion lacking the required smoothness or failing in accuracy of grade or crown shall be scarified to a depth of at least 3 inches, reshaped and re-compacted to grade until the required smoothness and accuracy are obtained and approved by the RPR. The Contractor shall perform all final smoothness and grade checks in the presence of the RPR. Any deviation in surface tolerances shall be corrected by the Contractor at the Contractor's expense.

a. Smoothness. The finished surface shall not vary more than +/- ½ inch when tested with a 12-foot straightedge applied parallel with and at right angles to the centerline. The straightedge shall be moved continuously forward at half the length of the 12-foot straightedge for the full length of each line on a 50-foot grid.

b. Grade. The grade and crown shall be measured on a 50-foot grid and shall be within +/-0.05 feet of the specified grade.

On safety areas, turfed areas and other designated areas within the grading limits where no subbase or base is to placed, grade shall not vary more than 0.10 feet from specified grade. Any deviation in excess of this amount shall be corrected by loosening, adding or removing materials, and reshaping.

152-2.14 Topsoil. When topsoil is specified or required as shown on the plans, it shall be salvaged from stripping or other grading operations. If, at the time of excavation or stripping, the topsoil cannot be placed in its final section of finished construction, the material shall be stockpiled at approved locations. Stockpiles shall be located as shown on the plans and the approved CSPP, and shall not be placed on areas that subsequently will require any excavation or embankment fill. If, in the judgment of the RPR, it is practical to place the salvaged topsoil at the time of excavation or stripping, the material shall be placed in its final position without stockpiling or further re-handling.

Upon completion of grading operations, stockpiled topsoil shall be handled and placed as shown on the plans. No direct payment will be made for topsoil under Item P-152.

METHOD OF MEASUREMENT

152-3.1 Measurement for payment specified by the cubic yard shall be computed by the comparison of digital terrain model (DTM) surfaces. The end area is that bound by the original ground line established by field cross-sections and the final theoretical pay line established by cross-sections shown on the plans, subject to verification by the RPR.

152-3.2 The quantity of unclassified excavation to be paid for shall be the number of cubic yards measured in its original position. Measurement shall not include the quantity of materials excavated without authorization beyond normal slope lines, or the quantity of material used for purposes other than those directed. Clearing and grubbing per Item P-151 shall be incidental to this item.

152-3.3 The quantity of unsuitable excavation shall be the number of cubic yards measured in its original position. Measurement shall not include the quantity of materials excavated without authorization, or the quantity of replacement materials used for backfill, regardless of its type or origin.

BASIS OF PAYMENT

152-4.1 Unclassified excavation payment shall be made at the contract unit price per cubic yard. This price shall be full compensation for furnishing all materials, labor, equipment, tools, and incidentals necessary to complete the item. Clearing and grubbing per Item P-151 shall be incidental to this item.

152-4.2 For unsuitable excavation, payment shall be made at the contract unit price per cubic yard. This price shall be full compensation for furnishing all materials, labor, equipment, tools, and incidentals necessary to complete the item.

Payment will be made under:

No. 9, Spec No. P-152-4.1	Unclassified Excavation – per Cubic Yard
No. 10, Spec No. P-152-4.2	Unsuitable Excavation and Replacement, Backfill and Compaction – per Cubic Yard
No. 11, Spec No. P-152-4.3	Compacted Subgrade (12-Inch Depth) – per Square Yard

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

American Association of State Highway and Transportation Officials (AASHTO)

AASHTO T-180	Standard Method of Test for Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in.) Drop

ASTM International (ASTM)

ASTM D698	Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft3 (600 kN-m/m3))
ASTM D1556	Standard Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method
ASTM D1557	Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft3 (2700 kN-m/m3))
ASTM D6938	Standard Test Methods for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)

Advisory Circulars (AC)

AC 150/5370-2	Operational Safety on Airports During Construction Software

Software

FAARFIELD – FAA Rigid and Flexible Iterative Elastic Layered Design

U.S. Department of Transportation

FAA RD-76-66	Design and Construction of Airport Pavements on Expansive Soils

END OF ITEM P-152

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Item P-153 Controlled Low-Strength Material (CLSM)

DESCRIPTION

153-1.1 This item shall consist of furnishing, transporting, and placing a controlled low-strength material (CLSM) as flowable backfill in trenches or at other locations shown on the plans or as directed by the Resident Project Representative (RPR).

MATERIALS

153-2.1 Materials.

a. Cement. Cement: ASTM C150 Type II.

b. Fly ash. Fly ash shall conform to ASTM C618, Class C or F.

c. Fine aggregate (sand). Fine aggregate shall conform to the requirements of ASTM C33 except for aggregate gradation. Any aggregate gradation which produces the specified performance characteristics of the CLSM and meets the following requirements, will be accepted.

Sieve Size	Percent Passing by weight
3/4 inch	100
No. 200	0 - 12

d. Water. Water used in mixing or curing shall be from potable water sources. Other sources shall be tested in accordance with ASTM C1602 prior to use.

MIX DESIGN

153-3.1 Proportions. The Contractor shall submit to the RPR a mix design including the proportions and source of aggregate, fly ash, cement, water, and approved admixtures. No CLSM mixture shall be produced for payment until the RPR has given written approval of the proportions. The proportions shall be prepared by a laboratory and shall remain in effect for the duration of the project. The proportions shall establish a single percentage or weight for aggregate, fly ash, cement, water, and any admixtures proposed. Laboratory costs are incidental to this item.

a. Compressive strength. CLSM shall be designed to achieve a 28-day compressive strength of 100 to 200 psi when tested in accordance with ASTM D4832, with no significant strength gain after 28 days.

b. Consistency. Design CLSM to achieve a consistency that will produce an approximate 8-inch diameter circular-type spread without segregation. CLSM consistency shall be determined per ASTM D6103.

CONSTRUCTION METHODS

153-4.1 Placement.

a. Placement. CLSM may be placed by any reasonable means from the mixing unit into the space to be filled. Agitation is required during transportation and waiting time. Placement shall be performed so structures or pipes are not displaced from their final position and intrusion of CLSM into unwanted areas is avoided. The material shall be brought up uniformly to the fill line shown on the plans or as directed by the RPR. Each placement of CLSM shall be as continuous an operation as possible. If CLSM is placed in more than one lift, the base lift shall be free of surface water and loose foreign material prior to placement of the next lift.

b. Contractor Quality Control. The Contractor shall collect all batch tickets to verify the CLSM delivered to the project conforms to the mix design. The Contractor shall verify daily that the CLSM is consistent with 153-3.1a and 153-3.1b. Adjustments shall be made as necessary to the proportions and materials as needed. The Contractor shall provide all batch tickets to the RPR.

c. Limitations of placement. CLSM shall not be placed on frozen ground. Mixing and placing may begin when the air or ground temperature is at least 35°F and rising. Mixing and placement shall stop when the air temperature is 40°F and falling or when the anticipated air or ground temperature will be 35°F or less in the 24-hour period following proposed placement. At the time of placement, CLSM shall have a temperature of at least 40°F.

153-4.2 Curing and protection

a. Curing. The air in contact with the CLSM shall be maintained at temperatures above freezing for a minimum of 72 hours. If the CLSM is subjected to temperatures below 32°F, the material may be rejected by the RPR if damage to the material is observed.

b. Protection. The CLSM shall not be subject to loads and shall remain undisturbed by construction activities for a period of 48 hours or until a compressive strength of 15 psi is obtained. The Contractor shall be responsible for providing evidence to the RPR that the material has reached the desired strength. Acceptable evidence shall be based upon compressive tests made in accordance with paragraph 153-3.1a.

153-4.3 Quality Assurance (QA) Acceptance. CLSM QA acceptance shall be based upon batch tickets provided by the Contractor to the RPR to confirm that the delivered material conforms to the mix design.

METHOD OF MEASUREMENT

153-5.1 Measurement.
No separate measurement for payment shall be made for controlled low strength material (CLSM). CLSM shall be considered necessary and incidental to the work of this Contract.

BASIS OF PAYMENT

153-6.1 Payment.
No payment will be made separately or directly for controlled low strength material (CLSM). CLSM shall be considered necessary and incidental to the work of this Contract.

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM International (ASTM)

ASTM C33	Standard Specification for Concrete Aggregates
ASTM C150	Standard Specification for Portland Cement
ASTM C618	Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete
ASTM C595	Standard Specification for Blended Hydraulic Cements
ASTM C1602	Standard Specification for Mixing Water Used in the Production of Hydraulic Cement Concrete
ASTM D4832	Standard Test Method for Preparation and Testing of Controlled Low-Strength Material (CLSM) Test Cylinders
ASTM D6103	Flow Consistency of Controlled Low Strength Material (CLSM)

END OF ITEM P-153

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Item P-208 Aggregate Base Course

DESCRIPTION

208-1.1 This item shall consist of a base course composed of course aggregate bonded with fine aggregate base. It shall be constructed on a prepared subgrade or subbase course per these specifications and shall conform to the dimensions and typical cross-section shown on the plans.

MATERIALS

208-2.1 Aggregate base. The aggregate base material shall consist of both fine and coarse aggregate. Material shall be clean, sound, durable particles and fragments of stone or gravel, crushed stone, or crushed gravel mixed or blended with sand, screenings, or other materials. Materials shall be handled and stored in accordance with all federal, state, and local requirements. The aggregate shall be free from clay lumps, organic matter, or other deleterious materials or coatings. The method used to produce the crushed gravel shall result in the fractured particles in the finished product as nearly constant and uniform as practicable. The fine aggregate portion, defined as the portion passing the No. 4 sieve produced in crushing operations, shall be incorporated in the base material to the extent permitted by the gradation requirements. Aggregate base material requirements are listed in the following table.

Aggregate Base Material Requirements

Material Test	Requirement	Standard
Coarse Aggregate		
Resistance to Degradation	Loss: 50% maximum	ASTM C131
Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate	Loss after 5 cycles: 12% maximum using Sodium Sulfate - or - 18% maximum using Magnesium Sulfate	ASTM C88
Percentage of Fractured Particles	Minimum 60% by weight of particles with at least two fractured faces and 75% with at least one fractured face[1]	ASTM D5821
Flat Particles, Elongated Particles, or Flat and Elongated Particles	10% maximum, by weight, of flat, elongated, or flat and elongated particles[2]	ASTM D4791
Fine Aggregate		
Liquid limit	Less than or equal to 25	ASTM D4318
Plasticity Index	Not more than five (5)	ASTM D4318

[1] The area of each face shall be equal to at least 75% of the smallest mid-sectional area of the piece. When two fractured faces are contiguous, the angle between the planes of fractures shall be at least 30 degrees to count as two fractured faces.

[2] A flat particle is one having a ratio of width to thickness greater than five (5); an elongated particle is one having a ratio of length to width greater than five (5).

208-2.2 Gradation requirements. The gradation of the aggregate base material shall meet the requirements of the gradation given in the following table when tested per ASTM C117 and ASTM C136. The gradation shall be well graded from coarse to fine and shall not vary from the lower limit on one sieve to the high limit on an adjacent sieve or vice versa.

Gradation of Aggregate Base

Sieve Size	Design Range Percentage by Weight passing	Contractor's Final Gradation	Job Control Grading Band Tolerances for Contractor's Final Gradation[1]
2 inch	--		±0
1-1/2 inch	--		±5
1 inch	100		±8
3/4 inch	70-100		±8
No. 4	35-65		±8
No. 40	10-25		±5
No. 200	5-15		±3

[1] The "Job Control Grading Band Tolerances for Contractor's Final Gradation" in the table shall be applied to "Contractor's Final Gradation" to establish a job control grading band. The full tolerance still applies if application of the tolerances results in a job control grading band outside the design range.

208-2.3 Sampling and testing.

a. Aggregate base materials. The Contractor shall take samples of the aggregate base in accordance with ASTM D75 to verify initial aggregate base requirements and gradation. Material shall meet the requirements in paragraphs 208-2.1 and 208-2.2. This sampling and testing will be the basis for approval of the aggregate base quality requirements.

b. Gradation requirements. The Contractor shall take at least two aggregate base samples per day in the presence of the Resident Project Representative (RPR) to check the final gradation. Sampling shall be per ASTM D75. Material shall meet the requirements in paragraph 208-2.2. The samples shall be taken from the in-place, un-compacted material at sampling points and intervals designated by the RPR.

208-2.4 Separation Geotextile. Not used.

CONSTRUCTION METHODS

208-3.1 Control strip. The first half-day of construction shall be considered the control strip. The Contractor shall demonstrate, in the presence of the RPR, that the materials, equipment, and construction processes meet the requirements of the specification. The sequence and manner of rolling necessary to obtain specified density requirements shall be determined. The maximum compacted thickness may be increased to a maximum of 12 inches upon the Contractor's demonstration that approved equipment and operations will uniformly compact the lift to the specified density. The RPR must witness this demonstration and approve the lift thickness prior to full production.

Control strips that do not meet specification requirements shall be reworked, re-compacted or removed and replaced at the Contractor's expense. Full operations shall not continue until the control strip has been accepted by the RPR. The Contractor shall use the same equipment, materials, and construction methods for the remainder of construction, unless adjustments made by the Contractor are approved by the RPR.

208-3.2 Preparing underlying subgrade and/or subbase. The underlying subgrade and/or subbase shall be checked and accepted by the RPR before base course placing and spreading operations begin. Re-proof rolling of the subgrade or proof rolling of the subbase in accordance with Item P-152, at the Contractor's expense, may be required by the RPR if the Contractor fails to ensure proper drainage or protect the subgrade and/or subbase. Any ruts or soft, yielding areas due to improper drainage conditions, hauling, or any other cause, shall be corrected before the base course is placed. To ensure proper drainage, the spreading of the base shall begin along the centerline of the pavement on a crowned section or on the high side of the pavement with a one-way slope.

208-3.3 Production. The aggregate shall be uniformly blended and, when at a satisfactory moisture content per paragraph 208-3.5, the approved material may be transported directly to the placement.

208-3.4 Placement. The aggregate shall be placed and spread on the prepared underlying layer by spreader boxes or other devices as approved by the RPR, to a uniform thickness and width. The equipment shall have positive thickness controls to minimize the need for additional manipulation of the material. Dumping from vehicles that require re-handling shall not be permitted. Hauling over the uncompacted base course shall not be permitted.

The aggregate shall meet gradation and moisture requirements prior to compaction. The base course layer shall be constructed in lifts as established in the control strip, but not less than 4 inches nor more than 12 inches of compacted thickness.

When more than one lift is required to establish the layer thickness shown on the plans, the construction procedure described here shall apply to each lift. No lift shall be covered by subsequent lifts until tests verify that compaction requirements have been met. The Contractor shall rework, re-compact and retest any material placed which does not meet the specifications at the Contractor's expense.

208-3.5 Compaction. Immediately upon completion of the spreading operations, compact each layer of the base course, as specified, with approved compaction equipment. The number, type, and weight of rollers shall be sufficient to compact the material to the required density within the same day that the aggregate is placed on the subgrade.

The field density of each compacted lift of material shall be at least 100% of the maximum density of laboratory specimens prepared from samples of the base material delivered to the jobsite. The laboratory specimens shall be compacted and tested in accordance with ASTM D698. The moisture content of the material during placing operations shall be within ±2 percentage points of the optimum moisture content as determined by ASTM D D698. Maximum density refers to maximum dry density at optimum moisture content unless otherwise specified.

208-3.6 Weather limitations. Material shall not be placed unless the ambient air temperature is at least 40°F and rising. Work on base course shall not be conducted when the subgrade or subbase is wet or frozen or the base material contains frozen material.

208-3.7 Maintenance. The base course shall be maintained in a condition that will meet all specification requirements. When material has been exposed to excessive rain, snow, or freeze-thaw conditions, prior to placement of additional material, the Contractor shall verify that materials still meet all specification requirements. Equipment may be routed over completed sections of base course, provided that no damage results and the equipment is routed over the full width of the completed base course. Any damage resulting to the base course from routing equipment over the base course shall be repaired by the Contractor at their expense.

208-3.8 Surface tolerances. After the course has been compacted, the surface shall be tested for smoothness and accuracy of grade and crown. Any portion lacking the required smoothness or failing in accuracy of grade or crown shall be scarified to a depth of at least 3 inches, reshaped and recompacted to grade until the required smoothness and accuracy are obtained and approved by the RPR. Any deviation in surface tolerances shall be corrected by the Contractor at the Contractor's expense. The smoothness and accuracy requirements specified here apply only to the top layer when base course is constructed in more than one layer.

a. Smoothness. The finished surface shall not vary more than 3/8-inch when tested with a 12-foot straightedge applied parallel with and at right angles to the centerline. The straightedge shall be moved continuously forward at half the length of the 12-foot straightedge for the full length of each line on a 50-foot grid.

b. Grade. The grade and crown shall be measured on a 50-foot grid and shall be within +0 and 1/2 inch of the specified grade.

208-3.9 Acceptance sampling and testing. Aggregate base course shall be accepted for density and thickness on an area basis. Two tests will be made for density and thickness for each 500 square yards. Sampling locations will be determined on a random basis per ASTM D3665.

a. Density. The Contractor's laboratory shall perform all density tests in the RPR's presence and provide the test results upon completion to the RPR for acceptance.

Each area shall be accepted for density when the field density is at least 100% of the maximum density of laboratory specimens compacted and tested per ASTM D698. The in-place field density shall be determined per ASTM D6938 using Procedure A, the direct transmission method, and ASTM D6938 shall be used to determine the moisture content of the material. The machine shall be calibrated in accordance with ASTM D6938. If the specified density is not attained, the area represented by the failed test must be reworked and/or recompacted and two additional random tests made. This procedure shall be followed

until the specified density is reached. Maximum density refers to maximum dry density at optimum moisture content unless otherwise specified.

b. Thickness. Depth tests shall be made by test holes at least 3 inches in diameter that extend through the base. The thickness of the base course shall be within +0 and -1/2 inch of the specified thickness as determined by depth tests taken by the Contractor in the presence of the RPR for each area. Where the thickness is deficient by more than 1/2-inch, the Contractor shall correct such areas at no additional cost by scarifying to a depth of at least 3 inches, adding new material of proper gradation, and the material shall be blended and recompacted to grade. The Contractor shall replace, at his expense, base material where depth tests have been taken.

METHOD OF MEASUREMENT

208-4.1 The quantity of aggregate base course shall be measured by the number of square yards of material actually constructed and accepted by the RPR as complying with the plans and specifications. Base materials shall not be included in any other excavation quantities.

BASIS OF PAYMENT

208-5.1 Payment shall be made at the contract unit price per square yards for aggregate base course. This price shall be full compensation for furnishing all materials and for all operations, hauling, placing, and compacting of these materials, and for all labor, equipment, tools, and incidentals necessary to complete the item.

Payment will be made under:

No. 12, Spec No. P-208-5.1	Taxiway Aggregate Base Course (9-Inch Depth) – per Square Yard
No. 13, Spec No. P-208-5.2	Shoulder Aggregate Base Course (6-Inch Depth) – per Square Yard

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM International (ASTM)

ASTM C29	Standard Test Method for Bulk Density ("Unit Weight") and Voids in Aggregate
ASTM C88	Standard Test Method for Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate
ASTM C117	Standard Test Method for Materials Finer than 75-µm (No. 200) Sieve in Mineral Aggregates by Washing
ASTM C131	Standard Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
ASTM C136	Standard Test Method for Sieve or Screen Analysis of Fine and Coarse Aggregates
ASTM C142	Standard Test Method for Clay Lumps and Friable Particles in Aggregates

ASTM D75	Standard Practice for Sampling Aggregates
ASTM D698	Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft3 (600 kN-m/m3))
ASTM D1556	Standard Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method
ASTM D1557	Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft3 (2700 kN-m/m3))
ASTM D2167	Standard Test Method for Density and Unit Weight of Soil in Place by the Rubber Balloon Method
ASTM D2487	Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System)
ASTM D3665	Standard Practice for Random Sampling of Construction Materials
ASTM D4318	Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils
ASTM D4491	Standard Test Methods for Water Permeability of Geotextiles by Permittivity
ASTM D4643	Standard Test Method for Determination of Water Content of Soil and Rock by Microwave Oven Heating
ASTM D4751	Standard Test Methods for Determining Apparent Opening Size of a Geotextile
ASTM D4791	Standard Test Method for Flat Particles, Elongated Particles, or Flat and Elongated Particles in Coarse Aggregate
ASTM D5821	Standard Test Method for Determining the Percentage of Fractured Particles in Coarse Aggregate
ASTM D6938	Standard Test Method for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)
ASTM D7928	Standard Test Method for Particle-Size Distribution (Gradation) of Fine-Grained Soils Using the Sedimentation (Hydrometer) Analysis

American Association of State Highway and Transportation Officials (AASHTO)

M288	Standard Specification for Geosynthetic Specification for Highway Applications

END OF ITEM P-208

Item P-401 Asphalt Mix Pavement

DESCRIPTION

401-1.1 This item shall consist of pavement courses composed of mineral aggregate and asphalt binder mixed in a central mixing plant and placed on a prepared base or stabilized course in accordance with these specifications and shall conform to the lines, grades, thicknesses, and typical cross-sections shown on the plans. Each course shall be constructed to the depth, typical section, and elevation required by the plans and shall be rolled, finished, and approved before the placement of the next course.

MATERIALS

401-2.1 Aggregate. Aggregates shall consist of crushed stone, crushed gravel, crushed slag, screenings, natural sand, and mineral filler, as required. The aggregates should have no known history of detrimental pavement staining due to ferrous sulfides, such as pyrite. Coarse aggregate is the material retained on the No. 4 sieve. Fine aggregate is the material passing the No. 4 sieve.

a. Coarse aggregate. Coarse aggregate shall consist of sound, tough, durable particles, free from films of matter that would prevent thorough coating and bonding with the asphalt material and free from organic matter and other deleterious substances. Coarse aggregate material requirements are given in the table below.

Coarse Aggregate Material Requirements

Material Test	Requirement	Standard
Resistance to Degradation	Loss: 40% maximum	ASTM C131
Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate	Loss after 5 cycles: 12% maximum using Sodium Sulfate - or - 18% maximum using Magnesium Sulfate	ASTM C88
Clay lumps and friable particles	1.0% maximum	ASTM C142
Percentage of Fractured Particles	For pavements designed for aircraft gross weights less than 60,000 pounds: Minimum 50% by weight of particles with at least two fractured faces and 65% with at least one fractured face[1]	ASTM D5821
Flat, Elongated, or Flat and Elongated Particles	8% maximum, by weight, of flat, elongated, or flat and elongated particles at 5:1 [2]	ASTM D4791

[1] The area of each face shall be equal to at least 75% of the smallest mid-sectional area of the piece. When two fractured faces are contiguous, the angle between the planes of fractures shall be at least 30 degrees to count as two fractured faces.

[2] A flat particle is one having a ratio of width to thickness greater than five (5); an elongated particle is one having a ratio of length to width greater than five (5).

b. Fine aggregate. Fine aggregate shall consist of clean, sound, tough, durable, angular shaped particles produced by crushing stone, slag, or gravel and shall be free from coatings of clay, silt, or other objectionable matter. Natural (non-manufactured) sand may be used to obtain the gradation of the fine aggregate blend or to improve the workability of the mix. Fine aggregate material requirements are listed in the table below.

Fine Aggregate Material Requirements

Material Test	Requirement	Standard
Liquid limit	25 maximum	ASTM D4318
Plasticity Index	4 maximum	ASTM D4318
Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate	Loss after 5 cycles: 10% maximum using Sodium Sulfate - or - 15% maximum using Magnesium Sulfate	ASTM C88
Clay lumps and friable particles	1.0% maximum	ASTM C142
Sand equivalent	45 minimum	ASTM D2419

c. Sampling. ASTM D75 shall be used in sampling coarse and fine aggregate.

401-2.2 Mineral filler. Mineral filler (baghouse fines) may be added in addition to material naturally present in the aggregate. Mineral filler shall meet the requirements of ASTM D242.

Mineral Filler Requirements

Material Test	Requirement	Standard
Plasticity Index	4 maximum	ASTM D4318

401-2.3 Asphalt binder. Asphalt binder shall conform to ASTM D6373 Performance Grade (PG) 70-22.

Asphalt Binder PG Plus Test Requirements

Material Test	Requirement	Standard
Elastic Recovery	75% minimum	ASTM D6084[1]

[1] Follow procedure B on RTFO aged binder.

401-2.4 Anti-stripping agent. Any anti-stripping agent or additive (anti-strip) shall be heat stable and shall not change the asphalt binder grade beyond specifications. Anti-strip shall be an approved material of the Department of Transportation of the State in which the project is located.

COMPOSITION

401-3.1 Composition of mixture(s). The asphalt mix shall be composed of a mixture of aggregates, filler and anti-strip agent if required, and asphalt binder. The aggregate fractions shall be sized, handled in separate size groups, and combined in such proportions that the resulting mixture meets the grading requirements of the job mix formula (JMF).

401-3.2 Job mix formula (JMF) laboratory. The laboratory used to develop the JMF shall possess a current certificate of accreditation, listing D3666 from a national accrediting authority and all test methods required for developing the JMF; and be listed on the accrediting authority's website. A copy of the laboratory's current accreditation and accredited test methods shall be submitted to the Resident Project Representative (RPR) prior to start of construction.

401-3.3 Job mix formula (JMF). No asphalt mixture shall be placed until an acceptable mix design has been submitted to the RPR for review and accepted in writing. The RPR's review shall not relieve the Contractor of the responsibility to select and proportion the materials to comply with this section.

When the project requires asphalt mixtures of differing aggregate gradations and/or binders, a separate JMF shall be submitted for each mix. Add anti-stripping agent to meet tensile strength requirements.

The JMF shall be prepared by an accredited laboratory that meets the requirements of paragraph 401-3.2. The asphalt mixture shall be designed using procedures contained in Asphalt Institute MS-2 Mix Design Manual, 7th Edition. Samples shall be prepared and compacted using a Marshall compactor in accordance with ASTM D6926 and using the gyratory compactor in accordance with ASTM D6925.

Should a change in sources of materials be made, a new JMF must be submitted to the RPR for review and accepted in writing before the new material is used. After the initial production JMF has been approved by the RPR and a new or modified JMF is required for whatever reason, the subsequent cost of the new or modified JMF, including a new control strip when required by the RPR, will be borne by the Contractor.

The RPR may request samples at any time for testing, prior to and during production, to verify the quality of the materials and to ensure conformance with the applicable specifications.

The JMF shall be submitted in writing by the Contractor at least 30 days prior to the start of paving operations. The JMF shall be developed within the same construction season using aggregates proposed for project use.

The JMF shall be dated, and stamped or sealed by the responsible professional Engineer of the laboratory and shall include the following items as a minimum:

- Manufacturer's Certificate of Analysis (COA) for the asphalt binder used in the JMF in accordance with paragraph 401-2.3. Certificate of asphalt performance grade is with modifier already added, if used and must indicate compliance with ASTM D6373. For plant modified asphalt binder, certified test report indicating grade certification of modified asphalt binder.
- Manufacturer's Certificate of Analysis (COA) for the anti-stripping agent if used in the JMF in accordance with paragraph 401-2.4.

- Certified material test reports for the course and fine aggregate and mineral filler in accordance with paragraphs 401-2.1.
- Percent passing each sieve size for individual gradation of each aggregate cold feed and/or hot bin; percent by weight of each cold feed and/or hot bin used; and the total combined gradation in the JMF.
- Specific Gravity and absorption of each coarse and fine aggregate.
- Percent fractured faces.
- Percent by weight of flat particles, elongated particles, and flat and elongated particles (and criteria).
- Percent of asphalt.
- Number of blows or gyrations
- Laboratory mixing and compaction temperatures.
- Supplier-recommended field mixing and compaction temperatures.
- Plot of the combined gradation on a 0.45 power gradation curve.
- Graphical plots of air voids, voids in the mineral aggregate (VMA), and unit weight versus asphalt content. To achieve minimum VMA during production, the mix design needs to account for material breakdown during production.
- Tensile Strength Ratio (TSR).
- Type and amount of Anti-strip agent when used.
- Asphalt Pavement Analyzer (APA) results.
- Date the JMF was developed. Mix designs that are not dated or which are from a prior construction season shall not be accepted.

Table 1. Asphalt Design Criteria

Test Property	Value	Test Method
Number of blows or gyrations	50	ASTM D6926
Air voids (%)	3.5	ASTM D3203
Percent voids in mineral aggregate (VMA), minimum	See Table 2	ASTM D6995
Tensile Strength Ratio (TSR)[1]	not less than 80 at a saturation of 70-80%	ASTM D4867
Asphalt Pavement Analyzer (APA)[2]	Less than 10 mm @ 4000 passes	AASHTO T340 at 250 psi hose pressure at 64°C test temperature

[1] Test specimens for TSR shall be compacted at 7 ± 1.0 % air voids. In areas subject to freeze-thaw, use freeze-thaw conditioning in lieu of moisture conditioning per ASTM D4867.

[2] AASHTO T340 at 100 psi hose pressure at 64°C test temperature may be used in the interim. If this method is used the required Value shall be less than 5 mm @ 8000 passes

The mineral aggregate shall be of such size that the percentage composition by weight, as determined by laboratory sieves, will conform to the gradation or gradations specified in Table 2 when tested in accordance with ASTM C136 and ASTM C117.

The gradations in Table 2 represent the limits that shall determine the suitability of aggregate for use from the sources of supply; be well graded from coarse to fine and shall not vary from the low limit on one sieve to the high limit on the adjacent sieve, or vice versa.

Table 2. Aggregate - Asphalt Pavements

Sieve Size	Percentage by Weight Passing Sieve
1 inch	--
3/4 inch	100
1/2 inch	90-100
3/8 inch	72-88
No. 4	53-73
No. 8	38-60
No. 16	26-48
No. 30	18-38
No. 50	11-27
No. 100	6-18
No. 200	3-6
Minimum Voids in Mineral Aggregate (VMA)[1]	15.0
Asphalt Percent:	
Stone or gravel	5.0-7.5
Slag	6.5-9.5
Recommended Minimum Construction Lift Thickness	2 inch

[1] To achieve minimum VMA during production, the mix design needs to account for material breakdown during production.

The aggregate gradations shown are based on aggregates of uniform specific gravity. The percentages passing the various sieves shall be corrected when aggregates of varying specific gravities are used, as indicated in the Asphalt Institute MS-2 Mix Design Manual, 7th Edition.

401-3.4 Reclaimed asphalt pavement (RAP). RAP shall not be used.

401-3.5 Control Strip. Full production shall not begin until an acceptable control strip has been constructed and accepted in writing by the RPR. The Contractor shall prepare and place a quantity of asphalt according to the JMF. The underlying grade or pavement structure upon which the control strip is to be constructed shall be the same as the remainder of the course represented by the control strip.

The Contractor will not be allowed to place the control strip until the Contractor quality control program (CQCP), showing conformance with the requirements of paragraph 401-5.1, has been accepted, in writing, by the RPR.

The control strip will consist of at least 250 tons or 1/2 sublot, whichever is greater. The control strip shall be placed in two lanes of the same width and depth to be used in production with a longitudinal cold joint. The cold joint must be cut back in accordance with paragraph 401-4.14 using the same procedure that will be used during production. The cold joint for the control strip will be an exposed construction joint at least four (4) hours old or when the mat has cooled to less than 160°F. The equipment used in construction of the control strip shall be the same type, configuration and weight to be used on the project.

The control strip will be considered acceptable by the RPR if the gradation, asphalt content, and VMA are within the action limits specified in paragraph 401-5.5a; and Mat density greater than or equal to 94.5%, air voids 3.5% +/- 1%, and joint density greater than or equal to 92.5%.

If the control strip is unacceptable, necessary adjustments to the JMF, plant operation, placing procedures, and/or rolling procedures shall be made and another control strip shall be placed. Unacceptable control strips shall be removed at the Contractor's expense.

The control strip will be considered one lot for payment based upon the average of a minimum of 3 samples (no sublots required for control strip). Payment will only be made for an acceptable control strip in accordance with paragraph 401-8.1 using a lot pay factor equal to 100.

CONSTRUCTION METHODS

401-4.1 Weather limitations. The asphalt shall not be placed upon a wet surface or when the surface temperature of the underlying course is less than specified in Table 4. The temperature requirements may be waived by the RPR, if requested; however, all other requirements including compaction shall be met.

Table 4. Surface Temperature Limitations of Underlying Course

Mat Thickness	Base Temperature (Minimum)
3 inches or greater	40°F
Greater than 2 inches but less than 3 inches	45°F

401-4.2 Asphalt plant. Plants used for the preparation of asphalt shall conform to the requirements of American Association of State Highway and Transportation Officials (AASHTO) M156 including the following items.

a. Inspection of plant. The RPR, or RPR's authorized representative, shall have access, at all times, to all areas of the plant for checking adequacy of equipment; inspecting operation of the plant: verifying weights, proportions, and material properties; and checking the temperatures maintained in the preparation of the mixtures.

b. Storage bins and surge bins. The asphalt mixture stored in storage and/or surge bins shall meet the same requirements as asphalt mixture loaded directly into trucks. Asphalt mixture shall not be stored in storage and/or surge bins for a period greater than twelve (12) hours. If the RPR determines there is an excessive heat loss, segregation, or oxidation of the asphalt mixture due to temporary storage, temporary storage shall not be allowed.

401-4.3 Aggregate stockpile management. Aggregate stockpiles shall be constructed in a manner that prevents segregation and intermixing of deleterious materials. Aggregates from different sources shall be stockpiled, weighed and batched separately at the asphalt batch plant. Aggregates that have become segregated or mixed with earth or foreign material shall not be used.

A continuous supply of materials shall be provided to the work to ensure continuous placement.

401-4.4 Hauling equipment. Trucks used for hauling asphalt shall have tight, clean, and smooth metal beds. To prevent the asphalt from sticking to the truck beds, the truck beds shall be lightly coated with a minimum amount of paraffin oil, lime solution, or other material approved by the RPR. Petroleum products shall not be used for coating truck beds. Each truck shall have a suitable cover to protect the mixture from adverse weather. When necessary, to ensure that the mixture will be delivered to the site at the specified temperature, truck beds shall be insulated or heated and covers shall be securely fastened.

401-4.4.1 Material transfer vehicle (MTV). Material transfer vehicles are not required.

401-4.5 Asphalt pavers. Asphalt pavers shall be self-propelled with an activated heated screed, capable of spreading and finishing courses of asphalt that will meet the specified thickness, smoothness, and grade. The paver shall have sufficient power to propel itself and the hauling equipment without adversely affecting the finished surface. The asphalt paver shall be equipped with a control system capable of automatically maintaining the specified screed grade and elevation.

If the spreading and finishing equipment in use leaves tracks or indented areas, or produces other blemishes in the pavement that are not satisfactorily corrected by the scheduled operations, the use of such equipment shall be discontinued.

The paver shall be capable of paving to a minimum width specified in paragraph 401-4.12.

401-4.6 Rollers. The number, type, and weight of rollers shall be sufficient to compact the asphalt to the required density while it is still in a workable condition without crushing of the aggregate, depressions or other damage to the pavement surface. Rollers shall be in good condition, clean, and capable of operating at slow speeds to avoid displacement of the asphalt. All rollers shall be specifically designed and suitable for compacting asphalt concrete and shall be properly used. Rollers that impair the stability of any layer of a pavement structure or underlying soils shall not be used.

401-4.7 Density device. The Contractor shall have on site a density gauge during all paving operations in order to assist in the determination of the optimum rolling pattern, type of roller and frequencies, as well as to monitor the effect of the rolling operations during production paving. The Contractor shall supply a qualified technician during all paving operations to calibrate the gauge and obtain accurate density readings for all new asphalt. These densities shall be supplied to the RPR upon request at any time during construction. No separate payment will be made for supplying the density gauge and technician.

401-4.8 Preparation of asphalt binder. The asphalt binder shall be heated in a manner that will avoid local overheating and provide a continuous supply of the asphalt binder to the mixer at a uniform temperature. The temperature of unmodified asphalt binder delivered to the mixer shall be sufficient to provide a suitable viscosity for adequate coating of the aggregate particles, but shall not exceed 325°F when added to the aggregate. The temperature of modified asphalt binder shall be no more than 350°F when added to the aggregate.

401-4.9 Preparation of mineral aggregate. The aggregate for the asphalt shall be heated and dried. The maximum temperature and rate of heating shall be such that no damage occurs to the aggregates. The temperature of the aggregate and mineral filler shall not exceed 350°F when the asphalt binder is added. Particular care shall be taken that aggregates high in calcium or magnesium content are not damaged by overheating. The temperature shall not be lower than is required to obtain complete coating and uniform distribution on the aggregate particles and to provide a mixture of satisfactory workability.

401-4.10 Preparation of Asphalt mixture. The aggregates and the asphalt binder shall be weighed or metered and mixed in the amount specified by the JMF. The combined materials shall be mixed until the aggregate obtains a uniform coating of asphalt binder and is thoroughly distributed throughout the mixture. Wet mixing time shall be the shortest time that will produce a satisfactory mixture, but not less than 25 seconds for batch plants. The wet mixing time for all plants shall be established by the Contractor, based on the procedure for determining the percentage of coated particles described in ASTM D2489, for each individual plant and for each type of aggregate used. The wet mixing time will be set to achieve 95% of coated particles. For continuous mix plants, the minimum mixing time shall be determined by dividing the weight of its contents at operating level by the weight of the mixture delivered per second by the mixer. The moisture content of all asphalt upon discharge shall not exceed 0.5%.

401-4.11 Application of Prime and Tack Coat. Immediately before placing the asphalt mixture, the underlying course shall be cleaned of all dust and debris.

A tack coat shall be applied in accordance with Item P-603 to all vertical and horizontal asphalt and concrete surfaces prior to placement of the first and each subsequent lift of asphalt mixture.

401-4.12 Laydown plan, transporting, placing, and finishing. Prior to the placement of the asphalt, the Contractor shall prepare a laydown plan with the sequence of paving lanes and width to minimize the number of cold joints; the location of any temporary ramps; laydown temperature; and estimated time of completion for each portion of the work (milling, paving, rolling, cooling, etc.). The laydown plan and any modifications shall be approved by the RPR.

Deliveries shall be scheduled so that placing and compacting of asphalt is uniform with minimum stopping and starting of the paver. Hauling over freshly placed material shall not be permitted until the material has been compacted, as specified, and allowed to cool to approximately ambient temperature. The Contractor, at their expense, shall be responsible for repair of any damage to the pavement caused by hauling operations.

Contractor shall survey each lift of asphalt surface course and certify to RPR that every lot of each lift meets the grade tolerances of paragraph 401-6.2d before the next lift can be placed.

Edges of existing asphalt pavement abutting the new work shall be saw cut and the cut off material and laitance removed. Apply a tack coat in accordance with P-603 before new asphalt material is placed against it.

The speed of the paver shall be regulated to eliminate pulling and tearing of the asphalt mat. Placement of the asphalt mix shall begin along the centerline of a crowned section or on the high side of areas with a one way slope unless shown otherwise on the laydown plan as accepted by the RPR. The asphalt mix shall be placed in consecutive adjacent lanes having a minimum width of 12 feet except where edge lanes require less width to complete the area. Additional screed sections attached to widen the paver to meet the minimum lane width requirements must include additional auger sections to move the asphalt mixture uniformly along the screed extension.

The longitudinal joint in one course shall offset the longitudinal joint in the course immediately below by at least one foot; however, the joint in the surface top course shall be at the centerline of crowned pavements. Transverse joints in one course shall be offset by at least 10 feet from transverse joints in the previous course. Transverse joints in adjacent lanes shall be offset a minimum of 10 feet. On areas where irregularities or unavoidable obstacles make the use of mechanical spreading and finishing equipment impractical, the asphalt may be spread and luted by hand tools.

The RPR may at any time, reject any batch of asphalt, on the truck or placed in the mat, which is rendered unfit for use due to contamination, segregation, incomplete coating of aggregate, or overheated asphalt mixture. Such rejection may be based on only visual inspection or temperature measurements. In the event of such rejection, the Contractor may take a representative sample of the rejected material in the presence of the RPR, and if it can be demonstrated in the laboratory, in the presence of the RPR, that such material was erroneously rejected, payment will be made for the material at the contract unit price.

Areas of segregation in the surface course, as determined by the RPR, shall be removed and replaced at the Contractor's expense. The area shall be removed by saw cutting and milling a minimum of the construction lift thickness as specified in paragraph 401-3.3, Table 2 for the approved mix design. The area to be removed and replaced shall be a minimum width of the paver and a minimum of 10 feet long.

401-4.13 Compaction of asphalt mixture. After placing, the asphalt mixture shall be thoroughly and uniformly compacted by self-propelled rollers. The surface shall be compacted as soon as possible when

the asphalt has attained sufficient stability so that the rolling does not cause undue displacement, cracking or shoving. The sequence of rolling operations and the type of rollers used shall be at the discretion of the Contractor. The speed of the roller shall, at all times, be sufficiently slow to avoid displacement of the hot mixture and be effective in compaction. Any surface defects and/or displacement occurring as a result of the roller, or from any other cause, shall be corrected at the Contractor's expense.

Sufficient rollers shall be furnished to handle the output of the plant. Rolling shall continue until the surface is of uniform texture, true to grade and cross-section, and the required field density is obtained. To prevent adhesion of the asphalt to the roller, the wheels shall be equipped with a scraper and kept moistened with water as necessary.

In areas not accessible to the roller, the mixture shall be thoroughly compacted with approved power tampers.

Any asphalt that becomes loose and broken, mixed with dirt, contains check-cracking, or in any way defective shall be removed and replaced with fresh hot mixture and immediately compacted to conform to the surrounding area. This work shall be done at the Contractor's expense. Skin patching shall not be allowed.

401-4.14 Joints. The formation of all joints shall be made to ensure a continuous bond between the courses and obtain the required density. All joints shall have the same texture as other sections of the course and meet the requirements for smoothness and grade.

The roller shall not pass over the unprotected end of the freshly laid asphalt except when necessary to form a transverse joint. When necessary to form a transverse joint, it shall be made by means of placing a bulkhead or by tapering the course. The tapered edge shall be cut back to its full depth and width on a straight line to expose a vertical face prior to placing the adjacent lane. In both methods, all contact surfaces shall be coated with an asphalt tack coat before placing any fresh asphalt against the joint.

Longitudinal joints which have been left exposed for more than four (4) hours; the surface temperature has cooled to less than 175°F; or are irregular, damaged, uncompacted or otherwise defective shall be cut back with a cutting wheel or pavement saw a maximum of 3 inches to expose a clean, sound, uniform vertical surface for the full depth of the course. All cutback material and any laitance produced from cutting joints shall be removed from the project. Asphalt tack coat in accordance with P-603 shall be applied to the clean, dry joint prior to placing any additional fresh asphalt against the joint. The cost of this work shall be considered incidental to the cost of the asphalt.

401-4.15 Saw-cut grooving. Saw-cut grooving is not required.

401-4.16 Diamond grinding. Diamond grinding shall be completed prior to pavement grooving. Diamond grinding shall be accomplished by sawing with saw blades impregnated with industrial diamond abrasive.

Diamond grinding shall be performed with a machine designed specifically for diamond grinding capable of cutting a path at least 3 feet wide. The saw blades shall be 1/8-inch wide with a sufficient number of blades to create grooves between 0.090 and 0.130 inches wide; and peaks and ridges approximately 1/32 inch higher than the bottom of the grinding cut. The actual number of blades will be determined by the Contractor and depend on the hardness of the aggregate. Equipment or grinding procedures that cause

ravels, aggregate fractures, spalls or disturbance to the pavement will not be permitted. Contractor shall demonstrate to the RPR that the grinding equipment will produce satisfactory results prior to making corrections to surfaces. Grinding will be tapered in all directions to provide smooth transitions to areas not requiring grinding. The slurry resulting from the grinding operation shall be continuously removed and the pavement left in a clean condition. The Contractor shall apply a surface treatment per P-608 to all areas that have been subject to grinding.

401-4.17 Nighttime paving requirements. The Contractor shall provide adequate lighting during any nighttime construction. A lighting plan shall be submitted by the Contractor and approved by the RPR prior to the start of any nighttime work. All work shall be in accordance with the approved CSPP and lighting plan.

CONTRACTOR QUALITY CONTROL (CQC)

401-5.1 General. The Contractor shall develop a Contractor Quality Control Program (CQCP) in accordance with Item C-100. No partial payment will be made for materials without an approved CQCP.

401-5.2 Contractor quality control (QC) facilities. The Contractor shall provide or contract for testing facilities in accordance with Item C-100. The RPR shall be permitted unrestricted access to inspect the Contractor's QC facilities and witness QC activities. The RPR will advise the Contractor in writing of any noted deficiencies concerning the QC facility, equipment, supplies, or testing personnel and procedures. When the deficiencies are serious enough to be adversely affecting the test results, the incorporation of the materials into the work shall be suspended immediately and will not be permitted to resume until the deficiencies are satisfactorily corrected.

401-5.3 Contractor QC testing. The Contractor shall perform all QC tests necessary to control the production and construction processes applicable to these specifications and as set forth in the approved CQCP. The testing program shall include, but not necessarily be limited to, tests for the control of asphalt content, aggregate gradation, temperatures, aggregate moisture, field compaction, and surface smoothness. A QC Testing Plan shall be developed as part of the CQCP.

a. Asphalt content. A minimum of two tests shall be performed per day in accordance with ASTM D6307 or ASTM D2172 for determination of asphalt content. When using ASTM D6307, the correction factor shall be determined as part of the first test performed at the beginning of plant production; and as part of every tenth test performed thereafter. The asphalt content for the day will be determined by averaging the test results.

b. Gradation. Aggregate gradations shall be determined a minimum of twice per day from mechanical analysis of extracted aggregate in accordance with ASTM D5444, ASTM C136, and ASTM C117.

c. Moisture content of aggregate. The moisture content of aggregate used for production shall be determined a minimum of once per day in accordance with ASTM C566.

d. Moisture content of asphalt. The moisture content shall be determined once per day in accordance with AASHTO T329 or ASTM D1461.

e. Temperatures. Temperatures shall be checked, at least four times per day, at necessary locations to determine the temperatures of the dryer, the asphalt binder in the storage tank, the asphalt at the plant, and the asphalt at the job site.

f. In-place density monitoring. The Contractor shall conduct any necessary testing to ensure that the specified density is being achieved. A nuclear gauge may be used to monitor the pavement density in accordance with ASTM D2950.

g. Smoothness for Contractor Quality Control. The Contractor shall perform smoothness testing in transverse and longitudinal directions daily to verify that the construction processes are producing pavement with variances less than ¼ inch in 12 feet, identifying areas that may pond water which could lead to hydroplaning of aircraft. If the smoothness criteria is not met, appropriate changes and corrections to the construction process shall be made by the Contractor before construction continues

The Contractor may use a 12-foot "straightedge, a rolling inclinometer meeting the requirements of ASTM E2133 or rolling external reference device that can simulate a 12-foot straightedge approved by the RPR. Straight-edge testing shall start with one-half the length of the straightedge at the edge of pavement section being tested and then moved ahead one-half the length of the straightedge for each successive measurement. Testing shall be continuous across all joints. The surface irregularity shall be determined by placing the freestanding (unleveled) straightedge on the pavement surface and allowing it to rest upon the two highest spots covered by its length, and measuring the maximum gap between the straightedge and the pavement surface in the area between the two high points. If the rolling inclinometer or external reference device is used, the data may be evaluated using either the FAA profile program, ProFAA, or FHWA ProVal, using the 12-foot straightedge simulation function.

Smoothness readings shall not be made across grade changes or cross slope transitions. The transition between new and existing pavement shall be evaluated separately for conformance with the plans.

1. Transverse measurements. Transverse measurements shall be taken for each day's production placed. Transverse measurements shall be taken perpendicular to the pavement centerline each 50 feet or more often as determined by the RPR. The joint between lanes shall be tested separately to facilitate smoothness between lanes.

2. Longitudinal measurements. Longitudinal measurements shall be taken for each day's production placed. Longitudinal tests shall be parallel to the centerline of paving; at the center of paving lanes when widths of paving lanes are less than 20 feet; and at the third points of paving lanes when widths of paving lanes are 20 ft or greater. When placement abuts previously placed material the first measurement shall start with one half the length of the straight edge on the previously placed material.

Deviations on the final surface course in either the transverse or longitudinal direction that will trap water greater than 1/4 inch shall be corrected with diamond grinding per paragraph 401-4.16 or by removing and replacing the surface course to full depth. Grinding shall be tapered in all directions to provide smooth transitions to areas not requiring grinding. All areas in which diamond grinding has been performed shall be subject to the final pavement thickness tolerances specified in paragraph 401-6.1d(3). Areas that have been ground shall be sealed with a surface treatment in accordance with Item P-608. To avoid the surface treatment creating any conflict with runway or taxiway markings, it may be necessary to seal a larger area.

Control charts shall be kept to show area of each day's placement and the percentage of corrective grinding required. Corrections to production and placement shall be initiated when corrective grinding is required. If the Contractor's machines and/or methods produce significant areas that need corrective actions in excess of 10 percent of a day's production, production shall be stopped until corrective measures are implemented by the Contractor.

h. Grade. Grade shall be evaluated daily to allow adjustments to paving operations when grade measurements do not meet specifications. As a minimum, grade shall be evaluated prior to and after the placement of the first lift and after placement of the surface lift.

Measurements will be taken at appropriate gradelines (as a minimum at center and edges of paving lane) and longitudinal spacing as shown on cross-sections and plans. The final surface of the pavement will not vary from the gradeline elevations and cross-sections shown on the plans by more than 1/2 inch vertically and 0.1 feet laterally. The documentation will be provided by the Contractor to the RPR by the end of the following working day.

Areas with humps or depressions that exceed grade or smoothness criteria and that retain water on the surface must be ground off provided the course thickness after grinding is not more than 1/2 inch less than the thickness specified on the plans. Grinding shall be in accordance with paragraph 401-4.16.

The Contractor shall repair low areas or areas that cannot be corrected by grinding by removal of deficient areas to the depth of the final course plus ½ inch and replacing with new material. Skin patching is not allowed.

401-5.4 Sampling. When directed by the RPR, the Contractor shall sample and test any material that appears inconsistent with similar material being sampled, unless such material is voluntarily removed and replaced or deficiencies corrected by the Contractor. All sampling shall be in accordance with standard procedures specified.

401-5.5 Control charts. The Contractor shall maintain linear control charts for both individual measurements and range (i.e. difference between highest and lowest measurements) for aggregate gradation, asphalt content, and VMA. The VMA for each day will be calculated and monitored by the QC laboratory.

Control charts shall be posted in a location satisfactory to the RPR and kept current. As a minimum, the control charts shall identify the project number, the contract item number, the test number, each test parameter, the Action and Suspension Limits applicable to each test parameter, and the Contractor's test results. The Contractor shall use the control charts as part of a process control system for identifying potential problems and assignable causes before they occur. If the Contractor's projected data during production indicates a problem and the Contractor is not taking satisfactory corrective action, the RPR may suspend production or acceptance of the material.

a. Individual measurements. Control charts for individual measurements shall be established to maintain process control within tolerance for aggregate gradation, asphalt content, and VMA. The control charts shall use the job mix formula target values as indicators of central tendency for the following test parameters with associated Action and Suspension Limits:

Control Chart Limits for Individual Measurements

Sieve	Action Limit	Suspension Limit
3/4 inch	±6%	±9%
1/2 inch	±6%	±9%
3/8 inch	±6%	±9%
No. 4	±6%	±9%
No. 16	±5%	±7.5%
No. 50	±3%	±4.5%
No. 200	±2%	±3%
Asphalt Content	±0.45%	±0.70%
Minimum VMA	-0.5%	-1.0%

b. Range. Control charts shall be established to control gradation process variability. The range shall be plotted as the difference between the two test results for each control parameter. The Suspension Limits specified below are based on a sample size of n = 2. Should the Contractor elect to perform more than two tests per lot, the Suspension Limits shall be adjusted by multiplying the Suspension Limit by 1.18 for n = 3 and by 1.27 for n = 4.

Control Chart Limits Based on Range

Sieve	Suspension Limit
1/2 inch	11%
3/8 inch	11%
No. 4	11%
No. 16	9%
No. 50	6%
No. 200	3.5%
Asphalt Content	0.8%

c. Corrective Action. The CQCP shall indicate that appropriate action shall be taken when the process is believed to be out of tolerance. The Plan shall contain rules to gauge when a process is out of control and detail what action will be taken to bring the process into control. As a minimum, a process shall be deemed out of control and production stopped and corrective action taken, if:

1. One point falls outside the Suspension Limit line for individual measurements or range; or
2. Two points in a row fall outside the Action Limit line for individual measurements.

401-5.6 QC reports. The Contractor shall maintain records and shall submit reports of QC activities daily, in accordance with Item C-100.

MATERIAL ACCEPTANCE

401-6.1 Acceptance sampling and testing. Unless otherwise specified, all acceptance sampling and testing necessary to determine conformance with the requirements specified in this section will be performed by the RPR at no cost to the Contractor except that coring as required in this section shall be completed and paid for by the Contractor.

a. Quality assurance (QA) testing laboratory. The QA testing laboratory performing these acceptance tests will be accredited in accordance with ASTM D3666. The QA laboratory accreditation will be current and listed on the accrediting authority's website. All test methods required for acceptance sampling and testing will be listed on the lab accreditation.

b. Lot size. A standard lot will be equal to one day's production divided into approximately equal sublots of between 400 to 600 tons. When only one or two sublots are produced in a day's production, the sublots will be combined with the production lot from the previous or next day.

Where more than one plant is simultaneously producing asphalt for the job, the lot sizes will apply separately for each plant.

c. Asphalt air voids. Plant-produced asphalt will be tested for air voids on a sublot basis.

1. Sampling. Material from each sublot shall be sampled in accordance with ASTM D3665. Samples shall be taken from material deposited into trucks at the plant or at the job site in accordance with ASTM D979. The sample of asphalt may be put in a covered metal tin and placed in an oven for not less than 30 minutes nor more than 60 minutes to maintain the material at or above the compaction temperature as specified in the JMF.

2. Testing. Air voids will be determined for each sublot in accordance with ASTM D3203 for a set of compacted specimens prepared in accordance with ASTM D6926 and ASTM D6925.

d. In-place asphalt mat and joint density. Each sublot will be tested for in-place mat and joint density as a percentage of the theoretical maximum density (TMD).

1. Sampling. The Contractor will cut minimum 5 inch diameter samples in accordance with ASTM D5361. The Contractor shall furnish all tools, labor, and materials for cleaning, and filling the cored pavement. Laitance produced by the coring operation shall be removed immediately after coring, and core holes shall be filled within one day after sampling in a manner acceptable to the RPR.

2. Bond. Each lift of asphalt shall be bonded to the underlying layer. If cores reveal that the surface is not bonded, additional cores shall be taken as directed by the RPR to determine the extent of unbonded areas. Unbonded areas shall be removed by milling and replaced at no additional cost as directed by the RPR.

3. Thickness. Thickness of each lift of surface course will be evaluated by the RPR for compliance to the requirements shown on the plans after any necessary corrections for grade. Measurements of thickness will be made using the cores extracted for each sublot for density measurement. The maximum allowable deficiency at any point will not be more than 1/4 inch less than the thickness

indicated for the lift. Average thickness of lift, or combined lifts, will not be less than the indicated thickness. Where the thickness tolerances are not met, the lot or sublot shall be corrected by the Contractor at his expense by removing the deficient area and replacing with new pavement. The Contractor, at his expense, may take additional cores as approved by the RPR to circumscribe the deficient area.

4. Mat density. One core shall be taken from each sublot. Core locations will be determined by the RPR in accordance with ASTM D3665. Cores for mat density shall not be taken closer than one foot (30 cm) from a transverse or longitudinal joint. The bulk specific gravity of each cored sample will be determined in accordance with ASTM D2726. The percent compaction (density) of each sample will be determined by dividing the bulk specific gravity of each sublot sample by the TMD for that sublot.

5. Joint density. One core centered over the longitudinal joint shall be taken for each sublot that has a longitudinal joint. Core locations will be determined by the RPR in accordance with ASTM D3665. The bulk specific gravity of each core sample will be determined in accordance with ASTM D2726. The percent compaction (density) of each sample will be determined by dividing the bulk specific gravity of each joint density sample by the average TMD for the lot. The TMD used to determine the joint density at joints formed between lots will be the lower of the average TMD values from the adjacent lots.

401-6.2 Acceptance criteria.

a. General. Acceptance will be based on the implementation of the Contractor Quality Control Program (CQCP) and the following characteristics of the asphalt and completed pavements: air voids, mat density, joint density, grade and Profilograph roughness.

b. Air Voids and Mat density. Acceptance of each lot of plant produced material for mat density and air voids will be based on the percentage of material within specification limits (PWL). If the PWL of the lot equals or exceeds 90%, the lot will be acceptable. Acceptance and payment will be determined in accordance with paragraph 401-8.1.

c. Joint density. Acceptance of each lot of plant produced asphalt for joint density will be based on the PWL. If the PWL of the lot is equal to or exceeds 90%, the lot will be considered acceptable. If the PWL is less than 90%, the Contractor shall evaluate the reason and act accordingly. If the PWL is less than 80%, the Contractor shall cease operations and until the reason for poor compaction has been determined. If the PWL is less than 71%, the pay factor for the lot used to complete the joint will be reduced by five (5) percentage points. This lot pay factor reduction will be incorporated and evaluated in accordance with paragraph 401-8.1.

d. Grade. The final finished surface of the pavement shall be surveyed to verify that the grade elevations and cross-sections shown on the plans do not deviate more than 1/2 inch vertically or 0.1 feet laterally.

Cross-sections of the pavement shall be taken at a minimum 50-foot longitudinal spacing, at all longitudinal grade breaks, and at start and end of each lane placed. Minimum cross-section grade points shall include grade at centerline, ± 10 feet of centerline, and edge of taxiway pavement.

The survey and documentation shall be stamped and signed by a licensed surveyor. Payment for sublots that do not meet grade for over 25% of the sublot shall not be more than 95%.

e. Profilograph roughness for QA Acceptance. The final profilograph shall be the full length of the project to facilitate testing of roughness between lots. The Contractor, in the presence of the RPR shall perform a profilograph roughness test on the completed project with a profilograph meeting the requirements of ASTM E1274 or a Class I inertial profiler meeting ASTM E950. Data and results shall be provided within 48 hours of profilograph roughness tests.

The pavement shall have an average profile index less than 15 inches per mile per 1/10 mile. The equipment shall utilize electronic recording and automatic computerized reduction of data to indicate "must grind" bumps and the Profile Index for the pavement using a 0.2-inch blanking band. The bump template must span one inch with an offset of 0.4 inches. The profilograph must be calibrated prior to use and operated by a factory or State DOT approved, trained operator. Profilograms shall be recorded on a longitudinal scale of one inch equals 25 feet and a vertical scale of one inch equals one inch. Profilograph shall be performed one foot right and left of project centerline and 15 feet right and left of project centerline. Any areas that indicate "must grind" shall be corrected with diamond grinding per paragraph 401-4.16 or by removing and replacing full depth of surface course. as directed by the RPR. Where corrections are necessary, a second profilograph run shall be performed to verify that the corrections produced an average profile index of 15 inches per mile per 1/10 mile or less.

401-6.3 Percentage of material within specification limits (PWL). The PWL will be determined in accordance with procedures specified in Item C-110. The specification tolerance limits (L) for lower and (U) for upper are contained in Table 5.

Table 5. Acceptance Limits for Air Voids and Density

Test Property	Pavements Specification Tolerance Limits	
	L	U
Air Voids Total Mix (%)	2.0	5.0
Surface Course Mat Density (%)	92.8	-
Base Course Mat Density (%)	92.0	-
Joint density (%)	90.5	-

a. Outliers. All individual tests for mat density and air voids will be checked for outliers (test criterion) in accordance with ASTM E178, at a significance level of 5%. Outliers will be discarded, and the PWL will be determined using the remaining test values. The criteria in Table 5 is based on production processes which have a variability with the following standard deviations: Surface Course Mat Density (%), 1.30; Base Course Mat Density (%), 1.55; Joint Density (%), 1.55.

The Contractor should note that (1) 90 PWL is achieved when consistently producing a surface course with an average mat density of at least 94.5% with 1.30% or less variability, (2) 90 PWL is achieved when consistently producing a base course with an average mat density of at least 94.0% with 1.55% or less variability, and (3) 90 PWL is achieved when consistently producing joints with an average joint density of at least 92.5% with 1.55% or less variability.

401-6.4 Resampling pavement for mat density.

a. General. Resampling of a lot of pavement will only be allowed for mat density, and then, only if the Contractor requests same, in writing, within 48 hours after receiving the written test results from the RPR. A retest will consist of all the sampling and testing procedures contained in paragraphs 401-6.1d and 401-6.2b. Only one resampling per lot will be permitted.

1. A redefined PWL will be calculated for the resampled lot. The number of tests used to calculate the redefined PWL will include the initial tests made for that lot plus the retests.

2. The cost for resampling and retesting shall be borne by the Contractor.

b. Payment for resampled lots. The redefined PWL for a resampled lot will be used to calculate the payment for that lot in accordance with Table 6.

c. Outliers. Check for outliers in accordance with ASTM E178, at a significance level of 5%.

METHOD OF MEASUREMENT

401-7.1 Measurement. Asphalt shall be measured by the number of square yards of asphalt used in the accepted work for the depth specified in the plans.

BASIS OF PAYMENT

401-8.1 Payment. Payment for a lot of asphalt meeting all acceptance criteria as specified in paragraph 401-6.2 shall be made based on results of tests for mat density and air voids. Payment for acceptable lots shall be adjusted according to paragraph 401-8.1c for mat density and air voids; and paragraph 401-6.2c for joint density, subject to the limitation that:

a. The total project payment for plant mix asphalt pavement shall not exceed 100 percent of the product of the contract unit price and the total number of square yards of asphalt used in the accepted work.

b. The price shall be compensation for furnishing all materials, for all preparation, mixing, and placing of these materials, and for all labor, equipment, tools, and incidentals necessary to complete the item.

c. Basis of adjusted payment. The pay factor for each individual lot shall be calculated in accordance with Table 6. A pay factor shall be calculated for both mat density and air voids. The lot pay factor shall be the higher of the two values when calculations for both mat density and air voids are 100% or higher. The lot pay factor shall be the product of the two values when only one of the calculations for either mat density or air voids is 100% or higher. The lot pay factor shall be the lower of the two values when calculations for both mat density and air voids are less than 100%. If PWL for joint density is less than 71% then the lot pay factor shall be reduced by 5% but be no higher than 95%.

For each lot accepted, the adjusted contract unit price shall be the product of the lot pay factor for the lot and the contract unit price. Payment shall be subject to the total project payment limitation specified in paragraph 401-8.1a. Payment in excess of 100% for accepted lots of asphalt shall be used to offset payment for accepted lots of asphalt pavement that achieve a lot pay factor less than 100%.

Payment for sublots which do not meet grade in accordance with paragraph 401-6.2d after correction for over 25% of the sublot shall be reduced by 5%.

Table 6. Price adjustment schedule[1]

Percentage of material within specification limits (PWL)	Lot pay factor (percent of contract unit price)
96 – 100	106
90 – 95	PWL + 10
75 – 89	0.5 PWL + 55
55 – 74	1.4 PWL – 12
Below 55	Reject [2]

[1] Although it is theoretically possible to achieve a pay factor of 106% for each lot, actual payment above 100% shall be subject to the total project payment limitation specified in paragraph 401-8.1a.

[2] The lot shall be removed and replaced. However, the RPR may decide to allow the rejected lot to remain. In that case, if the RPR and Contractor agree in writing that the lot shall not be removed, it shall be paid for at 50% of the contract unit price and the total project payment shall be reduced by the amount withheld for the rejected lot.

d. Profilograph Roughness. The Contractor will receive full payment when the profilograph average profile index is in accordance with paragraph 401-6.2e. When the final average profile index for the entire length of pavement does not exceed 15 inches per mile per 1/10 mile, payment will be made at the contract unit price for the completed pavement.

401-8.1 Payment.

Payment will be made under:

No. 14, Spec No. P-401-8.1 Taxiway Asphalt Surface Course (4-Inch Depth, PG 70-22) – per Square Yard

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM International (ASTM)

ASTM C29 Standard Test Method for Bulk Density ("Unit Weight") and Voids in Aggregate

ASTM C88 Standard Test Method for Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate

ASTM C117 Standard Test Method for Materials Finer than 75-µm (No. 200) Sieve in Mineral Aggregates by Washing

ASTM C127	Standard Test Method for Density, Relative Density (Specific Gravity) and Absorption of Coarse Aggregate
ASTM C131	Standard Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
ASTM C136	Standard Test Method for Sieve or Screen Analysis of Fine and Coarse Aggregates
ASTM C142	Standard Test Method for Clay Lumps and Friable Particles in Aggregates
ASTM C566	Standard Test Method for Total Evaporable Moisture Content of Aggregate by Drying
ASTM D75	Standard Practice for Sampling Aggregates
ASTM D242	Standard Specification for Mineral Filler for Bituminous Paving Mixtures
ASTM D946	Standard Specification for Penetration-Graded Asphalt Cement for Use in Pavement Construction
ASTM D979	Standard Practice for Sampling Asphalt Paving Mixtures
ASTM D1073	Standard Specification for Fine Aggregate for Asphalt Paving Mixtures
ASTM D1188	Standard Test Method for Bulk Specific Gravity and Density of Compacted Bituminous Mixtures Using Coated Samples
ASTM D2172	Standard Test Method for Quantitative Extraction of Bitumen from Asphalt Paving Mixtures
ASTM D1461	Standard Test Method for Moisture or Volatile Distillates in Asphalt Paving Mixtures
ASTM D2041	Standard Test Method for Theoretical Maximum Specific Gravity and Density of Bituminous Paving Mixtures
ASTM D2419	Standard Test Method for Sand Equivalent Value of Soils and Fine Aggregate
ASTM D2489	Standard Practice for Estimating Degree of Particle Coating of Bituminous-Aggregate Mixtures
ASTM D2726	Standard Test Method for Bulk Specific Gravity and Density of Non-Absorptive Compacted Bituminous Mixtures
ASTM D2950	Standard Test Method for Density of Bituminous Concrete in Place by Nuclear Methods
ASTM D3203	Standard Test Method for Percent Air Voids in Compacted Dense and Open Bituminous Paving Mixtures
ASTM D3381	Standard Specification for Viscosity-Graded Asphalt Cement for Use in Pavement Construction
ASTM D3665	Standard Practice for Random Sampling of Construction Materials
ASTM D3666	Standard Specification for Minimum Requirements for Agencies Testing and Inspecting Road and Paving Materials

ASTM D4318	Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils
ASTM D4552	Standard Practice for Classifying Hot-Mix Recycling Agents
ASTM D4791	Standard Test Method for Flat Particles, Elongated Particles, or Flat and Elongated Particles in Coarse Aggregate
ASTM D4867	Standard Test Method for Effect of Moisture on Asphalt Concrete Paving Mixtures
ASTM D5361	Standard Practice for Sampling Compacted Asphalt Mixtures for Laboratory Testing
ASTM D5444	Standard Test Method for Mechanical Size Analysis of Extracted Aggregate
ASTM D5821	Standard Test Method for Determining the Percentage of Fractured Particles in Coarse Aggregate
ASTM D6084	Standard Test Method for Elastic Recovery of Bituminous Materials by Ductilometer
ASTM D6307	Standard Test Method for Asphalt Content of Hot Mix Asphalt by Ignition Method
ASTM D6373	Standard Specification for Performance Graded Asphalt Binder
ASTM D6752	Standard Test Method for Bulk Specific Gravity and Density of Compacted Bituminous Mixtures Using Automatic Vacuum Sealing Method
ASTM D6925	Standard Test Method for Preparation and Determination of the Relative Density of Hot Mix Asphalt (HMA) Specimens by Means of the SuperPave Gyratory Compactor.
ASTM D6926	Standard Practice for Preparation of Bituminous Specimens Using Marshall Apparatus
ASTM D6927	Standard Test Method for Marshall Stability and Flow of Bituminous Mixtures
ASTM D6995	Standard Test Method for Determining Field VMA based on the Maximum Specific Gravity of the Mix (Gmm)
ASTM E11	Standard Specification for Woven Wire Test Sieve Cloth and Test Sieves
ASTM E178	Standard Practice for Dealing with Outlying Observations
ASTM E1274	Standard Test Method for Measuring Pavement Roughness Using a Profilograph
ASTM E950	Standard Test Method for Measuring the Longitudinal Profile of Traveled Surfaces with an Accelerometer Established Inertial Profiling Reference
ASTM E2133	Standard Test Method for Using a Rolling Inclinometer to Measure Longitudinal and Transverse Profiles of a Traveled Surface

American Association of State Highway and Transportation Officials (AASHTO)

AASHTO M156	Standard Specification for Requirements for Mixing Plants for Hot-Mixed, Hot-Laid Bituminous Paving Mixtures.

AASHTO T329	Standard Method of Test for Moisture Content of Hot Mix Asphalt (HMA) by Oven Method
AASHTO T324	Standard Method of Test for Hamburg Wheel-Track Testing of Compacted Asphalt Mixtures
AASHTO T 340	Standard Method of Test for Determining the Rutting Susceptibility of Hot Mix Asphalt (APA) Using the Asphalt Pavement Analyzer (APA)

Asphalt Institute (AI)

Asphalt Institute Handbook MS-26, Asphalt Binder

Asphalt Institute MS-2, Mix Design Manual, 7th Edition

AI State Binder Specification Database

Federal Highway Administration (FHWA)

Long Term Pavement Performance Binder Program

Advisory Circulars (AC)

AC 150/5320-6	Airport Pavement Design and Evaluation

FAA Orders

5300.1	Modifications to Agency Airport Design, Construction, and Equipment Standards

Software

FAARFIELD

END OF ITEM P-401

Item P-403 Asphalt Mix Pavement Surface Course

DESCRIPTION

403-1.1 This item shall consist of pavement courses composed of mineral aggregate and asphalt binder mixed in a central mixing plant and placed on a prepared course in accordance with these specifications and shall conform to the lines, grades, thicknesses, and typical cross-sections shown on the plans. Each course shall be constructed to the depth, typical section, and elevation required by the plans and shall be rolled, finished, and approved before the placement of the next course.

MATERIALS

403-2.1 Aggregate. Aggregates shall consist of crushed stone, crushed gravel, crushed slag, screenings, natural sand and mineral filler, as required. The aggregates should have no known history of detrimental pavement staining due to ferrous sulfides, such as pyrite. Coarse aggregate is the material retained on the No. 4 sieve. Fine aggregate is the material passing the No. 4 sieve.

a. Coarse aggregate. Coarse aggregate shall consist of sound, tough, durable particles, free from films of matter that would prevent thorough coating and bonding with the asphalt material and free from organic matter and other deleterious substances. Coarse aggregate material requirements are given in the table below.

Coarse Aggregate Material Requirements

Material Test	Requirement	Standard
Resistance to Degradation	Loss: 40% maximum	ASTM C131
Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate	Loss after 5 cycles: 12% maximum using Sodium sulfate - or - 18% maximum using magnesium sulfate	ASTM C88
Clay lumps and friable particles	1.0% maximum	ASTM C142
Percentage of Fractured Particles	Minimum 50% by weight of particles with at least two fractured faces and 65% with at least one fractured face[1]	ASTM D5821
Flat, Elongated, or Flat and Elongated Particles	8% maximum, by weight, of flat, elongated, or flat and elongated particles with a value of 5:1[2]	ASTM D4791

[1] The area of each face shall be equal to at least 75% of the smallest mid-sectional area of the piece. When two fractured faces are contiguous, the angle between the planes of fractures shall be at least 30 degrees to count as two fractured faces.

[2] A flat particle is one having a ratio of width to thickness greater than five (5); an elongated particle is one having a ratio of length to width greater than five (5).

b. Fine aggregate. Fine aggregate shall consist of clean, sound, tough, durable, angular shaped particles produced by crushing stone, slag, or gravel and shall be free from coatings of clay, silt, or other objectionable matter. Natural (non-manufactured) sand may be used to obtain the gradation of the aggregate blend or to improve the workability of the mix. Fine aggregate material requirements are listed in the table below.

Fine Aggregate Material Requirements

Material Test	Requirement	Standard
Liquid limit	25 maximum	ASTM D4318
Plasticity Index	4 maximum	ASTM D4318
Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate	Loss after 5 cycles: 10% maximum using Sodium sulfate - or - 15% maximum using magnesium sulfate	ASTM C88
Clay lumps and friable particles	1.0% maximum	ASTM C142
Sand equivalent	45 minimum	ASTM D2419

c. Sampling. ASTM D75 shall be used in sampling coarse and fine aggregate, and ASTM C183 shall be used in sampling mineral filler.

403-2.2 Mineral filler. Mineral filler (baghouse fines) may be added in addition to material naturally present in the aggregate. Mineral filler shall meet the requirements of ASTM D242.

Mineral filler Requirements

Material Test	Requirement	Standard
Plasticity Index	4 maximum	ASTM D4318

403-2.3 Asphalt binder. Asphalt binder shall conform to ASTM D6373 Performance Grade (PG) 70-22.

Asphalt Binder PG Plus Test Requirements

Material Test	Requirement	Standard
Elastic Recovery	75% minimum	ASTM D6084[1]

[1] Follow procedure B on RTFO aged binder.

403-2.4 Anti-stripping agent. Any anti-stripping agent or additive (anti-strip) shall be heat stable and shall not change the asphalt binder grade beyond specifications. Anti-strip shall be an approved material of the Department of Transportation of the State in which the project is located.

COMPOSITION

403-3.1 Composition of mixture. The asphalt plant mix shall be composed of a mixture of well-graded aggregate, filler and anti-strip agent if required, and asphalt binder. The several aggregate fractions shall be sized, handled in separate size groups, and combined in such proportions that the resulting mixture meets the grading requirements of the job mix formula (JMF).

403-3.2 Job mix formula (JMF) laboratory. The laboratory used to develop the JMF shall possess a current certificate of accreditation, listing D3666 from a national accrediting authority and all test methods required for developing the JMF, and listed on the accrediting authority's website. A copy of the laboratory's current accreditation and accredited test methods shall be submitted to the RPR prior to start of construction.

403-3.3 Job mix formula (JMF). No asphalt mixture shall be placed until an acceptable mix design has been submitted to the RPR for review and accepted in writing. The RPR's review shall not relieve the Contractor of the responsibility to select and proportion the materials to comply with this section.

When the project requires asphalt mixtures of differing aggregate gradations and/or binders, a separate JMF shall be submitted for each mix. Add anti-stripping agent to meet tensile strength requirements. The JMF shall be prepared by an accredited laboratory that meets the requirements of paragraph 403-3.2. The asphalt mixture shall be designed using procedures contained in Asphalt Institute MS-2 Mix Design Manual, 7th Edition. Samples shall be prepared and compacted using a Marshall compactor in accordance with ASTM D6926 and using the gyratory compactor in accordance with ASTM D6925.

Should a change in sources of materials be made, a new JMF must be submitted to the RPR for review and accepted in writing before the new material is used. After the initial production JMF has been approved by the RPR and a new or modified JMF is required for whatever reason, the subsequent cost of the new or modified JMF, including a new control strip when required by the RPR, will be borne by the Contractor. The RPR may request samples at any time for testing, prior to and during production, to verify the quality of the materials and to ensure conformance with the applicable specifications.

The JMF shall be submitted in writing by the Contractor at least 30 days prior to the start of paving operations. The JMF shall be developed within the same construction season using aggregates proposed for project use.

The submitted JMF shall be dated, and stamped or sealed by the responsible professional Engineer of the laboratory and shall include the following items as a minimum:

- Manufacturer's Certificate of Analysis (COA) for the asphalt binder used in the JMF in accordance with paragraph 403-2.3. Certificate of asphalt performance grade is with modifier already added, if used and must indicate compliance with ASTM D6373. For plant modified asphalt binder, certified test report indicating grade certification of modified asphalt binder.
- Manufacturer's Certificate of Analysis (COA) for the anti-stripping agent if used in the JMF in accordance with paragraph 403-2.4.
- Certified material test reports for the course and fine aggregate and mineral filler in accordance with paragraphs 403-2.1 and 403-2.2.

- Percent passing each sieve size for individual gradation of each aggregate cold feed and/or hot bin; percent by weight of each cold feed and/or hot bin used; and the total combined gradation in the JMF.
- Specific Gravity and absorption of each course and fine aggregate.
- Percent fractured faces.
- Percent by weight of flat particles, elongated particles, and flat and elongated particles (and criteria).
- Percent of asphalt.
- Number of blows or gyrations.
- Laboratory mixing and compaction temperatures.
- Supplier recommended mixing and compaction temperatures.
- Plot of the combined gradation on the 0.45 power gradation curve.
- Graphical plots of air voids, voids in the mineral aggregate (VMA), and unit weight versus asphalt content. To achieve minimum VMA during production, the mix design needs to account for material breakdown during production.
- Tensile Strength Ratio (TSR).
- Type and amount of Anti-strip agent when used.
- Asphalt Pavement Analyzer (APA) results.
- Date the JMF was developed. Mix designs that are not dated or which are from a prior construction season shall not be accepted.

Table 1. Asphalt Design Criteria

Test Property	Value	Test Method
Number of blows/gyrations	50	ASTM D6926
Air voids (%)	3.5	ASTM D3203
Percent voids in mineral aggregate (VMA), minimum	See Table 2	ASTM D6995
TSR1	not less than 80 at a saturation of 70-80%	ASTM D4867
Asphalt Pavement Analyzer (APA)2.3	Less than 10 mm @ 4000 passes	AASHTO T340 at 250 psi hose pressure at 64°C test temperature

[1] Test specimens for TSR shall be compacted at 7 ± 1.0 % air voids. In areas subject to freeze-thaw, use freeze-thaw conditioning in lieu of moisture conditioning per ASTM D4867.

[2] AASHTO T340 at 100 psi hose pressure at 64°C test temperature may be used in the interim. If this method is used the required Value shall be less than 5 mm @ 8000 passes

[3] Where APA is not available, use Hamburg wheel test (AASHTO T 324) 10mm @ 20,000 passes at 50° C.

The mineral aggregate shall be of such size that the percentage composition by weight, as determined by laboratory sieves, will conform to the gradation or gradations specified in Table 2 when tested in accordance with ASTM C136 and ASTM C117.

The gradations in Table 2 represent the limits that shall determine the suitability of aggregate for use from the sources of supply, be well graded from coarse to fine and shall not vary from the low limit on one sieve to the high limit on the adjacent sieve, or vice versa.

Table 2. Aggregate - Asphalt Pavements

Sieve Size	Percentage by Weight Passing Sieve
1 inch	--
3/4 inch	100
1/2 inch	90-100
3/8 inch	72-88
No. 4	53-73
No. 8	38-60
No. 16	26-48
No. 30	18-38
No. 50	11-27
No. 100	6-18
No. 200	3-6
Voids in Mineral Aggregate (VMA)[1]	15.0
Asphalt Percent:	
Stone or gravel	5.0-7.5
Slag	6.5-9.5
Recommended Minimum Construction Lift Thickness	2 inch

[1] To achieve minimum VMA during production, the mix design needs to account for material breakdown during production.

The aggregate gradations shown are based on aggregates of uniform specific gravity. The percentages passing the various sieves shall be corrected when aggregates of varying specific gravities are used, as indicated in the Asphalt Institute MS-2 Mix Design Manual, 7th Edition.

403-3.4 Reclaimed Asphalt Pavement (RAP). RAP shall not be used.

403-3.5 Control strip. A control strip is not required.

CONSTRUCTION METHODS

403-4.1 Weather limitations. The asphalt shall not be placed upon a wet surface or when the surface temperature of the underlying course is less than specified in Table 4. The temperature requirements may be waived by the RPR, if requested; however, all other requirements including compaction shall be met.

Table 4. Surface Temperature Limitations of Underlying Course

Mat Thickness	Base Temperature (Minimum)
3 inches or greater	40°F
Greater than 2 inches but less than 3 inches	45°F

403-4.2 Asphalt plant. Plants used for the preparation of asphalt shall conform to the requirements of American Association of State Highway and Transportation Officials (AASHTO) M156 including the following items:

a. Inspection of plant. The RPR, or RPR's authorized representative, shall have access, at all times, to all areas of the plant for checking adequacy of equipment; inspecting operation of the plant: verifying weights, proportions, and material properties; and checking the temperatures maintained in the preparation of the mixtures.

b. Storage bins and surge bins. The asphalt mixture stored in storage and/or surge bins shall meet the same requirements as asphalt mixture loaded directly into trucks. Asphalt mixture shall not be stored in storage and/or surge bins for a period greater than twelve (12) hours. If the RPR determines there is an excessive heat loss, segregation or oxidation of the asphalt mixture due to temporary storage, temporary storage shall not be allowed.

403-4.3 Aggregate stockpile management. Aggregate stockpiles shall be constructed in such a manner that prevents segregation and intermixing of deleterious materials. Aggregates from different sources shall be stockpiled, weighed and batched separately at the concrete batch plant. Aggregates that have become segregated or mixed with earth or foreign material shall not be used.

A continuous supply of materials shall be provided to the work to ensure continuous placement.

403-4.4 Hauling equipment. Trucks used for hauling asphalt shall have tight, clean, and smooth metal beds. To prevent the asphalt from sticking to the truck beds, the truck beds shall be lightly coated with a minimum amount of paraffin oil, lime solution, or other material approved by the RPR. Petroleum products shall not be used for coating truck beds. Each truck shall have a suitable cover to protect the mixture from adverse weather. When necessary, to ensure that the mixture will be delivered to the site at the specified temperature, truck beds shall be insulated or heated and covers shall be securely fastened.

403-4.4.1 Material transfer vehicle (MTV). A material transfer vehicle is not required.

403-4.5 Asphalt pavers. Asphalt pavers shall be self-propelled with an activated heated screed, capable of spreading and finishing courses of asphalt that will meet the specified thickness, smoothness, and grade. The paver shall have sufficient power to propel itself and the hauling equipment without adversely affecting the finished surface. The asphalt paver shall be equipped with a control system capable of automatically maintaining the specified screed grade and elevation.

If the spreading and finishing equipment in use leaves tracks or indented areas, or produces other blemishes in the pavement that are not satisfactorily corrected by the scheduled operations, the use of such equipment shall be discontinued.

The paver shall be capable of paving to a minimum width specified in paragraph 401-4.11.

403-4.6 Rollers. The number, type, and weight of rollers shall be sufficient to compact the asphalt to the required density while it is still in a workable condition without crushing of the aggregate, depressions or other damage to the pavement surface. Rollers shall be in good condition, capable of operating at slow speeds to avoid displacement of the asphalt. All rollers shall be specifically designed and suitable for compacting asphalt concrete and shall be properly used. Rollers that impair the stability of any layer of a pavement structure or underlying soils shall not be used.

403-4.6.1 Density device. The Contractor shall have on site a density gauge during all paving operations in order to assist in the determination of the optimum rolling pattern, type of roller and frequencies, as well as to monitor the effect of the rolling operations during production paving. The Contractor shall also supply a qualified technician during all paving operations to calibrate the density gauge and obtain accurate density readings for all new asphalt. These densities shall be supplied to the RPR upon request at any time during construction. No separate payment will be made for supplying the density gauge and technician.

403-4.7 Preparation of asphalt binder. The asphalt binder shall be heated in a manner that will avoid local overheating and provide a continuous supply of the asphalt material to the mixer at a uniform temperature. The temperature of the unmodified asphalt binder delivered to the mixer shall be sufficient to provide a suitable viscosity for adequate coating of the aggregate particles, but shall not exceed 325°F when added to the aggregate. The temperature of modified asphalt binder shall be no more than 350°F when added to the aggregate.

403-4.8 Preparation of mineral aggregate. The aggregate for the asphalt shall be heated and dried. The maximum temperature and rate of heating shall be such that no damage occurs to the aggregates. The temperature of the aggregate and mineral filler shall not exceed 350°F when the asphalt binder is added. Particular care shall be taken that aggregates high in calcium or magnesium content are not damaged by overheating. The temperature shall not be lower than is required to obtain complete coating and uniform distribution on the aggregate particles and to provide a mixture of satisfactory workability.

403-4.9 Preparation of asphalt mixture. The aggregates and the asphalt binder shall be weighed or metered and introduced into the mixer in the amount specified by the JMF. The combined materials shall be mixed until the aggregate obtains a uniform coating of asphalt binder and is thoroughly distributed throughout the mixture. Wet mixing time shall be the shortest time that will produce a satisfactory mixture, but not less than 25 seconds for batch plants. The wet mixing time for all plants shall be established by the

Contractor, based on the procedure for determining the percentage of coated particles described in ASTM D2489, for each individual plant and for each type of aggregate used. The wet mixing time will be set to achieve 95% of coated particles. For continuous mix plants, the minimum mixing time shall be determined by dividing the weight of its contents at operating level by the weight of the mixture delivered per second by the mixer. The moisture content of all asphalt upon discharge shall not exceed 0.5%.

403-4.10 Application of Prime and Tack Coat. Immediately before placing the asphalt mixture, the underlying course shall be cleaned of all dust and debris.

A tack coat shall be applied in accordance with Item P-603 to all vertical and horizontal asphalt and concrete surfaces prior to placement of the first and each subsequent lift of asphalt mixture.

403-4.11 Laydown plan, transporting, placing, and finishing. Prior to the placement of the asphalt, the Contractor shall prepare a laydown plan with the sequence of paving lanes and width to minimize the number of cold joints; the location of any temporary ramps; laydown temperature; and estimated time of completion for each portion of the work (milling, paving, rolling, cooling, etc.). The laydown plan and any modifications shall be approved by the RPR.

Deliveries shall be scheduled so that placing and compacting of asphalt is uniform with minimum stopping and starting of the paver. Hauling over freshly placed material shall not be permitted until the material has been compacted, as specified, and allowed to cool to approximately ambient temperature. The Contractor, at their expense, shall be responsible for repair of any damage to the pavement caused by hauling operations.

Contractor shall survey each lift of asphalt surface course and certify to RPR that every lot of each lift meets the grade tolerances of paragraph 401-6.2e before the next lift can be placed.

Edges of existing asphalt pavement abutting the new work shall be saw cut and the cut off material and laitance removed. Apply a tack coat in accordance with P-603 before new asphalt material is placed against it.

The speed of the paver shall be regulated to eliminate pulling and tearing of the asphalt mat. Placement of the asphalt mix shall begin along the centerline of a crowned section or on the high side of areas with a one way slope unless shown otherwise on the laydown plan as accepted by the RPR. The asphalt mix shall be placed in consecutive adjacent lanes having a minimum width of 12 feet except where edge lanes require less width to complete the area. Additional screed sections attached to widen the paver to meet the minimum lane width requirements must include additional auger sections to move the asphalt mixture uniformly along the screed extension.

The longitudinal joint in one course shall offset the longitudinal joint in the course immediately below by at least 1 foot; however, the joint in the surface top course shall be at the centerline of crowned pavements. Transverse joints in one course shall be offset by at least 10 feet from transverse joints in the previous course. Transverse joints in adjacent lanes shall be offset a minimum of 10 feet. On areas where irregularities or unavoidable obstacles make the use of mechanical spreading and finishing equipment impractical, the asphalt may be spread and luted by hand tools.

The RPR may at any time, reject any batch of asphalt, on the truck or placed in the mat, which is rendered unfit for use due to contamination, segregation, incomplete coating of aggregate, or overheated asphalt mixture. Such rejection may be based on only visual inspection or temperature measurements. In the event of such rejection, the Contractor may take a representative sample of the rejected material in the presence of the RPR, and if it can be demonstrated in the laboratory, in the presence of the RPR, that such material was erroneously rejected, payment will be made for the material at the contract unit price.

Areas of segregation in the surface course, as determined by the RPR, shall be removed and replaced at the Contractor's expense. The area shall be removed by saw cutting and milling a minimum of the construction lift thickness as specified in paragraph 401-3.3, Table 2 for the approved mix design. The area to be removed and replaced shall be a minimum width of the paver and a minimum of 10 feet long.

403-4.12 Compaction of asphalt mixture. After placing, the asphalt mixture shall be thoroughly and uniformly compacted by self-propelled rollers. The surface shall be compacted as soon as possible when the asphalt has attained sufficient stability so that the rolling does not cause undue displacement, cracking or shoving. The sequence of rolling operations and the type of rollers used shall be at the discretion of the Contractor. The speed of the roller shall, at all times, be sufficiently slow to avoid displacement of the hot mixture and be effective in compaction. Any surface defects and/or displacement occurring as a result of the roller, or from any other cause, shall be corrected at the Contractor's expense.

Sufficient rollers shall be furnished to handle the output of the plant. Rolling shall continue until the surface is of uniform texture, true to grade and cross-section, and the required field density is obtained. To prevent adhesion of the asphalt to the roller, the wheels shall be equipped with a scraper and kept moistened with water as necessary.

In areas not accessible to the roller, the mixture shall be thoroughly compacted with approved power tampers.

Any asphalt that becomes loose and broken, mixed with dirt, contains check-cracking, or in any way defective shall be removed and replaced with fresh hot mixture and immediately compacted to conform to the surrounding area. This work shall be done at the Contractor's expense. Skin patching shall not be allowed.

403-4.13 Joints. The formation of all joints shall be made in such a manner as to ensure a continuous bond between the courses and obtain the required density. All joints shall have the same texture as other sections of the course and meet the requirements for smoothness and grade.

The roller shall not pass over the unprotected end of the freshly laid asphalt except when necessary to form a transverse joint. When necessary to form a transverse joint, it shall be made by means of placing a bulkhead or by tapering the course. The tapered edge shall be cut back to its full depth and width on a straight line to expose a vertical face prior to placing the adjacent lane. In both methods, all contact surfaces shall be coated with an asphalt tack coat before placing any fresh asphalt against the joint.

Longitudinal joints which are have been left exposed for more than four (4) hours; the surface temperature has cooled to less than 175°F; or are irregular, damaged, uncompacted or otherwise defective shall be cut back with a cutting wheel or pavement saw a maximum of 3 inches to expose a clean, sound, uniform vertical surface for the full depth of the course. All cutback material and any laitance produced from cutting joints shall be removed from the project. An asphalt tack coat or other product approved by the RPR shall be applied to the clean, dry joint prior to placing any additional fresh asphalt against the joint. The cost of this work shall be considered incidental to the cost of the asphalt.

403-4.14 Saw-cut grooving. Saw-cut grooving is not required.

403-4.15 Diamond grinding. Diamond grinding shall be completed prior to pavement grooving. Diamond grinding shall be accomplished by sawing with saw blades impregnated with industrial diamond abrasive.

Diamond grinding shall be performed with a machine designed specifically for diamond grinding capable of cutting a path at least 3 feet wide. The saw blades shall be 1/8-inch wide with a minimum of 55 to 60 blades per 12 inches of cutting head width; grooves between 0.090 and 0.130 inches wide; and peaks and ridges approximately 1/32 inch higher than the bottom of the grinding cut. The actual number of blades will be determined by the Contractor and depend on the hardness of the aggregate. Equipment or grinding procedures that causes ravels, aggregate fractures, spalls or disturbance to the pavement will not be permitted.

Grinding will be tapered in all directions to provide smooth transitions to areas not requiring grinding. The slurry resulting from the grinding operation shall be continuously removed and the pavement left in a clean condition. The Contractor shall apply a surface treatment per P-608 to all areas that have been subject to grinding.

403-4.16 Nighttime Paving Requirements. The Contractor shall provide adequate lighting during any nighttime construction. A lighting plan shall be submitted by the Contractor and approved by the RPR prior to the start of any nighttime work. All work shall be in accordance with the approved CSPP and lighting plan.

CONTRACTOR QUALITY CONTROL (CQC)

403-5.1 General. The Contractor shall develop a CQCP in accordance with Item C-100. No partial payment will be made for materials that are subject to specific QC requirements without an approved CQCP.

403-5.2 Contractor quality control (QC) facilities. The Contractor shall provide or contract for testing facilities in accordance with Item C-100. The RPR shall be permitted unrestricted access to inspect the Contractor's QC facilities and witness QC activities. The RPR will advise the Contractor in writing of any noted deficiencies concerning the QC facility, equipment, supplies, or testing personnel and procedures. When the deficiencies are serious enough to be adversely affecting the test results, the incorporation of the materials into the work shall be suspended immediately and will not be permitted to resume until the deficiencies are satisfactorily corrected.

403-5.3 Quality Control (QC) testing. The Contractor shall perform all QC tests necessary to control the production and construction processes applicable to these specifications and as set forth in the approved CQCP. The testing program shall include, but not necessarily be limited to, tests for the control of asphalt content, aggregate gradation, temperatures, aggregate moisture, field compaction, and surface smoothness. A QC Testing Plan shall be developed as part of the CQCP.

a. Asphalt content. A minimum of two tests shall be performed per day in accordance with ASTM D6307 or ASTM D2172 for determination of asphalt content. When using ASTM D6307, the correction factor shall be determined as part of the first test performed at the beginning of plant production; and as part of every tenth test performed thereafter. The asphalt content for the day will be determined by averaging the test results.

b. Gradation. Aggregate gradations shall be determined a minimum of twice per lot from mechanical analysis of extracted aggregate in accordance with ASTM D5444 and ASTM C136, and ASTM C117.

c. Moisture content of aggregate. The moisture content of aggregate used for production shall be determined a minimum of once per lot in accordance with ASTM C566.

d. Moisture content of asphalt. The moisture content of the asphalt shall be determined once per lot in accordance with AASHTO T329 or ASTM D1461.

e. Temperatures. Temperatures shall be checked, at least four times per lot, at necessary locations to determine the temperatures of the dryer, the asphalt binder in the storage tank, the asphalt at the plant, and the asphalt at the job site.

f. In-place density monitoring. The Contractor shall conduct any necessary testing to ensure that the specified density is being achieved. A nuclear gauge may be used to monitor the pavement density in accordance with ASTM D2950.

g. Smoothness for Contractor Quality Control. The Contractor shall perform smoothness testing in transverse and longitudinal directions daily to verify that the construction processes are producing pavement with variances less than ¼ inch in 12 feet, identifying areas that may pond water which could lead to hydroplaning of aircraft. If the smoothness criteria is not met, appropriate changes and corrections to the construction process shall be made by the Contractor before construction continues.

The Contractor may use a 12-foot straightedge, a rolling inclinometer meeting the requirements of ASTM E2133 or rolling external reference device that can simulate a 12-foot straightedge approved by the RPR. Straight-edge testing shall start with one-half the length of the straightedge at the edge of pavement section being tested and then moved ahead one-half the length of the straightedge for each successive measurement. Testing shall be continuous across all joints. The surface irregularity shall be determined by placing the freestanding (unleveled) straightedge on the pavement surface and allowing it to rest upon the two highest spots covered by its length, and measuring the maximum gap between the straightedge and the pavement surface in the area between the two high points. If the rolling inclinometer or external reference device is used, the data may be evaluated using the FAA profile program, ProFAA, using the 12-foot straightedge simulation function.

Smoothness readings shall not be made across grade changes or cross slope transitions. The transition between new and existing pavement shall be evaluated separately for conformance with the plans.

(1) Transverse measurements. Transverse measurements shall be taken for each day's production placed. Transverse measurements will be taken perpendicular to the pavement centerline each 50 feet (15 m) or more often as determined by the RPR. The joint between lanes shall be tested separately to facilitate smoothness between lanes.

(2) Longitudinal measurements. Longitudinal measurements shall be taken for each day's production placed. Longitudinal tests will be parallel to the centerline of paving; at the center of paving lanes when widths of paving lanes are less than 20 feet; and at the third points of paving lanes when widths of paving lanes are 20 ft or greater. When placement abuts previously placed material the first measurement shall start with one half the length of the straight edge on the previously placed material.

Deviations on the final surface course in either the transverse or longitudinal direction that will trap water greater than 1/4 inch shall be corrected with diamond grinding per paragraph 403-4.15 or by removing and replacing the surface course to full depth. Grinding shall be tapered in all directions to provide smooth transitions to areas not requiring grinding. All areas in which diamond grinding has been performed shall be subject to the final pavement thickness tolerances specified in paragraph 401-6.1d(3) Areas that have been ground shall be sealed with a surface treatment in accordance with Item P-608. To avoid the surface treatment creating any conflict with runway or taxiway markings, it may be necessary to seal a larger area.

Control charts shall be kept to show area of each day's placement and the percentage of corrective grinding required. Corrections to production and placement shall be initiated when corrective grinding is required. If the Contractor's machines and/or methods produce significant areas that need corrective actions in excess of 10 percent of a day's production, production shall be stopped until corrective measures are implemented by the Contractor.

h. Grade. Grade shall be evaluated daily to allow adjustments to paving operations when grade measurements do not meet specifications. As a minimum, grade shall be evaluated prior to the placement of the first lift and then prior to and after placement of the surface lift.

Measurements will be taken at appropriate gradelines (as a minimum at center and edges of paving lane) and longitudinal spacing as shown on cross-sections and plans. The final surface of the pavement will not vary from the gradeline elevations and cross-sections shown on the plans by more than 1/2 inch (12 mm) vertically and 0.1 feet laterally. The documentation will be provided by the Contractor to the RPR by the end of the following working day.

Areas with humps or depressions that exceed grade or smoothness criteria and that retain water on the surface must be ground off provided the course thickness after grinding is not more than 1/2 inch (12 mm) less than the thickness specified on the plans. Grinding shall be in accordance with paragraph 403-4.15. The Contractor shall repair low areas or areas that cannot be corrected by grinding by removal of deficient areas to the depth of the final course plus ½ inch and replacing with new material. Skin patching is not allowed.

403-5.4 Sampling. When directed by the RPR, the Contractor shall sample and test any material that appears inconsistent with similar material being sampled, unless such material is voluntarily removed and replaced or deficiencies corrected by the Contractor. All sampling shall be in accordance with standard procedures specified.

403-5.5 Control charts. The Contractor shall maintain linear control charts both for individual measurements and range (i.e., difference between highest and lowest measurements) for aggregate gradation, asphalt content, and VMA. The VMA for each day shall be calculated and monitored by the QC laboratory.

Control charts shall be posted in a location satisfactory to the RPR and kept current. As a minimum, the control charts shall identify the project number, the contract item number, the test number, each test parameter, the Action and Suspension Limits applicable to each test parameter, and the Contractor's test results. The Contractor shall use the control charts as part of a process control system for identifying potential problems and assignable causes before they occur. If the Contractor's projected data during production indicates a problem and the Contractor is not taking satisfactory corrective action, the RPR may suspend production or acceptance of the material.

a. Individual measurements. Control charts for individual measurements shall be established to maintain process control within tolerance for aggregate gradation, asphalt content, and VMA. The control charts shall use the JMF target values as indicators of central tendency for the following test parameters with associated Action and Suspension Limits:

Control Chart Limits for Individual Measurements

Sieve	Action Limit	Suspension Limit
3/4 inch	±6%	±9%
1/2 inch	±6%	±9%
3/8 inch	±6%	±9%
No. 4	±6%	±9%
No. 16	±5%	±7.5%
No. 50	±3%	±4.5%
No. 200	±2%	±3%
Asphalt Content	±0.45%	±0.70%
Minimum VMA	-0.5%	-1.0%

b. Range. Control charts for range shall be established to control process variability for the test parameters and Suspension Limits listed below. The range shall be computed for each lot as the difference between the two test results for each control parameter. The Suspension Limits specified below are based on a sample size of n = 2. Should the Contractor elect to perform more than two tests per lot, the Suspension Limits shall be adjusted by multiplying the Suspension Limit by 1.18 for n = 3 and by 1.27 for n = 4.

Control Chart Limits Based on Range
(n = 2)

Sieve	Suspension Limit
1/2 inch	11%
3/8 inch	11%
No. 4	11%
No. 16	9%
No. 50	6%
No. 200	3.5%
Asphalt Content	0.8%

c. Corrective action. The CQCP shall indicate that appropriate action shall be taken when the process is believed to be out of tolerance. The Plan shall contain sets of rules to gauge when a process is out of control and detail what action will be taken to bring the process into control. As a minimum, a process shall be deemed out of control and production stopped and corrective action taken, if:

(1) One point falls outside the Suspension Limit line for individual measurements or range; or

(2) Two points in a row fall outside the Action Limit line for individual measurements.

403-5.6 Quality control (QC) reports. The Contractor shall maintain records and shall submit reports of QC activities daily, in accordance with the CQCP described in Item C-100.

MATERIAL ACCEPTANCE

403-6.1. Quality Assurance Acceptance sampling and testing. Unless otherwise specified, all acceptance sampling and testing necessary to determine conformance with the requirements specified in this section will be performed by the RPR at no cost to the Contractor except that coring as required in this section shall be completed and paid for by the Contractor.

a. Quality Assurance (QA) testing laboratory. The QA testing laboratory performing these acceptance tests will be accredited in accordance with ASTM D3666. The QA laboratory accreditation will be current and listed on the accrediting authority's website. All test methods required for acceptance sampling and testing will be listed on the lab accreditation.

b. Lot Size. A standard lot will be equal to one day's production divided into approximately equal sublots of between 400 to 600 tons. When only one or two sublots are produced in a day's production, the sublots will be combined with the production lot from the previous or next day.

Where more than one plant is simultaneously producing asphalt for the job, the lot sizes will apply separately for each plant.

c. Asphalt air voids. Plant-produced asphalt will be tested for air voids on a sublot basis.

(1) Sampling. Material from each sublot shall be sampled in accordance with ASTM D3665. Samples shall be taken from material deposited into trucks at the plant or at the job site in accordance with ASTM D979. The sample of asphalt may be put in a covered metal tin and placed in an oven for not less than 30 minutes nor more than 60 minutes to maintain the material at or above the compaction temperature as specified in the JMF.

(2) Testing. Air voids will be determined for each sublot in accordance with ASTM D3203 for a set of compacted specimens prepared in accordance with ASTM D6926 and ASTM D6925.

d. In-place asphalt mat and joint density. Each sublot will be tested for in-place mat and joint density as a percentage of the theoretical maximum density (TMD).

(1) Sampling. The Contractor will cut minimum 5 inches diameter samples in accordance with ASTM D5361. The Contractor shall furnish all tools, labor, and materials for cleaning, and filling the cored pavement. Laitance produced by the coring operation shall be removed immediately after coring, and core holes shall be filled within one day after sampling in a manner acceptable to the RPR.

(2) Bond. Each lift of asphalt shall be bonded to the underlying layer. If cores reveal that the surface is not bonded, additional cores shall be taken as directed by the RPR to determine the extent of unbonded areas. Unbonded areas shall be removed by milling and replaced at no additional cost as directed by the RPR.

(3) Thickness. Thickness of each lift of surface course will be evaluated by the RPR for compliance to the requirements shown on the plans after any necessary corrections for grade. Measurements of thickness will be made using the cores extracted for each sublot for density measurement. The maximum allowable deficiency at any point will not be more than 1/4 inch (6 mm) less than the thickness indicated for the lift. Average thickness of lift, or combined lifts, will not be less than the indicated thickness. Where the thickness tolerances are not met, the lot or sublot shall be corrected by the Contractor at his expense by removing the deficient area and replacing with new pavement. The Contractor, at his expense, may take additional cores as approved by the RPR to circumscribe the deficient area.

(4) Mat density. One core shall be taken from each sublot. Core locations will be determined by the RPR in accordance with ASTM D3665. Cores for mat density shall not be taken closer than one foot from a transverse or longitudinal joint. The bulk specific gravity of each cored sample will be determined in accordance with ASTM D2726. The percent compaction (density) of each sample will be determined by dividing the bulk specific gravity of each sublot sample by the TMD for that sublot.

(5) Joint density. One core centered over the longitudinal joint shall be taken for each sublot which contains a longitudinal joint. Core locations will be determined by the RPR in accordance with ASTM D3665. The bulk specific gravity of each core sample will be determined in accordance with ASTM D2726. The percent compaction (density) of each sample will be determined by dividing the bulk specific gravity of each joint density sample by the average TMD for the lot. The TMD used to determine the joint density at joints formed between lots will be the lower of the average TMD values from the adjacent lots.

403-6.2 Acceptance criteria.

a. General. Acceptance will be based on the implementation of the Contractor Quality Control Program (CQCP) and the following characteristics of the asphalt and completed pavements: air voids, mat density, joint density, grade and Profilograph smoothness.

b. Air voids. Acceptance of each lot of plant produced material for air voids will be based upon the average air void from the sublots. If the average air voids of the lot are equal to or greater than 2% and equal to or less than 5%, then the lot will be acceptable. If the average is below 2% or greater than 5%, the lot shall be removed and replaced at the Contractor's expense.

c. Mat density. Acceptance of each lot of plant produced material for mat density will be based on the average of all of the densities taken from the sublots. If the average mat density of the lot so established equals or exceeds 94%, the lot will be acceptable. If the average mat density of the lot is below 94%, the lot shall be removed and replaced at the Contractor's expense.

d. Joint density. Acceptance of each lot of plant produced asphalt for joint density will be based on the average of all of the joint densities taken from the sublots. If the average joint density of the lot so established equals or exceeds 92%, the lot will be acceptable. If the average joint density of the lot is less than 92%, the Contractor shall stop production and evaluate the method of compacting joints. Production may resume once the reason for poor compaction has been determined and appropriate measures have been taken to ensure proper compaction.

e. Grade. The final finished surface of the pavement of the completed project shall be surveyed to verify that the grade elevations and cross-sections shown on the plans do not deviate more than 1/2 inch vertically or 0.1 feet laterally.

Cross-sections of the pavement shall be taken at a minimum 50-foot longitudinal spacing and at all longitudinal grade breaks. Minimum cross-section grade points shall include grade at centerline, ± 10 feet of centerline, and edge of taxiway pavement.

The survey and documentation shall be stamped and signed by a licensed surveyor. Payment for sublots that do not meet grade for over 25% of the sublot shall not be more than 95%.

f. Profilograph roughness for QA Acceptance. The final profilograph shall be the full length of the project to facilitate testing of roughness between lots. The Contractor, in the presence of the RPR shall perform a profilograph roughness test on the completed project with a profilograph meeting the requirements of ASTM E1274 or a Class I inertial profiler meeting ASTM E950. Data and results shall be provided within 48 hours of profilograph roughness tests.

The pavement shall have an average profile index less than 15 inches per mile per 1/10 mile. The equipment shall utilize electronic recording and automatic computerized reduction of data to indicate "must grind" bumps and the Profile Index for the pavement using a 0.2-inch blanking band. The bump template must span one inch with an offset of 0.4 inches. The profilograph must be calibrated prior to use and operated by a factory or State DOT approved, trained operator. Profilograms shall be recorded on a longitudinal scale of one inch equals 25 feet and a vertical scale of one inch equals one inch. Profilograph shall be performed one foot right and left of project centerline and 15 feet right and left of project centerline. Any areas that indicate "must grind" shall be corrected with diamond grinding per paragraph 401-4.15 or by removing and replacing full depth of surface course. as directed by the RPR. Where corrections are

necessary, a second profilograph run shall be performed to verify that the corrections produced an average profile index of 15 inches per mile per 1/10 mile or less.

403-6.3 Resampling Pavement for Mat Density.

a. General. Resampling of a lot of pavement will only be allowed for mat density and then, only if the Contractor requests same in writing, within 48 hours after receiving the written test results from the RPR. A retest will consist of all the sampling and testing procedures contained in paragraphs 403-6.1. Only one resampling per lot will be permitted.

(1) A redefined mat density will be calculated for the resampled lot. The number of tests used to calculate the redefined mat density will include the initial tests made for that lot plus the retests.

(2) The cost for resampling and retesting shall be borne by the Contractor.

b. Payment for resampled lots. The redefined mat density for a resampled lot will be used to evaluate the acceptance of that lot in accordance with paragraph 403-6.2.

c. Outliers. Check for outliers in accordance with ASTM E178, at a significance level of 5%. Outliers will be discarded and density determined using the remaining test values.

METHOD OF MEASUREMENT

403-7.1 Measurement. Plant mix asphalt mix pavement shall be measured by the number of square yards of asphalt pavement used in the accepted work for the depth specified in the plans.

BASIS OF PAYMENT

403-8.1 Payment. Payment for a lot of asphalt mixture meeting all acceptance criteria as specified in paragraph 403-6.2 shall be made at the contract unit price per square yard for asphalt. The price shall be compensation for furnishing all materials, for all preparation, mixing, and placing of these materials, and for all labor, equipment, tools, and incidentals necessary to complete the item.

Payment will be made under:

No. 15, Spec No. P-403-8.1	Shoulder Asphalt Surface Course (3-Inch Depth, PG 70-2) – per Square Yard

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM International (ASTM)

ASTM C29	Standard Test Method for Bulk Density ("Unit Weight") and Voids in Aggregate
ASTM C88	Standard Test Method for Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate
ASTM C117	Standard Test Method for Materials Finer than 75-µm (No. 200) Sieve in Mineral Aggregates by Washing
ASTM C127	Standard Test Method for Density, Relative Density (Specific Gravity), and Absorption of Coarse Aggregate
ASTM C131	Standard Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
ASTM C136	Standard Test Method for Sieve or Screen Analysis of Fine and Coarse Aggregates
ASTM C142	Standard Test Method for Clay Lumps and Friable Particles in Aggregates
ASTM C183	Standard Practice for Sampling and the Amount of Testing of Hydraulic Cement
ASTM C566	Standard Test Method for Total Evaporable Moisture Content of Aggregate by Drying
ASTM D75	Standard Practice for Sampling Aggregates
ASTM D242	Standard Specification for Mineral Filler for Bituminous Paving Mixtures
ASTM D946	Standard Specification for Penetration-Graded Asphalt Cement for Use in Pavement Construction
ASTM D979	Standard Practice for Sampling Bituminous Paving Mixtures
ASTM D1073	Standard Specification for Fine Aggregate for Bituminous Paving Mixtures
ASTM D1074	Standard Test Method for Compressive Strength of Bituminous Mixtures
ASTM D1461	Standard Test Method for Moisture or Volatile Distillates in Bituminous Paving Mixtures

ASTM D2041	Standard Test Method for Theoretical Maximum Specific Gravity and Density of Bituminous Paving Mixtures
ASTM D2172	Standard Test Method for Quantitative Extraction of Bitumen from Bituminous Paving Mixtures
ASTM D2419	Standard Test Method for Sand Equivalent Value of Soils and Fine Aggregate
ASTM D2489	Standard Practice for Estimating Degree of Particle Coating of Bituminous-Aggregate Mixtures
ASTM D2726	Standard Test Method for Bulk Specific Gravity and Density of Non-Absorptive Compacted Bituminous Mixtures
ASTM D2950	Standard Test Method for Density of Bituminous Concrete in Place by Nuclear Methods
ASTM D3203	Standard Test Method for Percent Air Voids in Compacted Dense and Open Bituminous Paving Mixtures
ASTM D3381	Standard Specification for Viscosity-Graded Asphalt Cement for Use in Pavement Construction
ASTM D3665	Standard Practice for Random Sampling of Construction Materials
ASTM D3666	Standard Specification for Minimum Requirements for Agencies Testing and Inspecting Road and Paving Materials
ASTM D4125	Standard Test Methods for Asphalt Content of Bituminous mixtures by the Nuclear Method
ASTM D4318	Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils
ASTM D4552	Standard Practice for Classifying Hot-Mix Recycling Agents
ASTM D4791	Standard Test Method for Flat Particles, Elongated Particles, or Flat and Elongated Particles in Coarse Aggregate
ASTM D4867	Standard Test Method for Effect of Moisture on Asphalt Concrete Paving Mixtures
ASTM D5444	Standard Test Method for Mechanical Size Analysis of Extracted Aggregate
ASTM D5581	Standard Test Method for Resistance to Plastic Flow of Bituminous Mixtures Using Marshall Apparatus (6 inch-Diameter Specimen)

ASTM D5821	Standard Test Method for Determining the Percentage of Fractured Particles in Coarse Aggregate
ASTM D6307	Standard Test Method for Asphalt Content of Hot-Mix Asphalt by Ignition Method
ASTM D6373	Standard Specification for Performance Graded Asphalt Binder
ASTM D6752	Standard Test Method for Bulk Specific Gravity and Density of Compacted Bituminous Mixtures Using Automatic Vacuum Sealing Method
ASTM D6925	Standard Test Method for Preparation and Determination of the Relative Density of Hot Mix Asphalt (HMA) Specimens by Means of the SuperPave Gyratory Compactor
ASTM D6926	Standard Practice for Preparation of Bituminous Specimens Using Marshall Apparatus
ASTM D6927	Standard Test Method for Marshall Stability and Flow of Bituminous Mixtures
ASTM D6995	Standard Test Method for Determining Field VMA based on the Maximum Specific Gravity of the Mix (Gmm)
ASTM E11	Standard Specification for Woven Wire Test Sieve Cloth and Test Sieves
ASTM E178	Standard Practice for Dealing with Outlying Observations
ASTM E2133	Standard Test Method for Using a Rolling Inclinometer to Measure Longitudinal and Transverse Profiles of a Traveled Surface

American Association of State Highway and Transportation Officials (AASHTO)

AASHTO M156	Standard Specification for Requirements for Mixing Plants for Hot-Mixed, Hot-Laid Bituminous Paving Mixtures
AASHTO T329	Standard Method of Test for Moisture Content of Hot Mix Asphalt (HMA) by Oven Method
AASHTO T 340	Standard Method of Test for Determining the Rutting Susceptibility of Hot Mix Asphalt (APA) Using the Asphalt Pavement Analyzer (APA)

Asphalt Institute (AI)

MS-2 Mix Design Manual, 7th Edition

MS-26 Asphalt Binder Handbook

AI State Binder Specification Database

FAA Orders

5300.1 Modifications to Agency Airport Design, Construction, and Equipment Standards

Federal Highway Administration (FHWA)

Long Term Pavement Performance Binder program

Software

FAARFIELD

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Item P-610 Concrete for Miscellaneous Structures

DESCRIPTION

610-1.1 This item shall consist of concrete and reinforcement, as shown on the plans, prepared and constructed in accordance with these specifications. This specification shall be used for all concrete other than airfield pavement which are cast-in-place.

MATERIALS

610-2.1 General. Only approved materials, conforming to the requirements of these specifications, shall be used in the work. Materials may be subject to inspection and tests at any time during their preparation or use. The source of all materials shall be approved by the Resident Project Representative (RPR) before delivery or use in the work. Representative preliminary samples of the materials shall be submitted by the Contractor, when required, for examination and test. Materials shall be stored and handled to ensure preservation of their quality and fitness for use and shall be located to facilitate prompt inspection. All equipment for handling and transporting materials and concrete must be clean before any material or concrete is placed in them.

The use of pit-run aggregates shall not be permitted unless the pit-run aggregate has been screened and washed, and all fine and coarse aggregates stored separately and kept clean. The mixing of different aggregates from different sources in one storage stockpile or alternating batches of different aggregates shall not be permitted.

a. Reactivity. Fine aggregate and coarse aggregates to be used in all concrete shall have been tested separately within six months of the project in accordance with ASTM C1260. Test results shall be submitted to the RPR. The aggregate shall be considered innocuous if the expansion of test specimens, tested in accordance with ASTM C1260, does not exceed 0.08% at 14 days (16 days from casting). If the expansion either or both test specimen is greater than 0.08% at 14 days, but less than 0.20%, a minimum of 25% of Type F fly ash, or between 40% and 55% of slag cement shall be used in the concrete mix. If expansion of either the coarse or fine aggregate exceeds 0.08% at 14 days, limit the alkali of the concrete to be less than or equal to 3.0 lb per cubic yard, calculated in accordance with EB 106.

If the expansion is greater than 0.20% the aggregates shall not be used, and test results for other aggregates must be submitted for evaluation; aggregates that meet P-501 reactivity test requirements may be utilized.

610-2.2 Coarse aggregate. The coarse aggregate for concrete shall meet the requirements of ASTM C33 and the requirements of Table 4, Class Designation 5S; and the grading requirements shown below, as required for the project.

Coarse Aggregate Grading Requirements

Maximum Aggregate Size	ASTM C33, Table 3 Grading Requirements (Size No.)
1 1/2 inch	467 or 4 and 67
1 inch	57
3/4 inch	67
1/2 inch	7

610-2.2.1 Coarse Aggregate susceptibility to durability (D) cracking. Not used.

610-2.3 Fine aggregate. The fine aggregate for concrete shall meet all fine aggregate requirements of ASTM C33.

610-2.4 Cement. Cement: ASTM C150, Types I or II.

610-2.5 Cementitious materials.

a. Fly ash. Fly ash shall meet the requirements of ASTM C618, with the exception of loss of ignition, where the maximum shall be less than 6%. Fly ash shall have a Calcium Oxide (CaO) content of less than 15% and a total available alkali content less than 3% per ASTM C311. Fly ash produced in furnace operations using liming materials or soda ash (sodium carbonate) as an additive shall not be acceptable. The Contractor shall furnish the previous three most recent, consecutive ASTM C618 reports for each source of fly ash proposed in the concrete mix, and shall furnish each additional report as they become available during the project. The reports can be used for acceptance or the material may be tested independently by the RPR.

b. Slag cement (Ground Granulated Blast Furnace (GGBF)). Slag cement shall conform to ASTM C989, Grade 100 or Grade 120. Slag cement shall be used only at a rate between 25% and 55% of the total cementitious material by mass.

610-2.6 Water. Water used in mixing or curing shall be from potable water sources. Other sources shall be tested in accordance with ASTM C1602 prior to use.

610-2.7 Admixtures. The Contractor shall submit certificates indicating that the material to be furnished meets all of the requirements indicated below. In addition, the RPR may require the Contractor to submit complete test data from an approved laboratory showing that the material to be furnished meets all of the requirements of the cited specifications. Subsequent tests may be made of samples taken by the RPR from the supply of the material being furnished or proposed for use on the work to determine whether the admixture is uniform in quality with that approved.

a. Air-entraining admixtures. Air-entraining admixtures shall meet the requirements of ASTM C260 and shall consistently entrain the air content in the specified ranges under field conditions. The air-entrainment agent and any water reducer admixture shall be compatible.

b. Water-reducing admixtures. Water-reducing admixture shall meet the requirements of ASTM C494, Type A, B, or D. ASTM C494, Type F and G high range water reducing admixtures and ASTM C1017 flowable admixtures shall not be used.

c. Other chemical admixtures. The use of set retarding, and set-accelerating admixtures shall be approved by the RPR. Retarding shall meet the requirements of ASTM C494, Type A, B, or D and set-accelerating shall meet the requirements of ASTM C494, Type C. Calcium chloride and admixtures containing calcium chloride shall not be used.

610-2.8 Premolded joint material. Premolded joint material for expansion joints shall meet the requirements of ASTM D1751.

610-2.9 Joint filler. The filler for joints shall meet the requirements of Item P-605, unless otherwise specified.

610-2.10 Steel reinforcement. Reinforcing shall consist of reinforcing steel, welded steel wire fabric, or welded deformed steel fabric conforming to the requirements of ASTM A615, ASTM A706, ASTM A775, ASTM A934, ASTM A1064, or ASTM A884.

610-2.11 Materials for curing concrete. Curing materials shall consist of white-pigmented Liquid Membrane-Forming Compound, Type 2, Class B conforming to the requirements of ASTM C309.

CONSTRUCTION METHODS

610-3.1 General. The Contractor shall furnish all labor, materials, and services necessary for, and incidental to, the completion of all work as shown on the drawings and specified here. All machinery and equipment used by the Contractor on the work, shall be of sufficient size to meet the requirements of the work. All work shall be subject to the inspection and approval of the RPR.

610-3.2 Concrete Mixture. The concrete shall develop a compressive strength of 4,000 psi in 28 days as determined by test cylinders made in accordance with ASTM C31 and tested in accordance with ASTM C39. The concrete shall contain not less than 470 pounds of cementitious material per cubic yard. The water cementitious ratio shall not exceed 0.45 by weight. The air content of the concrete shall be 5% ±1.2% as determined by ASTM C231 and shall have a slump of not more than 4 inches as determined by ASTM C143.

610-3.3 Mixing. Concrete may be mixed at the construction site, at a central point, or wholly or in part in truck mixers. The concrete shall be mixed and delivered in accordance with the requirements of ASTM C94 or ASTM C685.

The concrete shall be mixed only in quantities required for immediate use. Concrete shall not be mixed while the air temperature is below 40°F without the RPRs approval. If approval is granted for mixing under such conditions, aggregates or water, or both, shall be heated and the concrete shall be placed at a temperature not less than 50°F nor more than 100°F. The Contractor shall be held responsible for any defective work, resulting from freezing or injury in any manner during placing and curing, and shall replace such work at his expense.

Retempering of concrete by adding water or any other material is not permitted.

The rate of delivery of concrete to the job shall be sufficient to allow uninterrupted placement of the concrete.

610-3.4 Forms. Concrete shall not be placed until all the forms and reinforcements have been inspected and approved by the RPR. Forms shall be of suitable material and shall be of the type, size, shape, quality, and strength to build the structure as shown on the plans. The forms shall be true to line and grade and shall be mortar-tight and sufficiently rigid to prevent displacement and sagging between supports. The surfaces of forms shall be smooth and free from irregularities, dents, sags, and holes. The Contractor shall be responsible for their adequacy.

The internal form ties shall be arranged so no metal will show in the concrete surface or discolor the surface when exposed to weathering when the forms are removed. All forms shall be wetted with water or with a non-staining mineral oil, which shall be applied immediately before the concrete is placed. Forms shall be constructed so they can be removed without injuring the concrete or concrete surface.

610-3.5 Placing reinforcement. All reinforcement shall be accurately placed, as shown on the plans, and shall be firmly held in position during concrete placement. Bars shall be fastened together at intersections. The reinforcement shall be supported by approved metal chairs. Shop drawings, lists, and bending details shall be supplied by the Contractor when required.

610-3.6 Embedded items. Before placing concrete, all embedded items shall be firmly and securely fastened in place as indicated. All embedded items shall be clean and free from coating, rust, scale, oil, or any foreign matter. The concrete shall be spaded and consolidated around and against embedded items. The embedding of wood shall not be allowed.

610-3.7 Concrete Consistency. The Contractor shall monitor the consistency of the concrete delivered to the project site; collect each batch ticket; check temperature; and perform slump tests on each truck at the project site in accordance with ASTM C143.

610-3.8 Placing concrete. All concrete shall be placed during daylight hours, unless otherwise approved. The concrete shall not be placed until the depth and condition of foundations, the adequacy of forms and falsework, and the placing of the steel reinforcing have been approved by the RPR. Concrete shall be placed as soon as practical after mixing, but in no case later than one (1) hour after water has been added to the mix. The method and manner of placing shall avoid segregation and displacement of the reinforcement. Troughs, pipes, and chutes shall be used as an aid in placing concrete when necessary. The concrete shall not be dropped from a height of more than 5 feet. Concrete shall be deposited as nearly as practical in its final position to avoid segregation due to rehandling or flowing. Do not subject concrete to procedures which cause segregation. Concrete shall be placed on clean, damp surfaces, free from running water, or on a properly consolidated soil foundation.

610-3.9 Vibration. Vibration shall follow the guidelines in American Concrete Institute (ACI) Committee 309R, Guide for Consolidation of Concrete.

610-3.10 Joints. Joints shall be constructed as indicated on the plans.

610-3.11 Finishing. All exposed concrete surfaces shall be true, smooth, and free from open or rough areas, depressions, or projections. All concrete horizontal plane surfaces shall be brought flush to the proper elevation with the finished top surface struck-off with a straightedge and floated.

610-3.12 Curing and protection. All concrete shall be properly cured in accordance with the recommendations in American Concrete Institute (ACI) 308R, Guide to External Curing of Concrete. The concrete shall be protected from damage until project acceptance.

610-3.13 Cold weather placing. When concrete is placed at temperatures below 40°F, follow the cold weather concreting recommendations found in ACI 306R, Cold Weather Concreting.

610-3.14 Hot weather placing. When concrete is placed in hot weather greater than 85°F, follow the hot weather concreting recommendations found in ACI 305R, Hot Weather Concreting.

QUALITY ASSURANCE

610-4.1 Quality Assurance sampling and testing. Concrete for each day's placement will be accepted on the basis of the compressive strength specified in paragraph 610-3.2. The RPR will sample the concrete in accordance with ASTM C172; test the slump in accordance with ASTM C143; test air content in accordance with ASTM C231; make and cure compressive strength specimens in accordance with ASTM C31; and test in accordance with ASTM C39. The QA testing agency will meet the requirements of ASTM C1077.

The Contractor shall provide adequate facilities for the initial curing of cylinders.

610-4.2 Defective work. Any defective work that cannot be satisfactorily repaired as determined by the RPR, shall be removed and replaced at the Contractor's expense. Defective work includes, but is not limited to, uneven dimensions, honeycombing and other voids on the surface or edges of the concrete.

METHOD OF MEASUREMENT

610-5.1 Concrete shall be considered incidental and no separate measurement shall be made.

BASIS OF PAYMENT

610-6.1 Concrete shall be considered incidental and no separate payment shall be made.

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM International (ASTM)

ASTM A184	Standard Specification for Welded Deformed Steel Bar Mats for Concrete Reinforcement

ASTM A615	Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement
ASTM A704	Standard Specification for Welded Steel Plain Bar or Rod Mats for Concrete Reinforcement
ASTM A706	Standard Specification for Low-Alloy Steel Deformed and Plain Bars for Concrete Reinforcement
ASTM A775	Standard Specification for Epoxy-Coated Steel Reinforcing Bars
ASTM A884	Standard Specification for Epoxy-Coated Steel Wire and Welded Wire Reinforcement
ASTM A934	Standard Specification for Epoxy-Coated Prefabricated Steel Reinforcing Bars
ASTM A1064	Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete
ASTM C31	Standard Practice for Making and Curing Concrete Test Specimens in the Field
ASTM C33	Standard Specification for Concrete Aggregates
ASTM C39	Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens
ASTM C94	Standard Specification for Ready-Mixed Concrete
ASTM C136	Standard Test Method for Sieve or Screen Analysis of Fine and Coarse Aggregates
ASTM C114	Standard Test Methods for Chemical Analysis of Hydraulic Cement
ASTM C136	Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates
ASTM C143	Standard Test Method for Slump of Hydraulic-Cement Concrete
ASTM C150	Standard Specification for Portland Cement
ASTM C171	Standard Specification for Sheet Materials for Curing Concrete
ASTM C172	Standard Practice for Sampling Freshly Mixed Concrete
ASTM C231	Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method
ASTM C260	Standard Specification for Air-Entraining Admixtures for Concrete
ASTM C309	Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete
ASTM C311	Standard Test Methods for Sampling and Testing Fly Ash or Natural Pozzolans for Use in Portland-Cement Concrete
ASTM C494	Standard Specification for Chemical Admixtures for Concrete
ASTM C618	Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete
ASTM C666	Standard Test Method for Resistance of Concrete to Rapid Freezing and Thawing
ASTM C685	Standard Specification for Concrete Made by Volumetric Batching and Continuous Mixing

ASTM C989	Standard Specification for Slag Cement for Use in Concrete and Mortars
ASTM C1017	Standard Specification for Chemical Admixtures for Use in Producing Flowing Concrete
ASTM C1077	Standard Practice for Agencies Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Testing Agency Evaluation
ASTM C1157	Standard Performance Specification for Hydraulic Cement
ASTM C1260	Standard Test Method for Potential Alkali Reactivity of Aggregates (Mortar-Bar Method)
ASTM C1365	Standard Test Method for Determination of the Proportion of Phases in Portland Cement and Portland-Cement Clinker Using X-Ray Powder Diffraction Analysis
ASTM C1602	Standard Specification for Mixing Water Used in the Production of Hydraulic Cement Concrete
ASTM D1751	Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Asphalt Types)
ASTM D1752	Standard Specification for Preformed Sponge Rubber Cork and Recycled PVC Expansion Joint Fillers for Concrete Paving and Structural Construction

American Concrete Institute (ACI)

ACI 305R	Hot Weather Concreting
ACI 306R	Cold Weather Concreting
ACI 308R	Guide to External Curing of Concrete
ACI 309R	Guide for Consolidation of Concrete

END OF ITEM P-610

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Item P-620 Runway and Taxiway Marking

DESCRIPTION

620-1.1 This item shall consist of the preparation and painting of numbers, markings, and stripes on the surface of runways, taxiways, and aprons, in accordance with these specifications and at the locations shown on the plans, or as directed by the Resident Project Representative (RPR). The terms "paint" and "marking material" as well as "painting" and "application of markings" are interchangeable throughout this specification.

MATERIALS

620-2.1 Materials acceptance. The Contractor shall furnish manufacturer's certified test reports, for materials shipped to the project. The certified test reports shall include a statement that the materials meet the specification requirements. This certification along with a copy of the paint manufacturer's surface preparation; marking materials, including adhesion, flow promoting and/or floatation additive; and application requirements must be submitted and approved by the Resident Project Representative (RPR) prior to the initial application of markings. The reports can be used for material acceptance or the RPR may perform verification testing. The reports shall not be interpreted as a basis for payment. The Contractor shall notify the RPR upon arrival of a shipment of materials to the site. All material shall arrive in sealed containers that are easily quantifiable for inspection by the RPR.

620-2.2 Marking materials.

Table 1. Marking Materials

Paint[1]				Glass Beads[2]	
Type	Color	Fed Std. 595 Number	Application Rate Maximum	Type	Application Rate Minimum
Temporary – II	Yellow	33538	230 ft^2/gal	None	None
II	Yellow	33538	115 ft^2/gal	III	10 lb/gal
II	Black	37038	115 ft^2/gal	None	None

[1] See paragraph 620-2.2a

[2] See paragraph 620-2.2b

a. Paint. Paint shall be waterborne in accordance with the requirements of this paragraph. Paint colors shall comply with Federal Standard No. 595. Paint shall meet the requirements of Federal Specification TT-P-1952F, Type II. The non-volatile portion of the vehicle for all paint types shall be composed of a 100% acrylic polymer as determined by infrared spectral analysis.

b. Reflective media. Glass beads for white and yellow paint shall meet the requirements for Federal Specification TT-B-1325D Type III. Glass beads for red and pink paint shall meet the requirements for Type I, Gradation A.

Glass beads shall be treated with all compatible coupling agents recommended by the manufacturers of the paint and reflective media to ensure adhesion and embedment.

Glass beads shall not be used in black and green paint.

Type III glass beads shall not be used in red and pink paint.

CONSTRUCTION METHODS

620-3.1 Weather limitations. Painting shall only be performed when the surface is dry, and the ambient temperature and the pavement surface temperature meet the manufacturer's recommendations in accordance with paragraph 620-2.1. Painting operations shall be discontinued when the ambient or surface temperatures does not meet the manufacturer's recommendations. Markings shall not be applied when the wind speed exceeds 10 mph unless windscreens are used to shroud the material guns. Markings shall not be applied when weather conditions are forecasts to not be within the manufacturers' recommendations for application and dry time.

620-3.2 Equipment. Equipment shall include the apparatus necessary to properly clean the existing surface, a mechanical marking machine, a bead dispensing machine, and such auxiliary hand-painting equipment as may be necessary to satisfactorily complete the job.

The mechanical marker shall be an atomizing spray-type or airless type marking machine with automatic glass bead dispensers suitable for application of traffic paint. It shall produce an even and uniform film thickness and appearance of both paint and glass beads at the required coverage and shall apply markings of uniform cross-sections and clear-cut edges without running or spattering and without over spray. The marking equipment for both paint and beads shall be calibrated daily.

620-3.3 Preparation of surfaces. Immediately before application of the paint, the surface shall be dry and free from dirt, grease, oil, laitance, or other contaminates that would reduce the bond between the paint and the pavement. Use of any chemicals or impact abrasives during surface preparation shall be approved in advance by the RPR. After the cleaning operations, sweeping, blowing, or rinsing with pressurized water shall be performed to ensure the surface is clean and free of grit or other debris left from the cleaning process.

a. Preparation of new pavement surfaces. The area to be painted shall be cleaned by broom, blower, water blasting, or by other methods approved by the RPR to remove all contaminants, including PCC curing compounds, minimizing damage to the pavement surface.

b. Preparation of pavement to remove existing markings. Existing pavement markings shall be removed by rotary grinding, water blasting, or by other methods approved by the RPR minimizing damage to the pavement surface. The removal area may need to be larger than the area of the markings to eliminate ghost markings. After removal of markings on asphalt pavements, apply a seal coat shall extend 1' on all sides of the removal area. Seal coat to 'block out' the removal area to eliminate 'ghost' markings.

c. Preparation of pavement markings prior to remarking. Prior to remarking existing markings, loose existing markings must be removed minimizing damage to the pavement surface, with a method approved by the RPR. After removal, the surface shall be cleaned of all residue or debris.

Prior to the application of markings, the Contractor shall certify in writing that the surface is dry and free from dirt, grease, oil, laitance, or other foreign material that would prevent the bond of the paint to the pavement or existing markings. This certification along with a copy of the paint manufactures application and surface preparation requirements must be submitted to the RPR prior to the initial application of markings.

620-3.4 Layout of markings. The proposed markings shall be laid out in advance of the paint application. The locations of markings to receive glass beads shall be shown on the plans.

620-3.5 Application. A period of 30 days shall elapse between placement of surface course or seal coat and application of the permanent paint markings. Paint shall be applied at the locations and to the dimensions and spacing shown on the plans. Paint shall not be applied until the layout and condition of the surface has been approved by the RPR.

The edges of the markings shall not vary from a straight line more than 1/2 inch in 50 feet, and marking dimensions and spacing shall be within the following tolerances:

Marking Dimensions and Spacing Tolerance

Dimension and Spacing	Tolerance
36 inch or less	±1/2 inch
greater than 36 inch to 6 feet	±1 inch
greater than 6 feet to 60 feet	±2 inch
greater than 60 feet	±3 inch

The paint shall be mixed in accordance with the manufacturer's instructions and applied to the pavement with a marking machine at the rate shown in Table 1. The addition of thinner will not be permitted.

Glass beads shall be distributed upon the marked areas at the locations shown on the plans to receive glass beads immediately after application of the paint. A dispenser shall be furnished that is properly designed for attachment to the marking machine and suitable for dispensing glass beads. Glass beads shall be applied at the rate shown in Table 1. Glass beads shall not be applied to black paint or green paint. Glass beads shall adhere to the cured paint or all marking operations shall cease until corrections are made. Different bead types shall not be mixed. Regular monitoring of glass bead embedment and distribution should be performed.

620-3.6 Application--preformed thermoplastic airport pavement markings. Preformed thermoplastic pavement markings not used.

620-3.7 Control strip. Prior to the full application of airfield markings, the Contractor shall prepare a control strip in the presence of the RPR. The Contractor shall demonstrate the surface preparation method and all striping equipment to be used on the project. The marking equipment must achieve the prescribed application rate of paint and population of glass beads (per Table 1) that are properly embedded and evenly distributed across the full width of the marking. Prior to acceptance of the control strip, markings must be evaluated during darkness to ensure a uniform appearance.

620-3.8 Retro-reflectance. Not used.

620-3.9 Protection and cleanup. After application of the markings, all markings shall be protected from damage until dry. All surfaces shall be protected from excess moisture and/or rain and from disfiguration by spatter, splashes, spillage, or drippings. The Contractor shall remove from the work area all debris, waste, loose reflective media, and by-products generated by the surface preparation and application operations to the satisfaction of the RPR. The Contractor shall dispose of these wastes in strict compliance with all applicable state, local, and federal environmental statutes and regulations.

METHOD OF MEASUREMENT

620-4.1 The quantity of surface preparation shall be measured by the number of square feet for each type of surface preparation specified in paragraph 620-3.3. Seal Coat per Item P-608 shall be incidental to this item.

620-4.2 The quantity of markings shall be paid for shall be measured by the number of square feet of painting. Reflective media and black paint shall be incidental to this item.

620-4.3 Reflective media shall not be measured. This shall be considered incidental to the placement of permanent pavement markings.

620-4.4 Black paint required for outlining surface markings with black borders shall not be measured. This shall be considered incidental to the placement of permanent pavement markings.

620-4.5 Temporary markings placed prior to re-opening a pavement section for aircraft operations within the 30-day window between paving operations and the placement of permanent markings shall be measured by the number of square feet of painting performed in accordance with the specifications and accepted by the RPR. Temporary markings placed for the purpose of taxiway closures and detours during the phases of the project shall not be measured. Temporary marking includes surface preparation, application and complete removal of the temporary marking.

BASIS OF PAYMENT

620-5.1 This price shall be full compensation for furnishing all materials and for all labor, equipment, tools, and incidentals necessary to complete the item complete in place and accepted by the RPR in accordance with these specifications.

620-5.2 Payment for surface preparation shall be made at the contract price for the number of square feet for each type of surface preparation specified in paragraph 620-3.3. Seal Coat per Item P-608 shall be incidental to this item.

620-5.3 Payment for markings shall be made at the contract price by the number of square feet of painting. Reflective media and black paint shall be incidental to this item.

620-5.4 Payment for temporary markings shall be made at the contract price for the number of square feet of painting. This price shall be full compensation for furnishing all materials and for all labor, equipment, tools, and incidentals necessary to complete the item.

Payment will be made under:

No. 16, Spec No. P-620-5.1	Obliterate & Seal Pavement Markings – per Square Foot
No. 17, Spec No. P-620-5.2	Temporary Pavement Marking – per Square Foot
No. 18, Spec No. P-620-5.3	Permanent Pavement Marking – per Square Foot

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM International (ASTM)

ASTM D476	Standard Classification for Dry Pigmentary Titanium Dioxide Products
ASTM D968	Standard Test Methods for Abrasion Resistance of Organic Coatings by Falling Abrasive
ASTM D1652	Standard Test Method for Epoxy Content of Epoxy Resins
ASTM D2074	Standard Test Method for Total, Primary, Secondary, and Tertiary Amine Values of Fatty Amines by Alternative Indicator Method
ASTM D2240	Standard Test Method for Rubber Property - Durometer Hardness
ASTM D7585	Standard Practice for Evaluating Retroreflective Pavement Markings Using Portable Hand-Operated Instruments
ASTM E303	Standard Test Method for Measuring Surface Frictional Properties Using the British Pendulum Tester
ASTM E1710	Standard Test Method for Measurement of Retroreflective Pavement Marking Materials with CEN-Prescribed Geometry Using a Portable Retroreflectometer
ASTM E2302	Standard Test Method for Measurement of the Luminance Coefficient Under Diffuse Illumination of Pavement Marking Materials Using a Portable Reflectometer
ASTM G154	Standard Practice for Operating Fluorescent Ultraviolet (UV) Lamp Apparatus for Exposure of Nonmetallic Materials

Code of Federal Regulations (CFR)

40 CFR Part 60, Appendix A-7, Method 24

Determination of volatile matter content, water content, density, volume solids, and weight solids of surface coatings

29 CFR Part 1910.1200 Hazard Communication

Federal Specifications (FED SPEC)

FED SPEC TT-B-1325D Beads (Glass Spheres) Retro-Reflective

FED SPEC TT-P-1952F Paint, Traffic and Airfield Marking, Waterborne

FED STD 595 Colors used in Government Procurement

Commercial Item Description

A-A-2886B Paint, Traffic, Solvent Based

Advisory Circulars (AC)

AC 150/5340-1 Standards for Airport Markings

AC 150/5320-12 Measurement, Construction, and Maintenance of Skid Resistant Airport Pavement Surfaces

END OF ITEM P-620

Item T-901 Seeding

DESCRIPTION

901-1.1 This item shall consist of soil preparation, seeding, fertilizing and hydromulching the areas shown on the plans or as directed by the RPR in accordance with these specifications.

MATERIALS

901-2.1 Seed. The species and application rates of grass, legume, and cover-crop seed furnished shall be those stipulated herein. Seed shall conform to the requirements of Federal Specification JJJ-S-181, Federal Specification, Seeds, Agricultural.

Seed shall be furnished separately or in mixtures in standard containers labeled in conformance with the Agricultural Marketing Service (AMS) Seed Act and applicable state seed laws with the seed name, lot number, net weight, percentages of purity and of germination and hard seed, and percentage of maximum weed seed content clearly marked for each kind of seed. The Contractor shall furnish the RPR duplicate signed copies of a statement by the vendor certifying that each lot of seed has been tested by a recognized laboratory for seed testing within six (6) months of date of delivery. This statement shall include: name and address of laboratory, date of test, lot number for each kind of seed, and the results of tests as to name, percentages of purity and of germination, and percentage of weed content for each kind of seed furnished, and, in case of a mixture, the proportions of each kind of seed. Wet, moldy, or otherwise damaged seed will be rejected.

Seeds shall be applied as follows:

Seed Properties and Rate of Application

Botanical Name	Common Name	Rate of Application lb/acre
Aristida purpurea	Purple three awn	3.0
Bouteloua aristidoides	Needle grama	2.0
Bouteloua barbata	Six weeks grama	1.0
Bouteloua rothrockii	Rothrocks grama	1.0
Plantago insularis	Indian wheat	5.0
Senna couesii	Desert senna	2.0
Sphaeralcea ambigua	Desert globemallow	1.0
Sporobolus cryptandrus	Sand dropseed	1.0
Baileya multiradiata	Desert marigold	1.0
Escholtzia Mexicana	Mexican gold poppy	2.0
Phacelia campanularia	Desert Canterbury bells	2.0
Lesquerella gordoni	Gordons bladderpod	1.0

Seeding shall be performed during the period conducive for growth when considering local climate and soil conditions. The contractor's submittal shall include the recommended time frame for seeding application.

901-2.2 Lime. Not required.

901-2.3 Fertilizer. Fertilizer shall be standard commercial fertilizers supplied separately or in mixtures containing the percentages of total nitrogen, available phosphoric acid, and water-soluble potash. They shall be applied at the rate and to the depth specified, and shall meet the requirements of applicable state laws. They shall be furnished in standard containers with name, weight, and guaranteed analysis of contents clearly marked thereon. No cyanamide compounds or hydrated lime shall be permitted in mixed fertilizers.

The fertilizers may be supplied in one of the following forms:

- **a.** A dry, free-flowing fertilizer suitable for application by a common fertilizer spreader;
- **b.** A finely-ground fertilizer soluble in water, suitable for application by power sprayers; or
- **c.** A granular or pellet form suitable for application by blower equipment.

Fertilizers shall be 13-13-13 commercial fertilizer and shall be spread at the rate of 250 pounds per acre, unless otherwise modified by the contractor's supplier, based on the seed mix, region, and climate.

901-2.4 Soil for repairs. The soil for fill and topsoiling of areas to be repaired shall be at least of equal quality to that which exists in areas adjacent to the area to be repaired. The soil shall be relatively free from large stones, roots, stumps, or other materials that will interfere with subsequent sowing of seed, compacting, and establishing turf, and shall be approved by the RPR before being placed.

CONSTRUCTION METHODS

901-3.1 Advance preparation and cleanup. After grading of areas has been completed and before applying fertilizer and ground limestone, areas to be seeded shall be raked or otherwise cleared of stones larger than 2 inches in any diameter, sticks, stumps, and other debris that might interfere with sowing of seed, growth of grasses, or subsequent maintenance of grass-covered areas. If any damage by erosion or other causes has occurred after the completion of grading and before beginning the application of fertilizer and ground limestone, the Contractor shall repair such damage include filling gullies, smoothing irregularities, and repairing other incidental damage.

An area to be seeded shall be considered a satisfactory seedbed without additional treatment if it has recently been thoroughly loosened and worked to a depth of not less than 5 inches as a result of grading operations and, if immediately prior to seeding, the top 3 inches of soil is loose, friable, reasonably free from large clods, rocks, large roots, or other undesirable matter, and if shaped to the required grade.

When the area to be seeded is sparsely sodded, weedy, barren and unworked, or packed and hard, any grass and weeds shall first be cut or otherwise satisfactorily disposed of, and the soil then scarified or otherwise loosened to a depth not less than 5 inches. Clods shall be broken and the top 3 inches of soil shall be worked into a satisfactory seedbed by discing, or by use of cultipackers, rollers, drags, harrows, or other appropriate means.

901-3.2 Dry application method.

a. Liming. Not required.

b. Fertilizing. Following advance preparations and cleanup fertilizer shall be uniformly spread at the rate that will provide not less than the minimum quantity stated in paragraph 901-2.3.

c. Seeding. Grass seed shall be sown at the rate specified in paragraph 901-2.1 immediately after fertilizing. The fertilizer and seed shall be raked within the depth range stated in the special provisions. Seeds of legumes, either alone or in mixtures, shall be inoculated before mixing or sowing, in accordance with the instructions of the manufacturer of the inoculant. When seeding is required at other than the seasons shown on the plans or in the special provisions, a cover crop shall be sown by the same methods required for grass and legume seeding.

All seed is to be drilled one-quarter (¼) inch to one-half (½) inch into the soil at the rate of application specified in Table 1 with a mechanical, power-drawn drill seeder. Rows shall be spaced not more than seven (7) inches apart. Contractor shall drill one-half (½) of the required rate of application in one compass direction, and then drill the remaining half of the required rate of application in a direction ninety degrees (90°) to the first half. Drill must be specifically designed to accommodate variability in size and physical characteristics of native rangeland grass seeds. Drill seed hopper shall have an auger to mix seed while drilling. Seed that is extremely small shall be sowed from a separate hopper adjusted to the proper rate of application.

d. Rolling. After the seed has been properly covered, the seedbed shall be immediately compacted by means of an approved lawn roller, weighing 40 to 65 pounds per foot of width for clay soil (or any soil having a tendency to pack), and weighing 150 to 200 pounds per foot of width for sandy or light soils.

901-3.3 Wet application method.

a. General. The Contractor may elect to apply seed and fertilizer (and lime, if required) by spraying them on the previously prepared seedbed in the form of an aqueous mixture and by using the methods and equipment described herein. The rates of application shall be as specified in the special provisions.

b. Spraying equipment. The spraying equipment shall have a container or water tank equipped with a liquid level gauge calibrated to read in increments not larger than 50 gallons over the entire range of the tank capacity, mounted so as to be visible to the nozzle operator. The container or tank shall also be equipped with a mechanical power-driven agitator capable of keeping all the solids in the mixture in complete suspension at all times until used.

The unit shall also be equipped with a pressure pump capable of delivering 100 gallons per minute at a pressure of 100 psi. The pump shall be mounted in a line that will recirculate the mixture through the tank whenever it is not being sprayed from the nozzle. All pump passages and pipe lines shall be capable of providing clearance for 5/8 inch solids. The power unit for the pump and agitator shall have controls mounted so as to be accessible to the nozzle operator. There shall be an indicating pressure gauge connected and mounted immediately at the back of the nozzle.

The nozzle pipe shall be mounted on an elevated supporting stand in such a manner that it can be rotated through 360 degrees horizontally and inclined vertically from at least 20 degrees below to at least 60 degrees above the horizontal. There shall be a quick-acting, three-way control valve connecting the recirculating line to the nozzle pipe and mounted so that the nozzle operator can control and regulate the amount of flow of mixture delivered to the nozzle. At least three different types of nozzles shall be supplied so that mixtures may be properly sprayed over distance varying from 20 to 100 feet. One shall be a close-range ribbon nozzle, one a medium-range ribbon nozzle, and one a long-range jet nozzle. For case of removal and cleaning, all nozzles shall be connected to the nozzle pipe by means of quick-release couplings.

In order to reach areas inaccessible to the regular equipment, an extension hose at least 50 feet in length shall be provided to which the nozzles may be connected.

c. Mixtures. Lime, if required, shall be applied separately, in the quantity specified, prior to the fertilizing and seeding operations. Not more than 220 pounds of lime shall be added to and mixed with each 100 gallons of water. Seed and fertilizer shall be mixed together in the relative proportions specified, but not more than a total of 220 pounds of these combined solids shall be added to and mixed with each 100 gallons of water.

All water used shall be obtained from fresh water sources and shall be free from injurious chemicals and other toxic substances harmful to plant life. The Contractor shall identify to the RPR all sources of water at least two (2) weeks prior to use. The RPR may take samples of the water at the source or from the tank at any time and have a laboratory test the samples for chemical and saline content. The Contractor shall not use any water from any source that is disapproved by the RPR following such tests.

All mixtures shall be constantly agitated from the time they are mixed until they are finally applied to the seedbed. All such mixtures shall be used within two (2) hours from the time they were mixed or they shall be wasted and disposed of at approved locations.

d. Spraying. Lime, if required, shall be sprayed only upon previously prepared seedbeds. After the applied lime mixture has dried, the lime shall be worked into the top 3 inches, after which the seedbed shall again be properly graded and dressed to a smooth finish.

Mixtures of seed and fertilizer shall only be sprayed upon previously prepared seedbeds on which the lime, if required, shall already have been worked in. The mixtures shall be applied by means of a high-pressure spray that shall always be directed upward into the air so that the mixtures will fall to the ground like rain in a uniform spray. Nozzles or sprays shall never be directed toward the ground in such a manner as might produce erosion or runoff.

Particular care shall be exercised to ensure that the application is made uniformly and at the prescribed rate and to guard against misses and overlapped areas. Proper predetermined quantities of the mixture in accordance with specifications shall be used to cover specified sections of known area.

Checks on the rate and uniformity of application may be made by observing the degree of wetting of the ground or by distributing test sheets of paper or pans over the area at intervals and observing the quantity of material deposited thereon.

On surfaces that are to be mulched as indicated by the plans or designated by the RPR, seed and fertilizer applied by the spray method need not be raked into the soil or rolled. However, on surfaces on which mulch is not to be used, the raking and rolling operations will be required after the soil has dried.

901-3.4 Maintenance of seeded areas. The Contractor shall protect seeded areas against traffic or other use by warning signs or barricades, as approved by the RPR. Surfaces gullied or otherwise damaged following seeding shall be repaired by regrading and reseeding as directed. The Contractor shall mow, water as directed, and otherwise maintain seeded areas in a satisfactory condition until final inspection and acceptance of the work.

When either the dry or wet application method outlined above is used for work done out of season, it will be required that the Contractor establish a good stand of grass of uniform color and density to the satisfaction of the RPR. A grass stand shall be considered adequate when bare spots are one square foot or less, randomly dispersed, and do not exceed 3% of the area seeded.

METHOD OF MEASUREMENT

901-4.1 The quantity of seeding to be paid for shall be the number of acres measured on the ground surface, completed and accepted.

BASIS OF PAYMENT

901-5.1 Payment shall be made at the contract unit price per acre or fraction thereof, which price and payment shall be full compensation for furnishing and placing all material and for all labor, equipment, tools, and incidentals necessary to complete the work prescribed in this item.

Payment will be made under:

No. 19, Spec No. T-901-5.1 Seeding – per Acre

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM International (ASTM)

ASTM C602 Standard Specification for Agricultural Liming Materials

Federal Specifications (FED SPEC)

FED SPEC JJsJ-S-181, Federal Specification, Seeds, Agricultural

Advisory Circulars (AC)

AC 150/5200-33 Hazardous Wildlife Attractants on or Near Airports

FAA/United States Department of Agriculture

Wildlife Hazard Management at Airports, A Manual for Airport Personnel

END OF ITEM T-901

DIVISION III

FEDERAL TECHNICAL SPECIFICATIONS TABLE OF CONTENTS

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Item L-100 Electrical General Requirements

DESCRIPTION

100-1.1 General. This Item includes furnishing and installing all material, equipment and apparatus, and all labor, tools, services, and equipment required for the removal of portions of the airfield lighting system as shown on the drawings and as follows:

a. The demolition, removal and/or salvage of portions of the existing airfield lighting systems including cable, signs and sign bases, and edge lights.

b. Temporary Airfield lighting power systems to maintain operation of airfield lighting circuit.

Installation shall be in accordance with Specifications FAA-C-1217 and FAA-C-1391, or as noted on the plans. Perform all work not included in the FAA Specifications in accordance with the National Electrical Code, applicable local and Airport standards, and regulations.

100-1.2 Demolition and salvage

a. Removal and salvage of airfield electrical elements is included under this item shall include the intent, but not limited to the specific elements, of the following:

(1) Remove and salvage existing base mounted taxiway edge lights.

b. Any fixtures damaged that are to remain in-place or identified as remove and salvage to Airport on the plans, shall be replaced at Contractor's expense.

c. Demolition (removal and non-return to Owner or for re-installation) of other airfield electrical system elements shall include the intent, but not limited to the specific elements, of the following:

(1) Power Cables; direct buried or in conduit.

d. Demolition (removal and non-return) of other elements associated with the airfield electrical system may also be included under other Items of this project. Elements covered within this specification shall include the intent, but not be limited to the specific elements, of the following:

(1) Underground conduits and duct banks, both concrete encased and direct earth buried.

(2) Grading and backfill associated with removal of the foregoing elements shall be covered under P-152, "Excavation and Embankment".

100-1.3 New construction grading and backfill.

Grading and backfill associated with the removal of existing items or construction of the new ducts and conduits shall be installed in accordance with P-152, "Excavation and Embankment" and GTP 30.03, Concrete for Structures. There will be no separate measurement or payment for any backfill, compaction, restoration or materials for slurry or concrete encased conduits and duct banks but shall be considered incidental to the associated item being installed.

100-1.4 Related documents. The General Provisions of the Contract, including General and Special Conditions, apply to work specified in this item.

a. Conflicts between Drawing and Specifications (Contract Documents) and between Contract Documents and references within the Contract Documents: Drawings and specifications are complementary. Work called for by one is binding as if called for by both. Prospective Contractors shall, as part of their proposals, enumerate, identify and list conflicts they find to exist within the Contract Documents, and between these Documents and the rules, regulations, standards and codes of the authority having jurisdiction (Airport Authority, City, County) local Utility companies and local County or State governing bodies. No Allowance shall subsequently be made to the Contractor by reason of his/her failure to have brought said discrepancies to the attention of the Consultant during the bidding period or by reason of any error on the Contractor's part.

b. Execution of Contract is evidence that Contractor has examined all existing conditions, drawings and specifications related to work, and is informed to extent and character of work. Claims made during construction for labor and materials required due to difficulties encountered as a result of Contractor's inattention to this issue, which could have been clarified prior to bid had examination been made, will be denied.

100-1.5 Temporary lighting and circuits.

a. Contractor shall coordinate with Airport Maintenance or Operations before the end of each work shift to verify that all airfield lighting circuits are operational. Contractor shall provide all labor and material for this work, non-pay item (NPI).

b. Contractor shall provide and maintain on site, sufficient equipment required to provide temporary lighting and circuit extensions.

c. Work associated with taxiway shall be performed during coordinated taxiway closures in segments, reconnected to remaining existing circuit segments and tested for operation prior to the end of each shift before re-opening taxiway if required to prevent the need for excessive temporary cabling.

100-1.6 Specifications and standards. As a supplement to the installation requirements of this item, the following standard specifications and regulations of the issues in effect on the date of this solicitation are incorporated herein by reference and are made a part hereof for electrical work and installation and splicing of underground cables.

NEC National Electrical Code

FAA-STD-019e
Lightning Protection, Grounding, Bonding and Shielding Requirements for Facilities

FAA-C-1391c
Installation and Splicing of Underground Cables
Local Governing Bodies' Public Works Department, City of Chandler
Codes and Regulations Maricopa Association of Governments (MAG)

American Association of State Highway and Transportation Officials (AASHTO)

(1) AASHTO LTS-5 (2009: Errata 2009: Amendment 2010) Standard Specifications for Structural Supports for Highway Signs, Luminaries and Traffic Signals.

ASTM International (ASTM)

(1) ASTM A123/A123M (2009) Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products

(2) ASTM A153/A153M (2009) Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware

(3) ASTM A575 (1996; R 2007) Standard Specification for Steel Bars, Carbon, Merchant Quality, M-Grades

(4) ASTM A576 (1900b; R 2006) Standard Specification for Steel Bars, Carbon, Hot-Wrought, Special Quality

Illuminating Engineering Society of North America (IESNA)

(1) IESNA HB-9 (2000: Errata 2004: Errata 2005: Errata 2006) IES Lighting Handbook.

Institute of Electrical and Electronics Engineers (IEEE)

(1) IEEE 81 (1983) Guide for Measuring Earth Resistivity, Ground Impedance, and Earth Surface Potentials of a Ground System.

(2) IEEE C135.1 (1999) Standard for Zinc-Coated Steel Bolts and Nuts for Overhead Line Construction.

(3) IEEE C2 (2007; Errata 06-1; TIA 07-1: TIA 07-3, Errata 07-2; TIA 08-4; TIA 08-6; TIA 08-7; TIA 08-8; TIA 08-9; TIA 08-10; TIA 08-11; TIA 09-12; TIA 09-13; TIA 09-14; Errata 09-3; TIA 09-15; TIA 09-16; TIA 10-17) National Electrical Safety Code

(4) IEEE Stds Dictionary (2009) IEEE Standards Dictionary: Glossary of Terms & Definitions

National Electrical Manufacturers Association (NEMA)

(1) ANSI C136.3 (2005; R 2009) American National Standard for Roadway and Area Lighting Equipment Luminaire Attachments

National Fire Protection Association (NFPA)

(1) NFPA 70 (2011; TIA 11-1; Errata 2011) National Electrical Code

ASHRAE/IESNA 90.1, 2004

American Welding Society (AWS)

Factory Mutual Institute Association (FM)

Lightning Protection Institute

International Electrical Testing Association

Underwriters Laboratories (UL)

(1) UL 467(2007) Grounding and Bonding Equipment

When required by law or regulations, the government agency having jurisdiction for inspections shall be given reasonable notice and opportunity to inspect the work. Any work that is enclosed or covered up before such inspection and test shall be uncovered at the Contractor's expense: after it has been inspected, the Contractor shall restore the work to its original condition at his own expense.

100-1.7 Shop drawings and material lists. Prior to the installation of any material and equipment and within 30 days of contract award, the Contractor shall submit to the Owner for approval electronic PDF copies of manufacturers' brochures containing complete dimensional and performance characteristics, wiring diagrams, installation, and operation instructions, etc., for the equipment listed in the individual L-Series specification Items. Each submittal shall be titled and include the corresponding specification section(s).

A materials list shall be submitted listing each specification paragraph number and stating whether the materials proposed are as specified or are substitutions. If the item is a substitute item, a complete submittal as described in the above paragraph shall be provided for that item.

Submittal data shall be presented in a clear, precise, and thorough manner. Original catalog sheets are preferred. Photocopies are acceptable provide they are as a good quality as the original. Clearly and boldly mark each copy to identify pertinent products or models applicable to this project. Indicate all optional equipment and delete non-pertinent data. Submittals for components of electrical equipment and systems shall identify the equipment for which they apply on each submittal sheet. Markings shall be boldly and clearly made with arrows or circles (highlighting is not acceptable). Contractor is solely responsible for delays in project accruing directly or indirectly from late submissions or resubmissions of submittals.

The data submitted shall be sufficient, in the opinion of the Engineer, to determine compliance with the plans and specifications. The Contractor's submittals shall be labeled and titled by specification section. The Engineer reserves the right to reject any and all equipment, materials or procedures, which, in the Engineer's opinion, does not meet the system design and the standards and codes, specified herein.

EQUIPMENT AND MATERIALS

100-2.1 Equipment. Conduits, conduit fittings, conductors, connectors, boxes, and wiring devices shall meet requirements of Specification FAA-C-1217 and Item L-110.

100-2.2 Conduit, underground. Conduits run underground are specified in Item L-110 of these specifications. Existing conduit will remain for reuse and installation of new cables as indicated in plans.

100-2.3 Conduit fittings. Each conduit and nipple entrance to duct and other such electrical enclosures shall be fitted with double locknuts (one each side of metal penetrated) and insulating bushing. Bushings on 1-1/4 inch and larger conduits shall be insulated metallic, type OZ/Gedney Cat. No. IBC Series, or equal; bushings for 3/4 inch and 1 inch shall be plastic insulated T&B rated for 150 C, or equal. All

insulated bonding and grounding bushings of conduits for 2400 volts or higher voltages, for conduit going underground, and for conduits going into concrete slabs shall be OZ/Gedney Cat. No. IBC-xxL (fitted with grounding lug), or equal. The bushings shall be connected to the grounding system within the terminating enclosure and not on the underground end. The buried end of each conduit shall be fitted with a thermosetting, plastic-insulated, metallic bushing. All openings where conduits enter junction boxes, other enclosures and shelters shall be sealed weather tight. The conduit shall be capped, if left empty, or sealed with Ducseal, or equal, around the conductors for exterior conduits.

100-2.4 Concrete-encased duct. Concrete-encased PVC duct shall be as specified in Item L-110.

100-2.5 Concrete duct markers. Markers shall be as specified in Item L-110 and as detailed on drawings.

100-2.6 Concrete handholes. Hand holes shall be as specified in Item L-115 and as detailed on drawings.

100-2.7 Light bases and transformer housing. New light bases, transformer housings, junction cans and covers shall be as specified in AC 150/5345-42, Item L-115 and L-125 and as detailed on drawings.

CONSTRUCTION METHODS

100-3.1 Existing utilities. Prior to any excavation or trenching, Contractor shall provide utility locator or contact Blue Stake to locate any existing cables and utilities, which will be crossed by the trench. Where existing underground utilities are shown on plans to conflict with existing conduit removal and / or new conduit installation, Contractor shall pothole to verify the location and depth. Ensure these utilities are permanently disconnected if they are going to be demolished. The existing service lines shall be exposed by hand digging in those areas that will be crossed and shall be protected from any possible damage. If any damage occurs, it shall be the Contractor's responsibility to immediately repair such damage with materials and methods approved by the Owner and in compliance with applicable codes and standards, at Contractor's expense. Existing utilities to be abandoned shall be removed at the point of crossing as shown on the drawings.

100-3.2 Demolition. Airfield Lighting and Signage.

a. Removal of existing conductors associated with taxiway(s) that are required to remain active during daytime operations (or as required by Airport) shall be performed in segments during each shift or construction phase, immediately followed by installation of new cable or temporary airfield circuit jumpers, reconnection and testing prior to end of shift to maintain operation of lighting during hours when construction is not occurring.

b. Removal of cables associated with lighting or signage that is to remain operational during construction shall be coordinated with Airport. Existing cables may be removed from underground conduits and sleeved with PVC conduit, secured with sandbags to provide temporary power during construction as required for facilitating removal of existing and construction of new duct banks, light bases, sign foundations and hand holes / junction cans.

c. Existing L-867 bases for taxiway that are to remain for reinstallation of new fixtures shall be provided with new hardware. Existing mounting bolt hardware will likely require penetrating oil application for removal. Contractor shall be prepared for task of removing existing hardware and broken bolts for installation of new hardware and fixtures on bases that are designated to remain.

(1) Coordinate with Airport / Operations for NOTAMs and Lockout / Tag-out of all circuits affected by construction.
(2) Remove indicated conduits, ducts and conductors from site and dispose of according to local regulations.
(3) Material and equipment not designated for re-installation, including signs, light fixtures and isolation transformers, shall be safely stored to protect from damage during construction then offered for salvage to the appropriate Airport personnel at the end of completion. Non-re-usable material, including conduit, concrete hand holes / pull boxes, foundations, base cans and conductors, shall become the property of the Contractor and shall be removed from the site and disposed of according to Local Ordinances, at Contractor's expense.

d. Existing signage that is required to remain operational shall remain in place on existing foundation until installation of new sign is ready to be performed. Removal of existing mounting anchors for replacement with new shall also be included in demolition efforts.

100-3.3 Conductors. Installation of underground 5 kV series circuits and parallel circuit conductors are specified in Item L-108 of these specifications.

100-3.4 Grounding. All metal support structures, and metal enclosures shall be grounded in accordance with the requirements of the latest edition of Specifications FAA-C-1217, FAA-C-1391, and FAA-STD-019, as indicated in Item L-108 and as detailed on the drawings.

100-3.5 Ground rods. Grounding rods shall be 3/4-inch diameter by 10 feet long copper-jacketed steel. Grounding connections to ground rods where buried or encased shall be by the exothermic weld process, Cadweld or equal. Extruded, drawn or stamped-type ground clamps will not be acceptable. The resistance to ground shall not exceed 25 ohms.

100-3.6 Ground conductors. Equipment grounding conductors shall be insulated copper, except where shown on the project drawings to be bare, and sized as shown on the project drawings; and all grounds will be shown in accordance with Article 250 of the National Electrical Code, with FAA-STD-019 and Item L-108. Attachment of wire to supports, boxes, etc., shall be accomplished using approved ground lug attached with a separate stainless-steel screw, lock washer and nut. Screws used for support of the electrical enclosure shall not be used for connection of the ground wire. Pipe straps shall not be used for ground purposes.

COLOR CODING OF GROUND CONDUCTORS

TYPE OF GROUND CONDUCTOR	COLOR OF INSULATION
Grounding Electrode Conductor	Bare (solid)- No Insulation
Counterpoise Conductor	Bare (solid) – No Insulation
External Sign and Transformer Housing Ground Conductor	Bare – No Insulation
Equipment Grounding Conductor	Green (safety)

The multi-ground system supplements but does not replace the equipment-grounding conductor required by the National Electrical Code.

Each of these separate ground conductors is insulated in order to keep it distinct and not allow contact with any other conductor.

Electrical continuity of cable armor or shield shall be maintained. Grounding of the cable armor or shield shall be required at all terminations and shall be accomplished by connecting a #6 AWG solid bare copper wire to the cable armor or shield by means of a compression-type ground clamp installed within the terminating enclosure. Armor or shield ground wire shall be connected to the ground electrode conductor using split bolt connector, Burndy or equal. Grounding of direct earth burial (DEB) armored power and shielding control cable shall be at each end in accordance with FAA-C-1391.

100-3.7 Identification. Conductors shall be identified as per FAA-C-1217, Section 5.2.5.2.2. Cable tagging and circuit identification markers shall be identified as per FAA-C-1391, Sections 5.12.1 and 5.12.2. Transformers, panelboards, constant current regulators, splice cabinets, enclosures and other vault equipment shall be identified by nameplate of nonferrous metal or rigid plastic, engraved with 3/8-inch high lettering with information as per FAA-C-1217, Section 5.11.

100-3.8 Contractor testing and submittals. Equipment and materials list and shop drawings shall be submitted as per FAA-C-1391, Section 3.2. Testing shall be required and performed as per FAA-C-1217, Section 4.8, and FAA-C-1391, Section 3.3.5. The Contractor shall pretest all cable on the reel prior to installation and provide a copy of the test results to the Owner. The Contractor shall be responsible for repairs or replacement of any cable found defective after installation.

The Contractor shall test existing affected circuits prior to start of construction and the installed airfield lighting and miscellaneous power cables at the completion of this project. The results of the testing shall be provided to the Owner for review and acceptance. The Contractor shall be responsible for repairs or replacement of any cable found defective after installation.

Installation tests in addition to all tests contained in other L-Series Items shall be provided as follows:

Item	Test Required	Manufac-turer's Rep. Present?
5 kV Rated Airfield Lighting and Power Cables (On the Reel, Not Including Equipment for Contractor Quality Control. Maybe deleted per-coordination with Engineer).	Megger check at 500 to 1000 Volts prior to installation. Values of insulation resistance for each reel shall be noted and given to the Construction Manager/ Owner for acceptance. It is expected that the readings will be greater than 1000 meg-ohms (1 gig-ohm).	No
5 kV Rated Airfield Lighting and Power Cables (All Circuits Installed in This Project)	Megger check at 500 to 1000 volts at the completion of installation. Test every circuit for conductor-to-ground and conductor-to-conductor (between circuits) insulation resistance. Test results shall be tabulated and given to the Construction Manager/Owner for acceptance. It is required that the readings be greater than 100 meg-ohms.	No
5 kV Rated Airfield Lighting and Power Cables (All Circuits Installed in This Project)	Megger check at 500 to 1000 volts at the completion of installation. Test every circuit for conductor-to-ground and conductor-to-conductor (between circuits) insulation resistance. Test results shall be tabulated and given to the Construction Manager/Owner for acceptance.	No
5 kV and 600 Volt and Multi-pair Cables	If a power cable puller is used, continuous-tape pull tension readings for each section of cable shall be provided to the Construction Manager or Owner for review.	No

100-3.9 Notification of testing. The Contractor shall notify the project RE and the Airport, a minimum of 48 hours in advance of system, or partial system, testing including, but not limited to, installed cable insulation resistance (megger) testing, and operational testing of any modified lighting circuit.

METHOD OF MEASUREMENT

100-4.1 Remove and salvage elevated taxiway edge light and isolation transformer, remove base can. The quantity to be measured shall be for the removal of existing incandescent, quartz elevated taxiway edge lights, fixture mounting base plates and isolation transformers for storing and protecting safely during construction until reinstallation or return to Airport. This shall also include complete removal and disposal off site of existing concrete encased base cans, fixtures or transformers that Airport does not require returned in accordance with the Plans and Specifications and as accepted.

100-4.2 Remove and salvage taxiway edge light and isolation transformer, existing base can to remain. The quantity to be measured shall be for the removal and safe storage of existing runway edge lights to protect from damage within the area of construction. It shall also include protection of designated existing edge lighting fixture bases, in place, per the Plans and Specifications and as accepted.

100-4.3 Remove existing conductor, conduit to remain. This item shall consist of removal and disposal off site of existing airfield and apron lighting cable from within existing underground conduits

in accordance with the Plans and Specifications and as accepted. Cable removal is quantified as an effort to remove any number of conductors from within each conduit in a single run or each duct bank conduit. No separate measurement will be made for multiple conductors located in each conduit. No separate measurement will be made for slack.

100-4.4 Excavate and remove existing conduit and conductor. This item shall consist of complete removal and disposal off site of airfield lighting cable and complete removal of existing underground conduits in accordance with the Plans and Specifications and as accepted. No separate measurement will be made for multiple conduits in an existing duct bank. No separate measurement will be made for removal of existing airfield cable within conduits designated for removal. This shall also include backfill, compaction and restoration of disturbed area as required.

100-4.5 Remove existing lighted airfield guidance sign and isolation transformer, demo sign base. The quantity to be measured shall be for the removal of existing airfield guidance sign and isolation transformer from concrete foundation, excavation for complete removal and disposal from site of concrete sign foundation including backfill, compaction and restoration of disturbed area as required. It shall also include the safe storage of existing signs to protect until they are returned to Airport or disposed of, as required.

100-4.6 Remove existing lighted airfield guidance sign and isolation transformer, sign base to remain. The quantity to be measured shall be for the removal of existing airfield guidance sign and isolation transformer from concrete foundation, as required. It shall also include the safe storage of existing signs to protect until they are returned to Airport or disposed of, as required.

BASIS OF PAYMENT

100-5.1 Electrical services. Payment will be made at the contract price for the electrical services completed and accepted. This price shall be full compensation for furnishing all materials and for all labor, equipment, tools, and incidentals necessary to complete these items. The unit price of each of these items shall also include the Contractor's overhead, profit and markup.

Payment will be made under:

No. 20, Spec No. L-100-5.1	Remove and Salvage Existing Taxiway Edge Light and Isolation Transformer Demolish Base Can – per Each
No. 21, Spec No. L-100-5.2	Remove and Salvage Existing Taxiway Edge Light and Isolation Transformer and Return to Owner - Base Can to Remain – per Each
No. 22, Spec No. L-100-5.3	Remove Existing Conductors Back to Next Adjacent Light fixture or Hand Hole, Conduit to Remain– per Linear Foot
No. 23, Spec No. L-100-5.4	Excavate and Remove Existing Conduit and Conductors – per Linear Foot
No. 24, Spec No. L-100-5.5	Remove and Salvage Existing Airfield Guidance Sign and Return to Owner - Remove Concrete Sign Base – per Each

No. 25, Spec No. L-100-5.6	Remove and Salvage Existing Airfield Guidance Sign and Isolation Transformer and Return to Owner, Sign Base to Remain – per Each

END OF ITEM L-100

Item L-108 Underground Power Cable for Airports

DESCRIPTION

108-1.1 This item shall consist of furnishing and installing power cables that are direct buried and furnishing and/or installing power cables within conduit or duct banks per these specifications at the locations shown on the plans. It includes excavation and backfill of trench for direct-buried cables only. Also included are the installation of counterpoise wires, ground wires, ground rods and connections, cable splicing, cable marking, cable testing, and all incidentals necessary to place the cable in operating condition as a completed unit to the satisfaction of the RPR. This item shall not include the installation of duct banks or conduit, trenching and backfilling for duct banks or conduit, or furnishing or installation of cable for FAA owned/operated facilities.

EQUIPMENT AND MATERIALS

108-2.1 General.

a. Airport lighting equipment and materials covered by advisory circulars (AC) shall be approved under the Airport Lighting Equipment Certification Program per AC 150/5345-53, current version.

b. All other equipment and materials covered by other referenced specifications shall be subject to acceptance through manufacturer's certification of compliance with the applicable specification, when requested by the RPR.

c. Manufacturer's certifications shall not relieve the Contractor of the responsibility to provide materials per these specifications. Materials supplied and/or installed that do not comply with these specifications shall be removed (when directed by the RPR) and replaced with materials that comply with these specifications at the Contractor's cost.

d. All materials and equipment used to construct this item shall be submitted to the RPR for approval prior to ordering the equipment. Submittals consisting of marked catalog sheets or shop drawings shall be provided. Submittal data shall be presented in a clear, precise and thorough manner. Original catalog sheets are preferred. Photocopies are acceptable provided they are as good a quality as the original. Clearly and boldly mark each copy to identify products or models applicable to this project. Indicate all optional equipment and delete any non-pertinent data. Submittals for components of electrical equipment and systems shall identify the equipment to which they apply on each submittal sheet. Markings shall be made bold and clear with arrows or circles (highlighting is not acceptable). The Contractor is solely responsible for delays in the project that may accrue directly or indirectly from late submissions or resubmissions of submittals.

e. The data submitted shall be sufficient, in the opinion of the RPR, to determine compliance with the plans and specifications. The Contractor's submittals shall be electronically submitted in pdf format. The RPR reserves the right to reject any and all equipment, materials, or procedures that do not meet the system design and the standards and codes, specified in this document.

f. All equipment and materials furnished and installed under this section shall be guaranteed against defects in materials and workmanship for at least twelve (12) months from the date of final acceptance by the Owner. The defective materials and/or equipment shall be repaired or replaced, at the Owner's discretion, with no additional cost to the Owner. The Contractor shall maintain a minimum insulation resistance in accordance with paragraph 108-3.10e with isolation transformers connected in new circuits and new segments of existing circuits through the end of

the contract warranty period when tested in accordance with AC 150/5340-26, Maintenance Airport Visual Aid Facilities, paragraph 5.1.3.1, Insulation Resistance Test.

108-2.2 Cable. Underground cable for airfield lighting facilities (runway and taxiway lights and signs) shall conform to the requirements of AC 150/5345-7, Specification for L-824 Underground Electrical Cable for Airport Lighting Circuits latest edition. Conductors for use on 6.6 ampere primary airfield lighting series circuits shall be single conductor, seven strand, #8 American wire gauge (AWG), L-824 Type C, 5,000 volts, non-shielded, with cross-linked polyethylene insulation. Conductors for use on 20 ampere primary airfield lighting series circuits shall be single conductor, seven strand, #6 AWG, L-824 Type C, 5,000 volts, non-shielded, with cross-linked polyethylene insulation. L-824 conductors for use on the L-830 secondary of airfield lighting series circuits shall be sized in accordance with the manufacturer's recommendations. All other conductors shall comply with FAA and National Electric Code (NEC) requirements. Conductor sizes noted above shall not apply to leads furnished by manufacturers on airfield lighting transformers and fixtures.

Wire for electrical circuits up to 600 volts shall comply with Specification L-824 and/or Commercial Item Description A-A-59544A and shall be type THWN-2, 75°C for installation in conduit and RHW-2, 75°C for direct burial installations. Conductors for parallel (voltage) circuits shall be type and size and installed in accordance with NFPA-70, National Electrical Code.

Unless noted otherwise, all 600-volt and less non-airfield lighting conductor sizes are based on a 75°C, THWN-2, 600-volt insulation, copper conductors, not more than three single insulated conductors, in raceway, in free air. The conduit/duct sizes are based on the use of THWN-2, 600-volt insulated conductors. The Contractor shall make the necessary increase in conduit/duct sizes for other types of wire insulation. In no case shall the conduit/duct size be reduced. The minimum power circuit wire size shall be #12 AWG.

Conductor sizes may have been adjusted due to voltage drop or other engineering considerations. Equipment provided by the Contractor shall be capable of accepting the quantity and sizes of conductors shown in the Contract Documents. All conductors, pigtails, cable step-down adapters, cable step-up adapters, terminal blocks and splicing materials necessary to complete the cable termination/splice shall be considered incidental to the respective pay items provided.

Cable type, size, number of conductors, strand and service voltage shall be as specified in the Contract Document.

108-2.3 Bare copper wire (counterpoise, bare copper wire ground and ground rods). Wire for counterpoise or ground installations for airfield lighting systems shall be No. 6 AWG bare solid copper wire for counterpoise and/or No. 6 AWG insulated stranded for grounding bond wire per ASTM B3 and ASTM B8, and shall be bare copper wire. For voltage powered circuits, the equipment grounding conductor shall comply with NEC Article 250.

Ground rods shall be copper-clad steel. The ground rods shall be of the length and diameter specified on the plans, but in no case be less than 10 feet long and 3/4 inch in diameter.

108-2.4 Cable connections. In-line connections or splices of underground primary cables shall be of the type called for on the plans, and shall be one of the types listed below. No separate payment will be made for cable connections.

a. The cast splice. A cast splice, employing a plastic mold and using epoxy resin equivalent to that manufactured by 3MTM Company, "Scotchcast" Kit No. 82-B, or an approved equivalent, used for potting the splice is acceptable.

b. The field-attached plug-in splice. Field attached plug-in splices shall be installed as shown on the plans. The Contractor shall determine the outside diameter of the cable to be spliced and furnish appropriately sized connector kits and/or adapters. Tape or heat shrink tubing with integral sealant shall be in accordance with the manufacturer's requirements. Primary Connector Kits manufactured by Amerace, "Super Kit", Integro "Complete Kit", or approved equal is acceptable.

c. The factory-molded plug-in splice. Specification for L-823 Connectors, Factory-Molded to Individual Conductors, is acceptable.

d. The taped or heat-shrink splice. Taped splices employing field-applied rubber, or synthetic rubber tape covered with plastic tape is acceptable. The rubber tape should meet the requirements of ASTM D4388 and the plastic tape should comply with Military Specification MIL-I-24391 or Commercial Item Description A-A-55809. Heat shrinkable tubing shall be heavy-wall, self-sealing tubing rated for the voltage of the wire being spliced and suitable for direct-buried installations. The tubing shall be factory coated with a thermoplastic adhesive-sealant that will adhere to the insulation of the wire being spliced forming a moisture- and dirt-proof seal. Additionally, heat shrinkable tubing for multi-conductor cables, shielded cables, and armored cables shall be factory kits that are designed for the application. Heat shrinkable tubing and tubing kits shall be manufactured by Tyco Electronics/ Raychem Corporation, Energy Division, or approved equivalent.

In all the above cases, connections of cable conductors shall be made using crimp connectors using a crimping tool designed to make a complete crimp before the tool can be removed. All L-823/L-824 splices and terminations shall be made per the manufacturer's recommendations and listings.

All connections of counterpoise, grounding conductors and ground rods shall be made by the exothermic process or approved equivalent, except that a light base ground clamp connector shall be used for attachment to the light base. All exothermic connections shall be made per the manufacturer's recommendations and listings.

108-2.5 Splicer qualifications. Every airfield lighting cable splicer shall be qualified in making airport cable splices and terminations on cables rated at or above 5,000 volts AC. The Contractor shall submit to the RPR proof of the qualifications of each proposed cable splicer for the airport cable type and voltage level to be worked on. Cable splicing/terminating personnel shall have a minimum of three (3) years continuous experience in terminating/splicing medium voltage cable.

108-2.6 Concrete. Concrete shall be proportioned, placed, and cured per GTP 30.03, Concrete for Structures.

108-2.7 Flowable backfill. Flowable material used to backfill trenches for power cable trenches shall conform to the requirements of Item P-153, Controlled Low Strength Material.

108-2.8 Cable identification tags. Cable identification tags shall be made from a non-corrosive material with the circuit identification stamped or etched onto the tag. The tags shall be of the type as detailed on the plans.

108-2.9 Tape. Electrical tapes shall be Scotch™ Electrical Tapes –Scotch™ 88 (1-1/2-inch wide) and Scotch™ 130C® linerless rubber splicing tape (2-inch wide), as manufactured by the Minnesota Mining and Manufacturing Company (3M™), or an approved equivalent.

108-2.10 Electrical coating. Electrical coating shall be Scotchkote™ as manufactured by 3M™, or an approved equivalent.

108-2.11 Existing circuits. Whenever the scope of work requires connection to an existing circuit, the existing circuit's insulation resistance shall be tested, in the presence of the RPR. The test shall be performed per this item and prior to any activity that will affect the respective circuit. The Contractor shall record the results on forms acceptable to the RPR. When the work affecting the circuit is complete, the circuit's insulation resistance shall be checked again, in the presence of the RPR. The Contractor shall record the results on forms acceptable to the RPR. The second reading shall be equal to or greater than the first reading or the Contractor shall make the necessary repairs to the existing circuit to bring the second reading above the first reading. All repair costs including a complete replacement of the L-823 connectors, L-830 transformers and L-824 cable, if necessary, shall be borne by the Contractor. All test results shall be submitted in the Operation and Maintenance (O&M) Manual

108-2.12 Detectable warning tape. Plastic, detectable, American Public Works Association (APWA) Red (electrical power lines, cables, conduit and lighting cable) with continuous legend tape shall be polyethylene film with a metalized foil core and shall be 3-6 inches wide. Detectable tape is incidental to the respective bid item. Detectable warning tape for communication cables shall be orange. Detectable warning tape color code shall comply with the APWA Uniform Color Code.

CONSTRUCTION METHODS

108-3.1 General. The Contractor shall install the specified cable at the approximate locations indicated on the plans. Unless otherwise shown on the plans, all cable required to cross under pavements expected to carry aircraft loads shall be installed in concrete encased duct banks. Cable shall be run without splices, from fixture to fixture.

Cable connections between lights will be permitted only at the light locations for connecting the underground cable to the primary leads of the individual isolation transformers. The Contractor shall be responsible for providing cable in continuous lengths for home runs or other long cable runs without connections unless otherwise authorized in writing by the RPR or shown on the plans.

In addition to connectors being installed at individual isolation transformers, L-823 cable connectors for maintenance and test points shall be installed at locations shown on the plans. Cable circuit identification markers shall be installed on both sides of the L-823 connectors installed and on both sides of slack loops where a future connector would be installed.

Provide not less than 3 feet of cable slack on each side of all connections, isolation transformers, light units, and at points where cable is connected to field equipment. Where provisions must be made for testing or for future above grade connections, provide enough slack to allow the cable to be extended at least one foot vertically above the top of the access structure. This requirement also applies where primary cable passes through empty light bases, junction boxes, and access structures to allow for future connections, or as designated by the RPR.

Primary airfield lighting cables installed shall have cable circuit identification markers attached on both sides of each L-823 connector and on each airport lighting cable entering or leaving cable access points, such as manholes, hand holes, pull boxes, junction boxes, etc. Markers shall be of sufficient length for imprinting the cable circuit identification legend on one line, using letters not less than 1/4 inch in size. The cable circuit identification shall match the circuits noted on the construction plans.

108-3.2 Installation in duct banks or conduits. This item includes the installation of the cable in duct banks or conduit per the following paragraphs. The maximum number and voltage ratings of cables installed in each single duct or conduit, and the current-carrying capacity of each cable shall be per the latest version of the National Electric Code, or the code of the local agency or authority having jurisdiction.

The Contractor shall make no connections or splices of any kind in cables installed in conduits or duct banks.

Unless otherwise designated in the plans, where ducts are in tiers, use the lowest ducts to receive the cable first, with spare ducts left in the upper levels. Check duct routes prior to construction to obtain assurance that the shortest routes are selected and that any potential interference is avoided.

Duct banks or conduits shall be installed as a separate item per Item L-110, Airport Underground Electrical Duct Banks and Conduit. The Contractor shall run a mandrel through duct banks or conduit prior to installation of cable to ensure that the duct bank or conduit is open, continuous and clear of debris. The mandrel size shall be compatible with the conduit size. The Contractor shall swab out all conduits/ducts and clean light bases, manholes, etc., interiors immediately prior to pulling cable. Once cleaned and swabbed, the light bases and all accessible points of entry to the duct/conduit system shall be kept closed except when installing cables. Cleaning of ducts, light bases, manholes, etc., is incidental to the pay item of the item being cleaned. All raceway systems left open, after initial cleaning, for any reason shall be re-cleaned at the Contractor's expense. The Contractor shall verify existing ducts proposed for use in this project as clear and open. The Contractor shall notify the RPR of any blockage in the existing ducts.

The cable shall be installed in a manner that prevents harmful stretching of the conductor, damage to the insulation, or damage to the outer protective covering. The ends of all cables shall be sealed with moisture-seal tape providing moisture-tight mechanical protection with minimum bulk, or alternately, heat shrinkable tubing before pulling into the conduit and it shall be left sealed until connections are made. Where more than one cable is to be installed in a conduit, all cable shall be pulled in the conduit at the same time. The pulling of a cable through duct banks or conduits may be accomplished by hand winch or power winch with the use of cable grips or pulling eyes. Maximum pulling tensions shall not exceed the cable manufacturer's recommendations. A non-hardening cable-pulling lubricant recommended for the type of cable being installed shall be used where required.

The Contractor shall submit the recommended pulling tension values to the RPR prior to any cable installation. If required by the RPR, pulling tension values for cable pulls shall be monitored by a dynamometer in the presence of the RPR. Cable pull tensions shall be recorded by the Contractor and reviewed by the RPR. Cables exceeding the maximum allowable pulling tension values shall be removed and replaced by the Contractor at the Contractor's expense.

The manufacturer's minimum bend radius or NEC requirements (whichever is more restrictive) shall apply. Cable installation, handling and storage shall be per manufacturer's recommendations. During cold weather, particular attention shall be paid to the manufacturer's minimum installation temperature. Cable shall not be installed when the temperature is at or below the manufacturer's minimum installation temperature. At the Contractor's option, the Contractor may submit a plan, for review by the RPR, for heated storage of the cable and maintenance of an acceptable cable temperature during installation when temperatures are below the manufacturer's minimum cable installation temperature.

Cable shall not be dragged across base can or manhole edges, pavement or earth. When cable must be coiled, lay cable out on a canvas tarp or use other appropriate means to prevent abrasion to the cable jacket.

108-3.3 Installation of direct-buried cable in trenches. [NOT USED] Unless otherwise specified, the Contractor shall not use a cable plow for installing the cable. Cable shall be unreeled uniformly in place alongside or in the trench and shall be carefully placed along the bottom of the trench. The cable shall not be unreeled and pulled into the trench from one end. Slack cable sufficient to provide strain relief shall be placed in the trench in a series of S curves. Sharp bends or kinks in the cable shall not be permitted.

Where cables must cross over each other, a minimum of 3 inches vertical displacement shall be provided with the topmost cable depth at or below the minimum required depth below finished grade.

a. Trenching. Where turf is well established and the sod can be removed, it shall be carefully stripped and properly stored. Trenches for cables may be excavated manually or with mechanical trenching equipment. Walls of trenches shall be essentially vertical so that a minimum of surface is disturbed. Graders shall not be used to excavate the trench with their blades. The bottom surface of trenches shall be essentially smooth and free from coarse aggregate. Unless otherwise specified, cable trenches shall be excavated to a minimum depth of 18 inches (0.5 m) below finished grade per NEC Table 300.5, except as follows:

- When off the airport or crossing under a roadway or driveway, the minimum depth shall be 36 inches unless otherwise specified.
- Minimum cable depth when crossing under a railroad track, shall be 42 inches unless otherwise specified.

The Contractor shall excavate all cable trenches to a width not less than 6 inches. Unless otherwise specified on the plans, all cables in the same location and running in the same general direction shall be installed in the same trench.

When rock is encountered, the rock shall be removed to a depth of at least 3 inches below the required cable depth and it shall be replaced with bedding material of earth or sand containing no mineral aggregate particles that would be retained on a 1/4-inch sieve. Flowable backfill material may alternatively be used.

Duct bank or conduit markers temporarily removed for trench excavations shall be replaced as required.

It is the Contractor's responsibility to locate existing utilities within the work area prior to excavation. Where existing active cables cross proposed installations, the Contractor shall ensure that these cables are adequately protected. Where crossings are unavoidable, no splices will be allowed in the existing cables, except as specified on the plans. Installation of new cable where such crossings must occur shall proceed as follows:

(1) Existing cables shall be located manually. Unearthed cables shall be inspected to assure absolutely no damage has occurred.

(2) Trenching, etc., in cable areas shall then proceed, with approval of the RPR, with care taken to minimize possible damage or disruption of existing cable, including careful backfilling in area of cable.

In the event that any previously identified cable is damaged during the course of construction, the Contractor shall be responsible for the complete repair or replacement.

b. Backfilling. After the cable has been installed, the trench shall be backfilled. The first layer of backfill in the trench shall encompass all cables; be 3 inches deep, loose measurement; and shall be either earth or sand containing no mineral aggregate particles that would be retained on a 1/4-inch sieve. This layer shall not be compacted. The second layer shall be 5 inches deep, loose measurement, and shall contain no particles that would be retained on a one-inch sieve. The remaining third and subsequent layers of backfill shall not exceed 8 inches of loose measurement and be excavated or imported material and shall not contain stone or aggregate larger than 4 inches maximum diameter.

The second and subsequent layers shall be thoroughly tamped and compacted to at least the density of the adjacent material. If the cable is to be installed in locations or areas where other compaction requirements are specified (under pavements, embankments, etc.) the backfill compaction shall be to a minimum of 100 percent of ASTM D1557 or backfilled with controlled low strength material (CLSM) in accordance with P-153 as indicated on plans.

Trenches shall not contain pools of water during backfilling operations. The trench shall be completely backfilled and tamped level with the adjacent surface, except that when turf is to be established over the trench, the backfilling shall be stopped at an appropriate depth consistent with the type of turfing operation

to be accommodated. A proper allowance for settlement shall also be provided. Any excess excavated material shall be removed and disposed of per the plans and specifications.

Underground electrical warning (caution) tape shall be installed in the trench above all direct-buried cable. Contractor shall submit a sample of the proposed warning tape for acceptance by the RPR. If not shown on the plans, the warning tape shall be located 6 inches above the direct-buried cable or the counterpoise wire if present. A 3-6-inch-wide polyethylene film detectable tape, with a metalized foil core, shall be installed above all direct buried cable or counterpoise. The tape shall be of the color and have a continuous legend as indicated on the plans. The tape shall be installed 8 inches minimum below finished grade.

c. Restoration. Following restoration of all trenching near airport movement surfaces, the Contractor shall visually inspect the area for foreign object debris (FOD) and remove any that is found. Where soil and sod has been removed, it shall be replaced as soon as possible after the backfilling is completed. All areas disturbed by work shall be restored to its original condition. The restoration shall include the sodding, top soiling, fertilizing, liming, seeding, sprigging, or mulching as shown on the plans. The Contractor shall be held responsible for maintaining all disturbed surfaces and replacements until final acceptance. When trenching is through paved areas, restoration shall be equal to existing conditions. If the cable is to be installed in locations or areas where other compaction requirements are specified (under pavements, embankments, etc.) the backfill compaction shall be to a minimum of 100 percent of ASTM D1557 or backfilled with controlled low strength material (CLSM) in accordance with P-153 as indicated in plans. Restoration shall be considered incidental to the pay item of which it is a component part.

108-3.4 Cable markers for direct-buried cable. The location of direct buried circuits shall be marked by a concrete slab marker, 2 feet square and 4-6-inch-thick, extending approximately one inch above the surface. Each cable run from a line of lights and signs to the equipment vault shall be marked at approximately every 200 feet along the cable run, with an additional marker at each change of direction of cable run. All other direct-buried cable shall be marked in the same manner. Cable markers shall be installed directly above the cable. The Contractor shall impress the word "CABLE" and directional arrows on each cable marking slab. The letters shall be approximately 4 inches high and 3 inches wide, with width of stroke 1/2 inch and 1/4 inch deep. Stencils shall be used for cable marker lettering; no hand lettering shall be permitted.

At the location of each underground cable connection/splice, except at lighting units, or isolation transformers, a concrete marker slab shall be installed to mark the location of the connection/splice. The Contractor shall impress the word "SPLICE" on each slab. The Contractor also shall impress additional circuit identification symbols on each slab as directed by the RPR. All cable markers and splice markers shall be painted international orange. Paint shall be specifically manufactured for uncured exterior concrete. After placement, all cable or splice markers shall be given one coat of high-visibility aviation orange paint as approved by the RPR. Furnishing and installation of cable markers is incidental to the respective cable pay item.

108-3.5 Splicing. Connections of the type shown on the plans shall be made by experienced personnel regularly engaged in this type of work and shall be made as follows:

a. Cast splices. These shall be made by using crimp connectors for jointing conductors. Molds shall be assembled, and the compound shall be mixed and poured per the manufacturer's instructions and to the satisfaction of the RPR.

b. Field-attached plug-in splices. These shall be assembled per the manufacturer's instructions. These splices shall be made by plugging directly into mating connectors. The joint where the connectors come together shall be finished by one of the following methods: (1) wrapped with at least one layer of rubber or synthetic rubber tape and one layer of plastic tape, one-half lapped, extending at least 1-1/2 inches on each side of the joint (2) Covered with heat shrinkable tubing with integral sealant extending

at least 1-1/2 inches on each side of the joint or (3) On connector kits equipped with water seal flap; roll-over water seal flap to sealing position on mating connector.

c. Factory-molded plug-in splices. These shall be made by plugging directly into mating connectors. The joint where the connectors come together shall be finished by one of the following methods: (1) Wrapped with at least one layer of rubber or synthetic rubber tape and one layer of plastic tape, one-half lapped, extending at least 1-1/2 inches on each side of the joint. (2) Covered with heat shrinkable tubing with integral sealant extending at least 1-1/2 inches on each side of the joint. or (3) On connector kits so equipped with water seal flap; roll-over water seal flap to sealing position on mating connector.

d. Taped or heat-shrink splices. A taped splice shall be made in the following manner:

Bring the cables to their final position and cut so that the conductors will butt. Remove insulation and jacket allowing for bare conductor of proper length to fit compression sleeve connector with 1/4 inch of bare conductor on each side of the connector. Prior to splicing, the two ends of the cable insulation shall be penciled using a tool designed specifically for this purpose and for cable size and type. Do not use emery paper on splicing operation since it contains metallic particles. The copper conductors shall be thoroughly cleaned. Join the conductors by inserting them equidistant into the compression connection sleeve. Crimp conductors firmly in place with crimping tool that requires a complete crimp before tool can be removed. Test the crimped connection by pulling on the cable. Scrape the insulation to assure that the entire surface over which the tape will be applied (plus 3 inches on each end) is clean. After scraping, wipe the entire area with a clean lint-free cloth. Do not use solvents.

Apply high-voltage rubber tape one-half lapped over bare conductor. This tape should be tensioned as recommended by the manufacturer. Voids in the connector area may be eliminated by highly elongating the tape, stretching it just short of its breaking point. The manufacturer's recommendation for stretching tape during splicing shall be followed. Always attempt to exactly half-lap to produce a uniform buildup. Continue buildup to 1-1/2 times cable diameter over the body of the splice with ends tapered a distance of approximately one inch over the original jacket. Cover rubber tape with two layers of vinyl pressure-sensitive tape one-half lapped. Do not use glyptol or lacquer over vinyl tape as they react as solvents to the tape. No further cable covering, or splice boxes are required.

Heat shrinkable tubing shall be installed following manufacturer's instructions. Direct flame heating shall not be permitted unless recommended by the manufacturer. Cable surfaces within the limits of the heat-shrink application shall be clean and free of contaminates prior to application.

e. Assembly. Surfaces of equipment or conductors being terminated or connected shall be prepared in accordance with industry standard practice and manufacturer's recommendations. All surfaces to be connected shall be thoroughly cleaned to remove all dirt, grease, oxides, nonconductive films, or other foreign material. Paints and other nonconductive coatings shall be removed to expose base metal. Clean all surfaces at least 1/4 inch beyond all sides of the larger bonded area on all mating surfaces. Use a joint compound suitable for the materials used in the connection. Repair painted/coated surface to original condition after completing the connection.

108-3.6 Bare counterpoise wire installation for lightning protection and grounding. If shown on the plans or included in the job specifications, bare solid #6 AWG copper counterpoise wire shall be installed for lightning protection of the underground cables. The RPR shall select one of two methods of lightning protection for the airfield lighting circuit based upon sound engineering practice and lightning strike density.

a. Equipotential. – may be used by the RPR for areas that have high rates of lightning strikes. The counterpoise size is determined by the RPR. The equipotential method is applicable to all airfield lighting systems, i.e. runway, taxiway, apron – touchdown zone, centerline, edge, threshold, and approach lighting systems. The equipotential method is also successfully applied to provide lightning protection for power,

signal, and communication systems. The light bases, counterpoise, etc. – all components - are bonded together and bonded to the vault power system ground loop/electrode.

Counterpoise wire shall be installed in the same trench for the entire length of buried cable, conduits and duct banks that are installed to contain airfield cables. The counterpoise is centered over the cable/conduit/duct to be protected.

The counterpoise conductor shall be installed no less than 8 inches minimum or 12 inches maximum above the raceway or cable to be protected, except as permitted below:

(1) The minimum counterpoise conductor height above the raceway or cable to be protected shall be permitted to be adjusted subject to coordination with the airfield lighting and pavement designs.

(2) The counterpoise conductor height above the protected raceway(s) or cable(s) shall be calculated to ensure that the raceway or cable is within a 45-degree area of protection, (45 degrees on each side of vertical creating a 90-degree angle).

The counterpoise conductor shall be bonded to each metallic light base, mounting stake, and metallic airfield lighting component.

All metallic airfield lighting components in the field circuit on the output side of the constant current regulator (CCR) or other power source shall be bonded to the airfield lighting counterpoise system.

All components rise and fall at the same potential, with no potential difference, no damaging arcing and no damaging current flow.

See AC 150/5340-30, Design and Installation Details for Airport Visual Aids and NFPA 780, Standard for the Installation of Lightning Protection Systems, Chapter 11, for a detailed description of the Equipotential Method of lightning protection.

Reference FAA STD-019E, Lightning and Surge Protection, Grounding Bonding and Shielding Requirements for Facilities and Electronic Equipment, Part 4.1.1.7.

b. Isolation – used in areas where lightning strikes are not common. Counterpoise size is selected by the RPR. The isolation method is an alternate method for use only with edge lights installed in turf and stabilized soils and raceways installed parallel to and adjacent to the edge of the pavement. NFPA 780 uses 15 feet to define "adjacent to".

The counterpoise conductor shall be installed 8 inches (203 mm) minimum below grade. The counterpoise is not connected to the light base or mounting stake. An additional grounding electrode is required at each light base or mounting stake. The grounding electrode is bonded to the light base or mounting stake with a 6 AWG solid copper conductor.

See AC 150/5340-30, Design and Installation Details for Airport Visual Aids and NFPA 780, Standard for the Installation of Lightning Protection Systems, Chapter 11, for a detailed description of the Isolation Method of lightning protection.

c. Common installation requirements. When a metallic light base is used, the grounding electrode shall be bonded to the metallic light base or mounting stake with a No. 6 AWG bare, annealed or soft drawn, solid copper conductor.

When a nonmetallic light base is used, the grounding electrode shall be bonded to the metallic light fixture or metallic base plate with a No. 6 AWG bare, annealed or soft drawn, solid copper conductor.

Grounding electrodes may be rods, ground dissipation plates, radials, or other electrodes listed in the NFPA 70 (NEC) or NFPA 780.

Where raceway is installed by the directional bore, jack and bore, or other drilling method, the counterpoise conductor shall be permitted to be installed concurrently with the directional bore, jack and bore, or other drilling method raceway, external to the raceway or sleeve.

The counterpoise wire shall also be exothermically welded to ground rods installed as shown on the plans but not more than 500 feet apart around the entire circuit. The counterpoise system shall be continuous and terminate at the transformer vault or at the power source. It shall be securely attached to the vault or equipment external ground ring or other made electrode-grounding system. The connections shall be made as shown on the plans and in the specifications.

Where an existing airfield lighting system is being extended or modified, the new counterpoise conductors shall be interconnected to existing counterpoise conductors at each intersection of the new and existing airfield lighting counterpoise systems.

d. Parallel voltage systems. Provide grounding and bonding in accordance with NFPA 70, National Electrical Code.

108-3.7 Counterpoise installation above multiple conduits and duct banks. Counterpoise wires shall be installed above multiple conduits/duct banks for airfield lighting cables, with the intent being to provide a complete area of protection over the airfield lighting cables. When multiple conduits and/or duct banks for airfield cable are installed in the same trench, the number and location of counterpoise wires above the conduits shall be adequate to provide a complete area of protection measured 45 degrees each side of vertical.

Where duct banks pass under pavement to be constructed in the project, the counterpoise shall be placed above the duct bank. Reference details on the construction plans.

108-3.8 Counterpoise installation at existing duct banks. When airfield lighting cables are indicated on the plans to be routed through existing duct banks, the new counterpoise wiring shall be terminated at ground rods at each end of the existing duct bank where the cables being protected enter and exit the duct bank. The new counterpoise conductor shall be bonded to the existing counterpoise system.

108-3.9 Exothermic bonding. Bonding of counterpoise wire shall be by the exothermic welding process or equivalent method accepted by the RPR. Only personnel experienced in and regularly engaged in this type of work shall make these connections.

Contractor shall demonstrate to the satisfaction of the RPR, the welding kits, materials and procedures to be used for welded connections prior to any installations in the field. The installations shall comply with the manufacturer's recommendations and the following:

a. All slag shall be removed from welds.

b. Using an exothermic weld to bond the counterpoise to a lug on a galvanized light base is not recommended unless the base has been specially modified. Consult the manufacturer's installation directions for proper methods of bonding copper wire to the light base. See AC 150/5340-30 for galvanized light base exception.

c. If called for in the plans, all buried copper and weld material at weld connections shall be thoroughly coated with 6 mm of 3M™ Scotchkote™, or approved equivalent, or coated with coal tar Bitumastic® material to prevent surface exposure to corrosive soil or moisture.

108-3.10 Testing. The Contractor shall furnish all necessary equipment and appliances for testing the airport electrical systems and underground cable circuits before and after installation. The Contractor shall perform all tests in the presence of the RPR. The Contractor shall demonstrate the electrical characteristics to the satisfaction of the RPR. All costs for testing are incidental to the respective item being tested. For phased projects, the tests must be completed by phase. The Contractor must maintain the test results throughout the entire project as well as during the warranty period that meet the following:

a. Earth resistance testing methods shall be submitted to the RPR for approval. Earth resistance testing results shall be recorded on an approved form and testing shall be performed in the presence of the RPR. All such testing shall be at the sole expense of the Contractor.

b. Should the counterpoise or ground grid conductors be damaged or suspected of being damaged by construction activities the Contractor shall test the conductors for continuity with a low resistance ohmmeter. The conductors shall be isolated such that no parallel path exists and tested for continuity. The RPR shall approve of the test method selected. All such testing shall be at the sole expense of the Contractor.

After installation, the Contractor shall test and demonstrate to the satisfaction of the RPR the following:

c. That all affected lighting power and control circuits (existing and new) are continuous and free from short circuits.

d. That all affected circuits (existing and new) are free from unspecified grounds.

e. That the insulation resistance to ground of all new non-grounded high voltage series circuits or cable segments is not less than 100 megohms. Verify continuity of all series airfield lighting circuits prior to energization.

f. That the insulation resistance to ground of all new non-grounded conductors of new multiple circuits or circuit segments is not less than 100 megohms.

g. That all affected circuits (existing and new) are properly connected per applicable wiring diagrams.

h. That all affected circuits (existing and new) are operable. Tests shall be conducted that include operating each control not less than 10 times and the continuous operation of each lighting and power circuit for not less than 1/2 hour.

i. That the impedance to ground of each ground rod does not exceed 25 ohms prior to establishing connections to other ground electrodes. The fall-of-potential ground impedance test shall be used, as described by American National Standards Institute/Institute of Electrical and Electronic Engineers (ANSI/IEEE) Standard 81, to verify this requirement. As an alternate, clamp-on style ground impedance test meters may be used to satisfy the impedance testing requirement. Test equipment and its calibration sheets shall be submitted for review and approval by the RPR prior to performing the testing.

Two copies of tabulated results of all cable tests performed shall be supplied by the Contractor to the RPR. Where connecting new cable to existing cable, insulation resistance tests shall be performed on the new cable prior to connection to the existing circuit.

There are no approved "repair" procedures for items that have failed testing other than complete replacement.

METHOD OF MEASUREMENT

108-4.1 Cable installed in duct bank or conduit shall be measured by the number of linear feet installed with primary connector kits, grounding conductor and grounding connectors ready for operation, and accepted by Owner / Engineer. Separate measurement shall be made for each single cable (1/C), cable pair (2/C) or multiple conductor feeder set, installed in duct bank or conduit with associated ground wire and connections included in Contractor's price. The measurement for this item shall include additional quantities required for slack. No separate measurement will be made to multiply the number of individual conductors installed in a single conduit, in one installation effort.

108-4.2 Counterpoise wire and connections are considered incidental to the installation of duct bank or conduit, per item L-110. No separate payment will be made.

108-4.3 Ground rods shall be considered incidental to the installation of counterpoise, light base, transformer housing, sign or other grounding. No separate payment will be made.

BASIS OF PAYMENT

108-5.1 Payment will be made at the contract unit price for cable and equipment ground installed in duct bank or conduit, in place by the Contractor and accepted by the Engineer. This price shall be full compensation for furnishing all materials and for all preparation and installation of these materials, and for all labor, equipment, tools, and incidentals, including ground rods and ground connectors and trench marking tape, necessary to complete this item.

Payment will be made under:

No. 26, Spec No. L-108-5.1	L-824, Type C, 1/C #8 AWG, 5kV Cable – per Linear Foot
No. 27, Spec No. L-108-5.2	L-824, Type C, 2/C #8 AWG, 5kV Cable – per Linear Foot

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

Advisory Circulars (AC)

AC 150/5340-26	Maintenance of Airport Visual Aid Facilities
AC 150/5340-30	Design and Installation Details for Airport Visual Aids
AC 150/5345-7	Specification for L-824 Underground Electrical Cable for Airport Lighting Circuits
AC 150/5345-26	Specification for L-823 Plug and Receptacle, Cable Connectors
AC 150/5345-53	Airport Lighting Equipment Certification Program

Commercial Item Description

A-A-59544A	Cable and Wire, Electrical (Power, Fixed Installation)
A-A-55809	Insulation Tape, Electrical, Pressure-Sensitive Adhesive, Plastic

ASTM International (ASTM)

ASTM B3	Standard Specification for Soft or Annealed Copper Wire
ASTM B8	Standard Specification for Concentric-Lay-Stranded Copper Conductors, Hard, Medium-Hard, or Soft
ASTM B33	Standard Specification for Tin-Coated Soft or Annealed Copper Wire for Electrical Purposes

ASTM D4388	Standard Specification for Nonmetallic Semi-Conducting and Electrically Insulating Rubber Tapes
Mil Spec	
MIL-PRF-23586F	Performance Specification: Sealing Compound (with Accelerator), Silicone Rubber, Electrical
MIL-I-24391	Insulation Tape, Electrical, Plastic, Pressure Sensitive
National Fire Protection Association (NFPA)	
NFPA-70	National Electrical Code (NEC)
NFPA-780	Standard for the Installation of Lightning Protection Systems
American National Standards Institute (ANSI)/Institute of Electrical and Electronics Engineers (IEEE)	
ANSI/IEEE STD 81	IEEE Guide for Measuring Earth Resistivity, Ground Impedance, and Earth Surface Potentials of a Ground System
Federal Aviation Administration Standard	
FAA STD-019E	Lightning and Surge Protection, Grounding Bonding and Shielding Requirements for Facilities and Electronic Equipment

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ITEM L-110 AIRPORT UNDERGROUND ELECTRICAL DUCT BANKS AND CONDUITS

DESCRIPTION

110-1.1 This item shall consist of underground electrical conduits and duct banks (single or multiple conduits encased in concrete or buried in sand) installed per this specification at the locations and per the dimensions, designs, and details shown on the plans. This item shall include furnishing and installing of all underground electrical duct banks and individual and multiple underground conduits. It shall also include all turfing trenching, backfilling, removal, and restoration of any paved or turfed areas; concrete encasement, mandrelling, pulling lines, duct markers, plugging of conduits, and the testing of the installation as a completed system ready for installation of cables per the plans and specifications. This item shall also include furnishing and installing conduits, counterpoise conductor, ground rods and connections including all incidentals for providing positive drainage of the system. Verification of existing ducts is incidental to the pay items provided in this specification.

EQUIPMENT AND MATERIALS

110-2.1 General.

a. All equipment and materials covered by referenced specifications shall be subject to acceptance through manufacturer's certification of compliance with the applicable specification when requested by the Engineer.

b. Manufacturer's certifications shall not relieve the Contractor of the responsibility to provide materials per these specifications and acceptable to the Engineer. Materials supplied and/or installed that do not comply with these specifications shall be removed, when directed by the Engineer and replaced with materials that comply with these specifications, at the Contractor's cost.

c. All materials and equipment used to construct this item shall be submitted to the Engineer for approval prior to ordering the equipment. Submittals consisting of marked catalog sheets or shop drawings shall be provided. Submittal data shall be presented in a clear, precise, and thorough manner. Original catalog sheets are preferred. Photocopies are acceptable provided they are as good a quality as the original. Clearly and boldly mark each copy to identify products or models applicable to this project. Indicate all optional equipment and delete non-pertinent data. Submittals for components of electrical equipment and systems shall identify the equipment for which they apply on each submittal sheet. Markings shall be made bold and clear with arrows or circles (highlighting is not acceptable). The Contractor is solely responsible for delays in project that accrue directly or indirectly from late submissions or resubmissions of submittals.

d. The data submitted shall be sufficient, in the opinion of the Engineer, to determine compliance with the plans and specifications. The Contractor's submittals shall be Electronic PDF, labeled and tabbed by specification section. The Engineer reserves the right to reject any and all equipment, materials or procedures that do not meet the system design and the standards and codes specified in this document.

e. All equipment and materials furnished and installed under this section shall be guaranteed against defects in materials and workmanship for a period of at least twelve (12) months from final acceptance by the Owner. The defective materials and/or equipment shall be repaired or replaced, at the Owner's discretion, with no additional cost to the Owner.

110-2.2 Steel Conduit. Rigid galvanized steel (RGS) conduit and fittings shall be hot dipped galvanized inside and out and conform to the requirements of Underwriters Laboratories Standards 6, 514B, and 1242. All RGS conduits or RGS elbows installed below grade, in concrete, permanently wet locations or other similar environments shall be painted with a 10-mil thick coat of asphaltum sealer or shall have a factory bonded polyvinyl chloride (PVC) cover. Any exposed galvanizing or steel shall be coated with 10 mil of asphaltum sealer. When using PVC coated RGS conduit, care shall be exercised not to damage the factory PVC coating. Damaged PVC coating shall be repaired per the manufacturer's written instructions.

110-2.3 Plastic Conduit. Plastic conduit and fittings-shall conform to the following requirements:

- UL 514B covers W-C-1094-Conduit fittings all types, classes 1 thru 3 and 6 thru 10.
- UL 514C covers W-C-1094- all types, Class 5 junction box and cover in plastic (PVC).
- UL 651 covers W-C-1094-Rigid PVC Conduit, types I and II, Class 4.
- UL 651A covers W-C-1094-Rigid PVC Conduit and high-density polyethylene (HDPE) Conduit type III and Class 4.

Underwriters Laboratories Standards UL-651 and Article 352 of the current National Electrical Code shall be one of the following, as shown on the plans:

a. Type I–Schedule 40 PVC suitable for underground use either direct-buried or encased in concrete.

b. Type II–Schedule 40 PVC suitable for either above ground or underground use.

c. Type III – Schedule 80 PVC suitable for either above ground or underground use either direct-buried or encased in concrete.

d. Type III –HDPE pipe, minimum standard dimensional ratio (SDR) 11, suitable for placement with directional boring under pavement.

The type of solvent cement shall be as recommended by the conduit/fitting manufacturer.

110-2.4 Split Conduit. Split conduit shall be pre-manufactured for the intended purpose and shall be made of steel or plastic.

110-2.5 Conduit Spacers. Conduit spacers shall be prefabricated interlocking units manufactured for the intended purpose. They shall be of double wall construction made of high grade, high density polyethylene complete with interlocking cap and base pads, they shall be designed to accept No. 4 reinforcing bars installed vertically.

110-2.6 Concrete. Concrete shall conform to Item P-610, Structural Portland Cement Concrete, using 1-inch maximum size coarse aggregate with a minimum 28-day compressive strength of 4000 psi. Where reinforced duct banks are specified, reinforcing steel shall conform to ASTM A615 Grade 60. Concrete and reinforcing steel are incidental to the respective pay item of which they are a component part.

110-2.7 Flowable Backfill. Flowable material used to back fill conduit and duct bank trenches shall conform to the requirements of Item P-153, Controlled Low Strength Material. Fill shall be designed to achieve a 28-day compressive strength of 200 psi (1.4 MPa) under pavement.

110-2.8 Detectable Warning Tape. Plastic, detectable, American Wood Preservers Association (AWPA) Red (electrical power lines, cables, conduit, and lighting cable) with continuous legend magnetic tape shall be polyethylene film with a metallized foil core and shall be 3-6 inches wide. Detectable tape is incidental to the respective bid item.

110-2.9 Retro-Fit Existing Pavement. Where conduit is installed under existing asphalt shoulder pavement, Contractor shall saw cut and remove existing section prior to excavation, conduit and counterpoise installation and slurry backfill. Contractor shall repair/replace shoulder pavement in kind. Anticipate 3" of asphalt on 8" of aggregate base. Compaction shall be per P-405, P-201, and P-152 requirements. All saw cut and pavement repair / replacement shall be considered incidental to the associated item being installed (i.e. there is no separate measurement of payment).

CONSTRUCTION METHODS

110-3.1 General. The Contractor shall install underground duct banks and conduits at the approximate locations indicated on the plans. The Engineer shall indicate specific locations as the work progresses, if required to differ from the plans. Duct banks and conduits shall be of the size, material, and type indicated on the plans or specifications. Where no size is indicated on the plans or in the specifications, conduits shall be not less than 2 inches inside diameter or comply with the National Electrical Code based on cable to be installed, whichever is larger. All duct bank and conduit lines shall be laid so as to grade toward access points and duct or conduit ends for drainage. Unless shown otherwise on the plans, grades shall be at least 3 inches per 100 feet. On runs where it is not practicable to maintain the grade all one way, the duct bank and conduit lines shall be graded from the center in both directions toward access points or conduit ends, with a drain into the storm drainage system. Pockets or traps where moisture may accumulate shall be avoided. No duct bank or underground conduit shall be less than 18 inches below finished grade. Where under pavement, the top of the duct bank shall not be less than 18 inches below the subgrade.

The Contractor shall mandrel each individual conduit whether the conduit is direct-buried or part of a duct bank. An iron-shod mandrel, not more than 1/4 inch smaller than the bore of the conduit shall be pulled or pushed through each conduit. The mandrel shall have a leather or rubber gasket slightly larger than the conduit hole.

The Contractor shall swab out all conduits/ducts and clean base can, manhole, pull boxes, etc., interiors IMMEDIATELY prior to pulling cable. Once cleaned and swabbed the light bases, manholes, pull boxes,

etc., and all accessible points of entry to the duct/conduit system shall be kept closed except when installing cables. Cleaning of ducts, base cans, manholes, etc., is incidental to the pay item of the item being cleaned. All raceway systems left open, after initial cleaning, for any reason shall be re-cleaned at the Contractor's expense. All accessible points shall be kept closed when not installing cable. The Contractor shall verify existing ducts proposed for use in this project as clear and open. The Contractor shall notify the Engineer of any blockage in the existing ducts.

For pulling the permanent wiring, each individual conduit, whether the conduit is direct-buried or part of a duct bank, shall be provided with a 200-pound test polypropylene pull rope. The ends shall be secured, and sufficient length shall be left in access points to prevent it from slipping back into the conduit. Where spare conduits are installed, as indicated on the plans, the open ends shall be plugged with removable tapered plugs, designed for this purpose.

All conduits shall be securely fastened in place during construction and shall be plugged to prevent contaminants from entering the conduits. Any conduit section having a defective joint shall not be installed. Ducts shall be supported and spaced apart using approved spacers at intervals not to exceed 5 feet.

Unless otherwise shown on the plans, concrete encased duct banks shall be used when crossing under pavements expected to carry aircraft loads, such as runways, taxiways, taxi-lanes, ramps, and aprons. When under paved shoulders and other paved areas, conduit and duct banks shall be encased using flow-able fill for protection.

All conduits within concrete encasement of the duct banks shall terminate with female ends for ease in current and future use. Install factory plugs in all unused ends. Do not cover the ends or plugs with concrete.

Where turf is well established and the sod can be removed, it shall be carefully stripped and properly stored.

Trenches for conduits and duct banks may be excavated manually or with mechanical trenching equipment unless in pavement, in which case they shall be excavated with mechanical trenching equipment. Walls of trenches shall be essentially vertical so that a minimum of shoulder surface is disturbed. Blades of graders shall not be used to excavate the trench.

When rock is encountered, the rock shall be removed to a depth of at least 3 inches below the required conduit or duct bank depth and it shall be replaced with bedding material of earth or sand containing no mineral aggregate particles that would be retained on a 1/4 inch sieve. Flow-able backfill may alternatively be used The Contractor shall ascertain the type of soil or rock to be excavated before bidding. All such rock removal shall be performed and paid for under Item P-152.

Underground electrical warning (Caution) tape shall be installed in the trench above all underground duct banks and conduits in unpaved areas. Contractor shall submit a sample of the proposed warning tape for approval by the Engineer. If not shown on the plans, the warning tape shall be located 6 inches above the duct/conduit or the counterpoise wire if present.

Joints in plastic conduit shall be prepared per the manufacturer's recommendations for the particular type of conduit. Plastic conduit shall be prepared by application of a plastic cleaner and brushing a plastic solvent on the outside of the conduit ends and on the inside of the couplings. The conduit fitting shall then be slipped together with a quick one-quarter turn twist to set the joint tightly. Where more than one conduit is placed in a single trench, or in duct banks, joints in the conduit shall be staggered a minimum of 2 feet.

Changes in direction of runs exceeding 10 degrees, either vertical or horizontal, shall be accomplished using manufactured sweep bends.

Whether or not specifically indicated on the drawings, where the soil encountered at established duct bank grade is an unsuitable material, as determined by the Engineer, the unsuitable material shall be removed per Item P-152 and replaced with suitable material. Alternatively, additional duct bank supports that are adequate and stable shall be installed, as approved by the Engineer.

All excavation shall be unclassified and shall be considered incidental to the respective L-110 pay item of which it is a component part. Dewatering necessary for duct installation, erosion, and turbidity control, per Federal, state, and local requirements is incidental to its respective pay item as a part of Item L-110. The cost of all excavation regardless of type of material encountered shall be included in the unit price bid for the L-110 Item.

Unless otherwise specified, excavated materials that are deemed by the Engineer to be unsuitable for use in backfill or embankments shall be removed and disposed of offsite.

Any excess excavation shall be filled with suitable material approved by the Engineer and compacted per Item P-152.

It is the Contractor's responsibility to locate existing utilities within the work area prior to excavation. Where existing active cables cross proposed installations, the Contractor shall ensure that these cables are adequately protected. Where crossings are unavoidable, no splices will be allowed in the existing cables, except as specified on the plans. Installation of new cable where such crossings must occur shall proceed as follows:

a. Existing cables shall be located manually. Unearthed cables shall be inspected to assure absolutely no damage has occurred

b. Trenching, etc., in cable areas shall then proceed with approval of the Engineer, with care taken to minimize possible damage or disruption of existing cable, including careful backfilling in area of cable.

In the event that any previously identified cable is damaged during the course of construction, the Contractor shall be responsible for the complete repair.

110-3.2 Duct Banks. Unless otherwise shown in the plans, duct banks shall be installed so that the top of the concrete envelope is not less than 18 inches below the bottom of the base or stabilized base course layers where installed under runways, taxiways, aprons, or other paved areas, and not less than 18 inches below finished grade where installed in unpaved areas.

Unless otherwise shown on the plans, duct banks under paved areas shall extend at least 3 feet beyond the edges of the pavement or 3 feet beyond any under drains that may be installed alongside the paved area. Trenches for duct banks shall be opened the complete length before concrete is placed so that if any obstructions are encountered, provisions can be made to avoid them. Unless otherwise shown on the plans, all duct banks shall be placed on a layer of concrete not less than 3 inches thick prior to its initial set. The Contractor shall space the conduits not less than 3 inches apart (measured from outside wall to outside wall). All such multiple conduits shall be placed using conduit spacers applicable to the type of conduit. As

the conduit laying progresses, concrete shall be placed around and on top of the conduits not less than 3 inches thick unless otherwise shown on the plans. All conduits shall terminate with female ends for ease of access in current and future use. Install factory plugs in all unused ends. Do not cover the ends or plugs with concrete.

Conduits forming the duct bank shall be installed using conduit spacers. No. 4 reinforcing bars shall be driven vertically into the soil a minimum of 6 inches to anchor the assembly into the earth prior to placing the concrete encasement. For this purpose, the spacers shall be fastened down with locking collars attached to the vertical bars. Spacers shall be installed at 5-foot intervals. Spacers shall be in the proper sizes and configurations to fit the conduits. Locking collars and spacers shall be submitted to the Engineer for review prior to use.

When specified, the Contractor shall reinforce the bottom side and top of encasements with steel reinforcing mesh or fabric or other approved metal reinforcement. When directed, the Contractor shall supply additional supports where the ground is soft and boggy, where ducts cross under roadways, or where shown on the plans. Under such conditions, the complete duct structure shall be supported on reinforced concrete footings, piers, or piles located at approximately 5-foot intervals.

All pavement surfaces that are to have ducts installed therein shall be neatly saw cut to form a vertical face. All excavation shall be included in the contract with price for the duct.

Install a plastic, detectable, color as noted, 3 to 6 inches wide tape, 8 inches minimum below grade above all underground conduit or duct lines not installed under pavement. Utilize the 3-inch wide tape only for single conduit runs. Utilize the 6-inch wide tape for multiple conduits and duct banks. For duct banks equal to or greater than 24 inches in width, utilize more than one tape for sufficient coverage and identification of the duct bank as required.

When existing cables are to be placed in split duct, encased in concrete, the cable shall be carefully located and exposed by hand tools. Prior to being placed in duct, the Engineer shall be notified so that he may inspect the cable and determine that it is in good condition. Where required, split duct shall be installed as shown on the drawings or as required by the Engineer.

110-3.3 Conduits Without Concrete Encasement. Trenches for single-conduit lines shall be not less than 6 inches nor more than 12 inches wide. The trench for 2 or more conduits installed at the same level shall be proportionately wider. Trench bottoms for conduits without concrete encasement shall be made to conform accurately to grade so as to provide uniform support for the conduit along its entire length.

Unless otherwise shown on the plans, a layer of fine earth material, at least 4 inches thick (loose measurement) shall be placed in the bottom of the trench as bedding for the conduit. The bedding material shall consist of soft dirt, sand, or other fine fill, and it shall contain no particles that would be retained on a 1/4-inch sieve. The bedding material shall be tamped until firm. Flow-able backfill may alternatively be used.

Unless otherwise shown on plans, conduits shall be installed so that the tops of all conduits within the Airport's secured area where trespassing is prohibited are at least 18 inches below the finished grade. Conduits outside the Airport's secured area shall be installed so that the tops of the conduits are at least 24 inches below the finished grade per National Electric Code (NEC), Table 300.5.

When two or more individual conduits intended to carry conductors of equivalent voltage insulation rating are installed in the same trench without concrete encasement, they shall be spaced not less than 3 inches apart (measured from outside wall to outside wall) in a horizontal direction and not less than 6 inches apart in a vertical direction. Where two or more individual conduits intended to carry conductors of differing voltage insulation rating are installed in the same trench without concrete encasement, they shall be placed not less than 3 inches apart (measured from outside wall to outside wall) in a horizontal direction and lot less than 6 inches apart in a vertical direction.

Trenches shall be opened the complete length between normal termination points before conduit is installed so that if any unforeseen obstructions are encountered, proper provisions can be made to avoid them.

Conduits shall be installed using conduit spacers. No. 4 reinforcing bars shall be driven vertically into the soil a minimum of 6 inches to anchor the assembly into the earth while backfilling. For this purpose, the spacers shall be fastened down with locking collars attached to the vertical bars. Spacers shall be installed at 5-foot intervals. Spacers shall be in the proper sizes and configurations to fit the conduits. Locking collars and spacers shall be submitted to the Engineer for review prior to use.

110-3.4 Markers. The location of each end and of each change of direction of conduits and duct banks shall be marked by a concrete slab marker 2 feet square and 4 - 6 inches thick extending approximately one inch above the surface. The markers shall also be located directly above the ends of all conduits or duct banks, except where they terminate in a junction/access structure or building. Each cable or duct run from a line of lights and signs to the equipment vault must be marked at approximately every 200 feet along the cable or duct run, with an additional marker at each change of direction of cable or duct run.

The Contractor shall impress the word "DUCT" or "CONDUIT" on each marker slab. Impression of letters shall be done in a manner, approved by the Engineer, for a neat, professional appearance. All letters and words must be neatly stenciled. After placement, all markers shall be given one coat of high-visibility orange paint, as approved by the Engineer. The Contractor shall also impress on the slab the number and size of conduits beneath the marker along with all other necessary information as determined by the Engineer. The letters shall be 4 inches high and 3 inches wide with width of stroke 1/2 inch and 1/4-inch-deep or as large as the available space permits. Furnishing and installation of duct markers is incidental to the respective duct pay item.

110-3.5 Backfilling for Conduits. For conduits, 8 inches of sand, soft earth, or other fine fill (loose measurement) shall be placed around the conduits ducts and carefully tamped around and over them with hand tampers. The remaining trench shall then be backfilled and compacted per Item P-152 "Excavation and Embankment" except that material used for back fill shall be select material not larger than 4 inches in diameter.

Flow-able backfill may alternatively be used.

Trenches shall not contain pools of water during back filling operations.

The trench shall be completely backfilled and tamped level with the adjacent surface; except that, where sod is to be placed over the trench, the backfilling shall be stopped at a depth equal to the thickness of the sod to be used, with proper allowance for settlement.

Any excess excavated material shall be removed and disposed of per instructions issued by the Engineer.

110-3.6 Backfilling for Duct Banks. After the concrete has cured, the remaining trench shall be backfilled and compacted per Item P-152 "Excavation and Embankment" except that the material used for backfill shall be select material not larger than 4 inches in diameter. In addition to the requirements of P-152, where duct banks are installed under pavement, one moisture/density test per lift shall be made for each 250 linear feet of duct bank or one work period's construction, whichever is less.

Flow-able backfill may alternatively be used.

Trenches shall not contain pools of water during backfilling operations.

The trench shall be completely backfilled and tamped level with the adjacent surface; except that, where sod is to be placed over the trench, the backfilling shall be stopped at a depth equal to the thickness of the sod to be used, with proper allowance for settlement.

Any excess excavated material shall be removed and disposed of per instructions issued by the Engineer.

110-3.7 Restoration. All areas disturbed by the work shall be restored to its original condition. The Contractor shall be held responsible for maintaining all disturbed surfaces and replacements until final acceptance. All restoration shall be considered incidental to the respective L-110 pay item. Following restoration of all trenching near airport movement surfaces, the Contractor shall thoroughly visually inspect the area for foreign object debris (FOD) and remove any such FOD that is found. This FOD inspection and removal shall be considered incidental to the pay item of which it is a component part.

METHOD OF MEASUREMENT

110-4.1 Underground conduits and duct banks shall be measured by the linear feet of conduits and duct banks installed, including encasement, counterpoise conductor, ground rods and connections, locator tape, trenching and backfill with designated material, and for drain lines, the termination at the drainage structure, all measured in place, completed, and accepted. Separate measurement shall be made for the various types and sizes.

110-4.2 Retrofit conduits in existing asphalt shoulder pavement shall include saw cutting, slurry backfill and replacement / patch of asphalt pavement in kind.

BASIS OF PAYMENT

110-5.1 Payment will be made at the contract unit price per linear foot for each type and size of conduit and duct bank completed and accepted, including trench and backfill with the designated material, and, for drain lines, the termination at the drainage structure. This price shall be full compensation for furnishing all materials and for all preparation, assembly, and installation of these materials, and for all labor, equipment, tools, and incidentals necessary to complete this item per the provisions and intent of the plans and specifications.

Payment will be made under:

No. 28, Spec No. L-110-5.1 Single-Way 1-2" Conduit Direct Buried – per Linear Foot

No. 29, Spec No. L-110-5.2	Multiple-Way 2-2" Conduit Concrete Encased – per Linear Foot
No. 30, Spec No. L-110-5.3	Multiple-Way 4-2" Conduit Concrete Encased – per Linear Foot

MATERIAL REQUIREMENTS

Advisory Circular

AC 150/5340-30	Design and Installation Details for Airport Visual Aids
AC 150/5345-53	Airport Lighting Equipment Certification Program

ASTM International (ASTM)

ASTM A615	Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement
ASTM D1556	Standard Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method
ASTM D1557	Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft^3(2,700 kN-m/m^3))
ASTM D2167	Standard Test Method for Density and Unit Weight of Soil in Place by the Rubber Balloon Method
ASTM D2922	Standard Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)

NFPA-70 National Electrical Code (NEC)

Underwriters Laboratories Standard 6	Electrical Rigid Metal Conduit - Steel
Underwriters Laboratories Standard 514B	Conduit, Tubing, and Cable Fittings
Underwriters Laboratories Standard 514C	Nonmetallic Outlet Boxes, Flush-Device Boxes, and Covers
Underwriters Laboratories Standard 1242	Electrical Intermediate Metal Conduit Steel
Underwriters Laboratories Standard 651	Schedule 40, 80, Type EB and A Rigid PVC Conduit and Fittings
Underwriters Laboratories Standard 651A	Type EB and A Rigid PVC Conduit and HDPE Conduit

END OF ITEM L-110

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ITEM L-115 ELECTRICAL MANHOLES AND JUNCTION STRUCTURES

DESCRIPTION

115-1.1 This item shall consist of electrical manholes and junction structures (hand holes, pull boxes, junction cans, etc.) installed per this specification, at the indicated locations and conforming to the lines, grades and dimensions shown on the plans or as required by the Engineer. This item shall include the installation of each electrical manhole and/or junction structures with all associated excavation, backfilling, sheeting and bracing, concrete, reinforcing steel, ladders, appurtenances, testing, dewatering and restoration of surfaces to the satisfaction of the Engineer.

EQUIPMENT AND MATERIALS

115-2.1 General.

All equipment and materials covered by referenced specifications shall be subject to acceptance through manufacturer's certification of compliance with the applicable specification when so requested by the Engineer.

Manufacturer's certifications shall not relieve the Contractor of the responsibility to provide materials per these specifications. Materials supplied and/or installed that do not comply with these specifications shall be removed (when directed by the Engineer) and replaced with materials that comply with these specifications at the Contractor's cost.

All materials and equipment used to construct this item shall be submitted to the Engineer for approval prior to ordering the equipment. Submittals consisting of marked catalog sheets or shop drawings shall be provided. Submittal data shall be presented in a clear, precise, and thorough manner. Original catalog sheets are preferred. Photocopies are acceptable provided they are as good a quality as the original. Clearly and boldly mark each copy to identify products or models applicable to this project. Indicate all optional equipment and delete any non-pertinent data. Submittals for components of electrical equipment and systems shall identify the equipment to which they apply on each submittal sheet. Markings shall be made bold and clear with arrows or circles (highlighting is not acceptable). The Contractor is solely responsible for delays in the project that may accrue directly or indirectly from late submissions or resubmissions of submittals.

The data submitted shall be sufficient, in the opinion of the Engineer, to determine compliance with the plans and specifications. The Contractor's submittals shall be Electronic PDF, labeled and tabbed by specification section. The Engineer reserves the right to reject any and all equipment, materials or procedures that do not meet the system design and the standards and codes, specified in this document.
All equipment and materials furnished and installed under this section shall be guaranteed against defects in materials and workmanship for a period of at least twelve (12) months from the date of final acceptance by the Owner. The defective materials and/or equipment shall be repaired or replaced, at the Owner's discretion, with no additional cost to the Owner.

115-2.2 Concrete structures. Cast-in-place concrete structures are not used.

Provide precast concrete structures where shown on the plans. Precast concrete structures shall be an approved standard design of the manufacturer. Precast units shall have mortar or bitumastic sealer placed between all joints to make them watertight. The structure shall be designed to withstand **100,000** lbs. aircraft loads, unless otherwise shown on the plans. Openings or knockouts shall be provided in the structure as detailed on the plans.

Threaded inserts and pulling eyes shall be cast in as shown.

If the Contractor chooses to propose a different structural design, signed and sealed shop drawings, design calculations, and other information requested by the Engineer shall be submitted by the Contractor to allow for a full evaluation by the Engineer. The Engineer shall review per the process defined in the General Provisions.

115-2.3 Junction Boxes. Junction boxes shall be L-867 Class 1 (non-load bearing) or L-868 Class 1 (load bearing) airport light bases that are encased in concrete. The light bases shall have a galvanized steel blank cover, gasket, and stainless steel or coated steel hardware per FAA Engineering Brief (EB) #83. Covers shall be 3/8-inch thickness for L-867 and 3/4-inch thickness for L-868.

115-2.4 Mortar. The mortar shall be composed of one part of Portland cement and two parts of mortar sand, by volume. The Portland cement shall be per the requirements in ASTM C150, Type I. The sand shall be per the requirements in ASTM C144. Hydrated lime may be added to the mixture of sand and cement in an amount not to exceed 15% of the weight of cement used. The hydrated lime shall meet the requirements of ASTM C6. Water shall be potable, reasonably clean and free of oil, salt, acid, alkali, sugar, vegetable, or other substances injurious to the finished product.

115-2.5 Concrete. All concrete used in structures shall conform to the requirements of Item P-610, Structural Portland Cement Concrete.

115-2.6 Frames and Covers. The frames shall conform to one of the following requirements:

a.	ASTM A48	Gray iron castings
b.	ASTM A47	Malleable iron castings
c.	ASTM A27	Steel castings
d.	ASTM A283, Grade D	Structural steel for grates and frames
e.	ASTM A536	Ductile iron castings
f.	ASTM A897	Austempered ductile iron castings

All castings specified shall withstand a maximum tire pressure of **125** psi and maximum load of **100,000** lbs.

All castings or structural steel units shall conform to the dimensions shown on the plans and shall be designed to support the loadings specified.

Each frame and cover unit shall be provided with fastening members to prevent it from being dislodged by traffic, but which will allow easy removal for access to the structure.

All castings shall be thoroughly cleaned. After fabrication, structural steel units shall be galvanized to meet the requirements of ASTM A123.

Each cover shall have the word "**ELECTRIC**" or other approved designation cast on it. Each frame and cover shall be as shown on the plans or approved equivalent. No cable notches are required.

Each manhole shall be provided with a "**DANGER -- PERMIT-REQUIRED CONFINED SPACE, DO NOT ENTER**" safety warning sign as detailed in the Contract Documents and in accordance with OSHA 1910.146 (c)(2).

115-2.7 Ladders. Ladders, if specified, shall be galvanized steel or as shown on the plans.

115-2.8 Reinforcing Steel. All reinforcing steel shall be deformed bars of new billet steel meeting the requirements of ASTM A615, Grade 60.

115-2.9 Bedding/Special Backfill. Bedding or special backfill shall be as shown on the plans.

115-2.10 Flowable Backfill. Flowable material used to backfill shall conform to the requirements of Item P-153, Controlled Low Strength Material.

115-2.11 Cable Racks. Cable Racks shall be of non-conductive plastic. Cable racks shall be located as shown on the plans.

115-2.12 Plastic Conduit. Plastic conduit shall comply with Item L-110, Airport Underground Electrical Duct Banks and Conduits.

115-2.13 Conduit Terminators. Conduit terminators shall be pre-manufactured for the specific purpose and sized as required or as shown on the plans.

115-2.14 Pulling-In Irons. Pulling-in irons shall be manufactured with 7/8-inch diameter hot-dipped galvanized steel or stress-relieved carbon steel roping designed for concrete applications (7 strand, 1/2 inch diameter with an ultimate strength of 270,000 psi (1862 MPa)). Where stress-relieved carbon steel roping is used, a rustproof sleeve shall be installed at the hooking point and all exposed surfaces shall be encapsulated with a polyester coating to prevent corrosion.

115-2.15 Ground Rods. Ground rods shall be one piece, copper clad**.** The ground rods shall be of the length and diameter specified on the plans, but in no case shall they be less than 10 feet long nor less than ¾ inch in diameter.

CONSTRUCTION METHODS

115-3.1 Unclassified excavation. It is the Contractor's responsibility to locate existing utilities within the work area prior to excavation. Damage to utility lines, through lack of care in excavating, shall be repaired or replaced to the satisfaction of the Engineer without additional expense to the Owner.

The Contractor shall perform excavation for structures and structure footings to the lines and grades or elevations shown on the plans or as staked by the Engineer. The excavation shall be of sufficient size to permit the placing of the full width and length of the structure or structure footings shown.

All excavation shall be unclassified and shall be considered incidental to the respective L-115 pay item of which it is a component part. Dewatering necessary for L-115 structure installation, erosion and turbidity control, per Federal, state, and local requirements is incidental to its respective pay item as a part of Item L-115. The cost of all excavation regardless of type of material encountered, shall be included in the unit price bid for the L-115 Item.

Boulders, logs and all other objectionable material encountered in excavation shall be removed. All rock and other hard foundation material shall be cleaned of all loose material and cut to a firm surface either level, stepped or serrated, as directed by the Engineer. All seams, crevices, disintegrated rock and thin strata shall be removed. When concrete is to rest on a surface other than rock, special care shall be taken not to disturb the bottom of the excavation. Excavation to final grade shall not be made until just before the concrete or reinforcing is to be placed.

The Contractor shall provide all bracing, sheeting and shoring necessary to implement and protect the excavation and the structure as required for safety or conformance to governing laws. The cost of bracing, sheeting, and shoring shall be included in the unit price bid for the structure.
Unless otherwise provided, bracing, sheeting and shoring involved in the construction of this item shall be removed by the Contractor after the completion of the structure. Removal shall be effected in a manner that will not disturb, or mar finished masonry. The cost of removal shall be included in the unit price bid for the structure.

After each excavation is completed, the Contractor shall notify the Engineer. Structures shall be placed after the Engineer has approved the depth of the excavation and the suitability of the foundation material.
Prior to installation the Contractor shall provide a minimum of 12 inches of ¾" gravel or a material approved by the Engineer as a suitable base to receive the structure. The base material shall be compacted and graded level and at proper elevation to receive the structure in proper relation to the conduit grade or ground cover requirements, as indicated on the plans.

115-3.2 Concrete Structures. Concrete structures shall be built on prepared foundations conforming to the dimensions and form indicated on the plans. The concrete and construction methods shall conform to the requirements specified in Item P-610. Any reinforcement required shall be placed as indicated on the plans and shall be approved by the Engineer before the concrete is placed.

115-3.3 Precast Unit Installations. Precast units shall be installed plumb and true. Joints shall be made watertight by use of sealant at each tongue-and-groove joint and at roof of manhole. Excess sealant shall be removed and severe surface projections on exterior of neck shall be removed.

115-3.4 Placement and Treatment of Castings, Frames and Fittings. All castings, frames and fittings shall be placed in the positions indicated on the Plans or as directed by the Engineer and shall be set true to line and to correct elevation. If frames or fittings are to be set in concrete or cement mortar, all anchors or bolts shall be in place and position before the concrete or mortar is placed. The unit shall not be disturbed until the mortar or concrete has set.

Field connections shall be made with bolts, unless indicated otherwise. Welding will not be permitted unless shown otherwise on the approved shop drawings and written permission is granted by the casting manufacturer. Erection equipment shall be suitable and safe for the workman. Errors in shop fabrication or deformation resulting from handling and transportation that prevent the proper assembly and fitting of parts shall be reported immediately to the Engineer and approval of the method of correction shall be obtained. Approved corrections shall be made at Contractor's expense.

Anchor bolts and anchors shall be properly located and built into connection work. Bolts and anchors shall be preset by the use of templates or such other methods as may be required to locate the anchors and anchor bolts accurately.

Pulling-in irons shall be located opposite all conduit entrances into structures to provide a strong, convenient attachment for pulling-in blocks when installing cables. Pulling-in irons shall be set directly into the concrete walls of the structure.

115-3.5 Installation of Ladders. Not Used.

115-3.6 Removal of Sheeting and Bracing. In general, all sheeting and bracing used to support the sides of trenches or other open excavations shall be withdrawn as the trenches or other open excavations are being refilled. That portion of the sheeting extending below the top of a structure shall be withdrawn, unless otherwise directed, before more than 6 inches of material is placed above the top of the structure and before any bracing is removed. Voids left by the sheeting shall be carefully refilled with selected material and rammed tight with tools especially adapted for the purpose or otherwise as may be approved.
The Engineer may order the Contractor to delay the removal of sheeting and bracing if, in his judgment, the installed work has not attained the necessary strength to permit placing of backfill.

115-3.7 Backfilling. After a structure has been completed, the area around it shall be backfilled in horizontal layers not to exceed 6 inches in thickness measured after compaction to the density requirements in Item P-152. Each layer shall be deposited all around the structure to approximately the same elevation. The top of the fill shall meet the elevation shown on the plans or as directed by the Engineer.
Backfill shall not be placed against any structure until permission is given by the Engineer. In the case of concrete, such permission shall not be given until tests made by the laboratory under supervision of the Engineer establish that the concrete has attained sufficient strength to provide a factor of safety against damage or strain in withstanding any pressure created by the backfill or the methods used in placing it.
Where required, the Engineer may direct the Contractor to add, at his own expense, sufficient water during compaction to assure a complete consolidation of the backfill. The Contractor shall be responsible for all damage or injury done to conduits, duct banks, structures, property, or persons due to improper placing or compacting of backfill.

115-3.8 Connection of Duct Banks. To relieve stress of joint between concrete-encased duct banks and structure walls, reinforcement rods shall be placed in the structure wall and shall be formed and tied into duct bank reinforcement at the time the duct bank is installed.

115-3.9 Grounding. A ground rod shall be installed in the floor of all concrete structures so that the top of rod extends 6 inches above the floor. The ground rod shall be installed within one foot of a corner of the concrete structure. Ground rods shall be installed prior to casting the bottom slab. Where the soil

condition does not permit driving the ground rod into the earth without damage to the ground rod, the Contractor shall drill a 4-inch diameter hole into the earth to receive the ground rod. The hole around the ground rod shall be filled throughout its length, below slab, with Portland cement grout. Ground rods shall be installed in precast bottom slab of structures by drilling a hole through bottom slab and installing the ground rod. Bottom slab penetration shall be sealed watertight with Portland cement grout around the ground rod.

A grounding bus of 4/0 bare stranded copper shall be exothermically bonded to the ground rod and loop the concrete structure walls. The ground bus shall be a minimum of one foot above the floor of the structure and separate from other cables. No. 2 American wire gauge (AWG) bare copper pigtails shall bond the grounding bus to all cable trays and other metal hardware within the concrete structure. Connections to the grounding bus shall be exothermic. If an exothermic weld is not possible, connections to the grounding bus shall be made by using connectors approved for direct burial in soil or concrete per UL 467. Hardware connections may be mechanical, using a lug designed for that purpose.

115-3.10 Cleanup and Repair. After erection of all galvanized items, damaged areas shall be repaired by applying a liquid cold-galvanizing compound per MIL-P-21035. Surfaces shall be prepared, and compound applied per the manufacturer's recommendations.

Prior to acceptance, the entire structure shall be cleaned of all dirt and debris.

115-3.11 Restoration. After the backfill is completed, the Contractor shall dispose of all surplus material, dirt, and rubbish from the site. The Contractor shall restore all disturbed areas equivalent to or better than their original condition. All sodding, grading and restoration shall be considered incidental to the respective L-115 pay item.

The Contractor shall grade around structures as required to provide positive drainage away from the structure.

Areas with special surface treatment, such as roads, sidewalks, or other paved areas shall have the backfill compacted to match surrounding areas, and surfaces shall be repaired using materials comparable to original materials.

Following restoration of all trenching near airport movement surfaces, the Contractor shall thoroughly visually inspect the area for foreign object debris (FOD) and remove any such FOD that is found. This FOD inspection and removal shall be considered incidental to the pay item of which it is a component part.
After all work is completed, the Contractor shall remove all tools and other equipment, leaving the entire site free, clear and in good condition.

115-3.12 Inspection. Prior to final approval, the electrical structures shall be thoroughly inspected for conformance with the plans and this specification. Any indication of defects in materials or workmanship shall be further investigated and corrected. The earth resistance to ground of each ground rod shall not exceed 25 ohms. Each ground rod shall be tested using the fall-of-potential ground impedance test per American National Standards Institute / Institute of Electrical and Electronic Engineers (ANSI/IEEE) Standard 81. This test shall be performed prior to establishing connections to other ground electrodes.

115-3.13 Manhole Elevation Adjustments. The Contractor shall adjust the tops of existing manholes in areas designated in the Contract Documents to the new elevations shown. The Contractor shall be responsible for determining the exact height adjustment required to raise the top of each manhole to the new elevations. The existing top elevation of each manhole to be adjusted shall be determined in the field and subtracted/added from the proposed top elevation.

The Contractor shall remove/extend the existing top section or ring and cover on the manhole structure or manhole access. The Contractor shall then install precast concrete sections or grade rings of the required dimensions to adjust the manhole top to the new proposed elevation or shall cut the existing manhole walls to shorten the existing structure, as required by final grades. Finally, the Contractor shall reinstall the manhole top section or ring and cover on top and check the new top elevation.

The Contractor shall construct a concrete slab around the top of adjusted structures located in graded areas that are not to be paved. The concrete slab shall conform to the dimensions shown on the plans.

115-3.14 Duct Extension to Existing Ducts. Where existing concrete encased ducts are to be extended, the duct extension shall be concrete encased plastic conduit. The fittings to connect the ducts together shall be standard manufactured connectors designed and approved for the purpose. The duct extensions shall be installed according to the concrete encased duct detail and as shown on the plans.

METHOD OF MEASUREMENT

115-4.1 Electrical manholes and junction structures shall be measured by each unit completed in place and accepted. The following additional items are specifically included in each unit:

- All Required Excavation, Dewatering
- Sheeting and Bracing
- All Required Backfilling with On-Site Materials
- Restoration of All Surfaces and Finished Grading, Sodding
- All Required Connections
- Dewatering If Required
- Temporary Cables and Connections
- Ground Rod Testing

BASIS OF PAYMENT

115-5.1 The accepted quantity of electrical manholes and junction structures will be paid for at the Contract unit price per each, complete and in place. This price shall be full compensation for furnishing all materials and for all preparation, excavation, backfilling and placing of the materials, furnishing and installation of appurtenances and connections to duct banks and other structures as may be required to complete the item as shown on the plans and for all labor, equipment, tools and incidentals necessary to complete the structure.

115-5.2 Payment shall be made at the contract unit price for L-867 junction cans. This price shall be full compensation for furnishing all materials and for all preparation, assembly, and installation of these

materials, and for all labor, equipment, tools, and incidentals necessary, including but not limited to, concrete, rebar, dewatering, excavating, backfill, topsoil, sodding and pavement restoration, where required, to complete this item as shown in the plans and to the satisfaction of the Engineer.

Payment will be made under:

No. 31, Spec No. L-115-5.1	New 2'x3'x3' Hand Hole with Aircraft-Rated Lid with Spring Assisted Opening - per Each
No. 32, Spec No. L-115-5.2	Install New Steel Blank Cover on Existing L-867 Base Can with New Bolts - per Each

MATERIAL REQUIREMENTS

ANSI/IEEE STD 81 IEEE Guide for Measuring Earth Resistivity, Ground Impedance, and Earth Surface Potentials of a Ground System

Advisory Circular

(AC) 150/5345-7	Specifications for L-824 Underground Electrical Cable for Airport Lighting Circuits
AC 150/5345-26	Specification for L-823 Plug and Receptacle, Cable Connectors
AC 150/5345-42	Specification for Airport Light Bases, Transformer Housings, Junction Boxes, and Accessories
AC 150/5340-30	Design and Installation Details for Airport Visual Aids
AC 150/5345-53	Airport Lighting Equipment Certification Program

Commercial Item Description

A-A 59544	Cable and Wire, Electrical (Power, Fixed Installation)
ASTM A27	Standard Specification for Steel Castings, Carbon, for General Application
ASTM A47	Standard Specification for Ferritic Malleable Iron Castings
ASTM A48	Standard Specification for Gray Iron Castings
ASTM A123	Standard Specification for Zinc (Hot Dip Galvanized) Coatings on Iron and Steel Products
ASTM A283	Standard Specification for Low and Intermediate Tensile Strength Carbon Steel Plates
ASTM A536	Standard Specification for Ductile Iron Castings
ASTM A615	Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement
ASTM A897	Standard Specification for Austempered Ductile Iron Castings
ASTM C144	Standard Specification for Aggregate for Masonry Mortar
ASTM C150	Standard Specification for Portland Cement
ASTM C206	Standard Specification for Finishing Hydrated Lime
FAA EB #83	In Pavement Light Fixture Bolts
MIL-P-21035	Paint High Zinc Dust Content, Galvanizing Repair
NFPA-70	National Electrical Code (NEC)

END OF ITEM L-115

Item L-125 Installation of Airport Lighting Systems

DESCRIPTION

125-1.1 This item shall consist of airport lighting systems furnished and installed in accordance with this specification, the referenced specifications, and the applicable advisory circulars (ACs). The systems shall be installed at the locations and in accordance with the dimensions, design, and details shown in the plans. This item shall include the furnishing of all equipment, materials, services, and incidentals necessary to place the systems in operation as completed units to the satisfaction of the RPR.

EQUIPMENT AND MATERIALS

125-2.1 GENERAL.

Airport lighting equipment and materials covered by Federal Aviation Administration (FAA) specifications shall be certified under the Airport Lighting Equipment Certification Program in accordance with AC 150/5345-53, current version. FAA certified airfield lighting shall be compatible with each other to perform in compliance with FAA criteria and the intended operation. If the Contractor provides equipment that does not performs as intended because of incompatibility with the system, the Contractor assumes all costs to correct the system for to operate properly.

a. Manufacturer's certifications shall not relieve the Contractor of their responsibility to provide materials in accordance with these specifications and acceptable to the RPR. Materials supplied and/or installed that do not comply with these specifications shall be removed, when directed by the RPR and replaced with materials, which do comply with these specifications, at the sole cost of the Contractor.

b. All materials and equipment used shall be submitted to the RPR for approval prior to ordering the equipment. Submittals consisting of marked catalog sheets or shop drawings shall be provided. Clearly mark each copy to identify pertinent products or models applicable to this project. Indicate all optional equipment and delete non-pertinent data. Submittals for components of electrical equipment and systems shall identify the equipment for which they apply on each submittal sheet. Markings shall be clearly made with arrows or circles (highlighting is not acceptable). The Contractor shall be responsible for delays in the project accruing directly or indirectly from late submissions or resubmissions of submittals.

c. The data submitted shall be sufficient, in the opinion of the RPR, to determine compliance with the plans and specifications. The Contractor's submittals shall be submitted in electronic PDF format, tabbed by specification section. The RPR reserves the right to reject any or all equipment, materials, or procedures, which, in the RPR's opinion, does not meet the system design and the standards and codes, specified herein.

d. All equipment and materials furnished and installed under this section shall be guaranteed against defects in materials and workmanship for a period of at least twelve (12) months from final

acceptance by the Owner. The defective materials and/or equipment shall be repaired or replaced, at the Owner's discretion, with no additional cost to the Owner.

e. All LED light fixtures, with the exception of obstruction lighting (AC 150/5345-43) must be warranted by the manufacturer for a minimum of 4 years after date of installation inclusive of all electronics." Obstruction lighting warranty is set by the individual manufacturer.

EQUIPMENT AND MATERIALS

125-2.2 Conduit/Duct. Conduit shall conform to Specification Item L-110 Airport Underground Electrical Duct Banks and Conduits.

125-2.3 Cable and Counterpoise. Cable and Counterpoise shall conform to Item L-108 Underground Power Cable for Airports.

125-2.4 Tape. Rubber and plastic electrical tapes shall be Scotch Electrical Tape Numbers 23 and 88 respectively, as manufactured by 3M Company or an approved equal.

125-2.5 Cable Connections. Cable Connections shall conform to Item L-108 Installation of Underground Cable for Airports.

125-2.6 Retroreflective Markers. Retroreflective markers shall be type L-853 and shall conform to the requirements of AC 150/5345-39.

125-2.7 Runway and Taxiway Lights. Runway and taxiway lights shall conform to the requirements of AC 150/5345-46. Lamps shall be of size and type indicated, or as required by fixture manufacturer for each lighting fixture required under this contract. Filters shall be of colors conforming to the specification for the light concerned or to the standard referenced.

LIGHTS

Type	Class	Mode	Style	Option	Base	Filter	Transformer	Notes
L-861T	2 – Base Mounted	1 – 6.6A	N/A	4 – (Mounting Hardware)	L-867 1.5" Threaded Frangible Coupling	Blue (Globes) Glass	30/45W	MITL Taxiway Edge 30W Quartz Halogen 14" Height

125-2.8 Runway and Taxiway Signs. Runway and Taxiway Guidance Signs should conform to the requirements of AC 150/5345-44.

SIGNS

Type	Size	Style	Class	Mode	Notes
L-858Y L-858L	1	2	2	2	LED Modular Refer to Plans

125-2.9 Runway End Identifier Light (REIL). Not Required

125-2.10 Precision Approach Path Indicator (PAPI). Not Required

125-2.11 Circuit Selector Cabinet. Not Required

125-2.12 Light Base and Transformer Housings. Light Base and Transformer Housings should conform to the requirements of AC 150/5345-42. Light bases shall be Type L-867, Class 1A, Size B shall be provided as indicated or as required to accommodate the fixture or device installed thereon. Base plates, cover plates, and adapter plates, extensions and spacers shall be provided to accommodate various sizes of fixtures, and elevation adjustments in accordance with the Plans.

125-2.13 Isolation Transformers. Isolation Transformers shall be Type L-830, size as required for each installation. Transformer shall conform to AC 150/5345-47.

INSTALLATION

125-3.1 Installation. The Contractor shall furnish, install, connect, and test all equipment, accessories, conduit, cables, wires, buses, grounds, and support items necessary to ensure a complete and operable airport lighting system as specified here and shown in the plans.

The equipment installation and mounting shall comply with the requirements of the National Electrical Code and state and local code agencies having jurisdiction.

The Contractor shall install the specified equipment in accordance with the applicable advisory circulars and the details shown on the plans.

125-3.2 Testing. All lights shall be fully tested by continuous operation for not less than 24 hours as a completed system prior to acceptance. The test shall include operating the constant current regulator in each step not less than 10 times at the beginning and end of the 24-hour test. The fixtures shall illuminate properly during each portion of the test.

125-3.3 Shipping and Storage. Equipment shall be shipped in suitable packing material to prevent damage during shipping. Store and maintain equipment and materials in areas protected from weather and physical damage. Any equipment and materials, in the opinion of the RPR, damaged during construction or storage shall be replaced by the Contractor at no additional cost to the owner. Painted or galvanized surfaces that are damaged shall be repaired in accordance with the manufacturer's recommendations.

125-3.4 Elevated and In-pavement Lights. Water, debris, and other foreign substances shall be removed prior to installing fixture base and light.

A jig or holding device shall be used when installing each light fixture to ensure positioning to the proper elevation, alignment, level control, and azimuth control. Light fixtures shall be oriented with the light beams parallel to the runway or taxiway centerline and facing in the required direction. The outermost edge of fixture shall be level with the surrounding pavement. Surplus sealant or flexible embedding material shall be removed. The holding device shall remain in place until sealant has reached its initial set.

METHOD OF MEASUREMENT

125-4.1 Taxiway lights and isolation transformers will be measured by the number of each type installed as completed units in place, ready for operation, and accepted by the RPR.

Isolation Transformers for guidance signs will be measured by the number of each type and size installed as completed units, in place, ready for operation, and accepted by the RPR.

BASIS OF PAYMENT

125-5.1 Payment will be made at the Contract unit price for each complete runway or taxiway light, guidance sign or reflective marker installed by the Contractor and accepted by the RPR. This payment will be full compensation for furnishing all materials and for all preparation, assembly, and installation of these materials, and for all labor, equipment, tools, and incidentals necessary to complete this item.
Payment will be made under:

No. 33, Spec No. L-125-5.1	New L-861T Quartz Taxiway Edge Light and Isolation Transformer on New L-867 Base Can – Per Each
No. 34, Spec No. L-125-5.2	New L-858 (L) LED Size 2, Style 3, Class 2, 2-Module Airfield Guidance Sign on New Concrete Base – Per Each
No. 35, Spec No. L-125-5.3	New L-858 (L) LED Size 2, Style 3, Class 2, 3-Module Airfield Guidance Sign on New Concrete Base – Per Each
No. 36, Spec No. L-125-5.4	New L-858(L) LED Size 2, Style 3, Class 2, 3-Module Airfield Guidance Sign on Existing Concrete Sign Base - Per Each
No. 37, Spec No. L-125-5.5	New L-858 Size 2, Unlighted Taxiway Ending Marker Sign on New Concrete Sign Base - Per Each

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.
Advisory Circulars (AC)

AC 150/5340-18	Standards for Airport Sign Systems

AC 150/5340-26	Maintenance of Airport Visual Aid Facilities
AC 150/5340-30	Design and Installation Details for Airport Visual Aids
AC 150/5345-5	Circuit Selector Switch
AC 150/5345-7	Specification for L-824 Underground Electrical Cable for Airport Lighting Circuits
AC 150/5345-26	Specification for L-823 Plug and Receptacle, Cable Connectors
AC 150/5345-28	Precision Approach Path Indicator (PAPI) Systems
AC 150/5345-39	Specification for L-853, Runway and Taxiway Retroreflective Markers
AC 150/5345-42	Specification for Airport Light Bases, Transformer Housings, Junction Boxes, and Accessories
AC 150/5345-44	Specification for Runway and Taxiway Signs
AC 150/5345-46	Specification for Runway and Taxiway Light Fixtures
AC 150/5345-47	Specification for Series to Series Isolation Transformers for Airport Lighting Systems
AC 150/5345-51	Specification for Discharge-Type Flashing Light Equipment
AC 150/5345-53	Airport Lighting Equipment Certification Program
	Engineering Brief (EB)
EB No. 67	Light Sources Other than Incandescent and Xenon for Airport and Obstruction Lighting Fixtures

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Appendix A Construction Safety Phasing Plan

CONSTRUCTION SAFETY & PHASING PLAN

Chandler Municipal Airport
Taxiway 'B' Improvements Phase 1: Taxiway 'L' to Taxiway 'N'

CHD Project No.: AI2302.401
ADOT Project No.: E3S4C
Dibble Project No.: 1021015.11

Prepared For: City of Chandler

September 27, 2024

CHANDLER arizona

DIBBLE

CONSTRUCTION SAFETY & PHASING PLAN

Chandler Municipal Airport

Taxiway 'B' Improvements Phase 1: Taxiway 'L' to Taxiway 'N'

CHD Project No.: AI2302.401
ADOT Project No.: E3S4C
Dibble Project No.: 1021015.11

Prepared For:
Chandler Municipal Airport
2380 S Stinson Way
Chandler, AZ 85286

September 27, 2024

Duane Dana, PE
Senior Project Manager

Dibble



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1. COORDINATION

1.1 General Project Information

This project is located at Chandler Municipal Airport (Airport or CHD). The project includes new taxiway and shoulder pavement, pavement markings, grading, lighting and electrical improvements.

This *Construction Safety and Phasing Plan* (CSPP) provides specific information to the Contractor and/or Subcontractors contracted to carry out the construction contract for this project. This plan includes the requirements and procedures for accident prevention, safety requirements, and security considerations at CHD. The Airport's safety objective is to achieve accident-free construction projects. Furthermore, the Contractor must be in full compliance with FAA Advisory Circular (AC) 150/5370-2G: *Operational Safety on Airports During Construction*. The CSPP and project safety and phasing requirements will be discussed in detail at the Pre-Bid and Pre-Construction Conferences. The Contractor is required to submit a *Safety Plan Compliance Document* (SPCD) to CHD describing how the contractor will comply with the requirements set forth in the CSPP.

The Contractor or Subcontractor shall conduct their operations in a manner that will provide safe working conditions for all employees, and the protection of the public and all others who may be affected by construction activities. Nothing contained in this plan is intended to relieve the Contractor, Subcontractor or suppliers of the obligations assumed by the Contractor under contract with the Airport or as required by law.

Safety must be an integral part of the job. Full participation, cooperation, and support are necessary to ensure the safety and health of all persons and property involved in the project. The purpose of phasing, marking, barricading, and lighting of airside construction areas is to delineate hazardous areas and prevent unauthorized incursions into the areas by personnel, vehicles, equipment, and aircraft during construction; and to positively separate construction activity from aircraft operations.

A Pre-Bid Conference will be scheduled during the bidding process to allow prospective bidders an opportunity to understand the safety aspects of this project. A key topic of this meeting will include a detailed review of this CSPP, with emphasis on Contractor responsibilities for safety, as well as access and work areas in each phase.

A Pre-Construction Conference will be scheduled prior to the issuance of the Notice to Proceed. Invitees and attendees will include City and Airport staff; the Engineer-of-Record; the RPR; the Contractor's Project Manager/Superintendent; and representatives from the FAA and ADOT (in person or by phone). Relevant safety-related issues will be discussed in detail at this meeting.

Topics of discussion will include the FAA Advisory Circular (AC) 150/5370-2G: *Operational Safety on Airports During Construction*; project scope; the RPR's responsibility; identifying the Contractor's Superintendent; NOTAM responsibility; phasing and scheduling of work; Notice to Proceed date; safety during construction; security, badging and escorting requirements; quality control and testing; test reports; maintenance of record drawings; and other contract and Federal requirements.

The Contractor is required to submit an overall project schedule at the Pre-Construction Conference which will allow Airport staff, the Engineer and the Contractor to identify affected areas during construction.

1.2 Contractor Progress Meetings

Weekly construction progress meetings will be held where the invitees and attendees will include at minimum the Airport staff, the RPR, the Contractor's Project Superintendent, and the lead personnel of each Subcontractor. In addition to the discussions on the progress of the project, operational safety procedures identified within the SPCD will be reviewed and discussed.

1.3 Scope or Schedule Changes

The Contractor will be required to immediately notify the RPR and Airport Staff of any changes to the original project scope or schedule. The Airport will coordinate (as needed) any changes with the impacted stakeholders, (i.e. tenants, FAA, etc.).

1.4 FAA/ATO Coordination

The Airport will be responsible for coordinating as required with the FAA/ATO during construction.

2. PHASING

The project will be constructed in five phases, as displayed in **Appendix A –** *Construction Phasing Plans*. The Contractor is required to provide his own detailed Barricade Plans in accordance with his anticipated operations for the review and approval of the Airport.

Phase 1. This will include the construction of approximately 1,100' of Taxiway 'B' outside of the object free areas of both Taxiway 'L' and Taxiway 'N'.

- The construction duration shall be **42 Calendar Days**.
- No taxiway closures are required as all work will occur outside of both connector taxiway TOFAs.

Phase 2A. This will include the construction of approximately 100' of Taxiway 'B' within the object free area of Taxiway 'N'.

- The construction duration shall be **21 Calendar Days** concurrent with **Phase 1**.
- Taxiway 'B' and its associated connector taxiways including Taxiway 'N' will be closed.
- Aircraft will access Runway '4R-22L' by crossing the runway on Taxiway 'H' or Taxiway 'L' to taxi down Taxiway 'C'.

Phase 2B. This will include the construction of electrical conduit within the Runway '4L-22R' OFZ adjacent to Taxiway 'N'.

- The construction duration shall be **5 Nights** concurrent with **Phase 2A**.
- Work within the ROFZ of Runway '4L-22R' will require nighttime closures of the runway.
- Taxiway 'B' and its associated connector taxiways including Taxiway 'N' will be closed.
- Aircraft will not be permitted to take-off or land at the Airport during the runway closure.

Phase 3. This will include the construction of approximately 100' of Taxiway 'B' within the object free area of Taxiway 'L'.

- The construction duration shall be **21 Calendar Days** concurrent with **Phase 1**, but sequential with **Phase 2**.
- Taxiway 'L' and the new Taxiway 'B' extension will be closed.
- Aircraft will access Runway '4R-22L' by crossing the runway on Taxiway 'H' to taxi down Taxiway 'C' or via Taxiway 'N' to taxi down Taxiway 'B'.

Phase 4. This will include the placement of temporary pavement markings once all taxiway pavement has been constructed.

- The construction duration shall be **1 Calendar Day** sequential to **Phase 1**.
- Temporary closures of Taxiway 'B', and Connector Taxiways 'L' and 'N' will be required. After application of the markings, all markings shall be protected from damage until dry.
- Aircraft will be directed by the Air Traffic Control Tower (ATCT) in close coordination with Airport Operations.

Substantial Completion – 43 Calendar Days. This will mark the completion of all construction in Phases 1 through 4. A pre-final walk-though will be completed by the RPR, Airport Staff, and the Contractor. The Contractor shall be provided with a Substantial Completion letter including a punchlist of any remaining items to complete before Final Completion. The construction warranty will begin from this date.

Stop Time – 30 Calendar Days. This will consist of a pavement cure period before permanent marking in Phase 5 below.

Phase 5 – 1 Calendar Day. This will consist of permanent marking the entire project area. This will require temporary closures of existing Taxiway 'B', and Connector Taxiways 'L' and 'N' in close coordination with Airport Operations.

Final Completion – 5 Calendar Days – Total 49 Calendar Days. This will include the completion of all punchlist items noted on the Substantial Completion letter, final clean-up and demobilization.

3. AREAS AND OPERATIONS AFFECTED BY THE CONSTRUCTION ACTIVITY

3.1 Affected Areas on the Airfield

3.1.1 Closed or Partially Closed Facilities

No facilities (buildings or businesses) are anticipated to be closed or partially closed for the duration of this project. For runway and taxiway closures, reference **Section 2** *Phasing*.

3.1.2 ARFF Access Routes

Chandler Municipal Airport is not equipped with an ARFF facility, however, this project will have minimal impact on existing emergency access routes. Alternate emergency routes will be coordinated by the airport during the temporary closure of any portion of airfield during the respective construction phases. The Contractor will be directed to maintain the alternate access routes and all other existing routes that may be used by emergency vehicles within the Airfield Operations Area (AOA) at all times.

3.1.3 Airport Support Vehicle Access Routes

Chandler Municipal Airport is not an air carrier airport and does not have airport support vehicles.

3.1.4 Blast Protection Procedures

The Contractor's company safety plan/guidelines shall include a provision for jet blast protection. At a minimum, it should address requirements for the securing of clothing and hardhats, as well as any requirements for hearing protection.

3.1.5 Utilities for Firefighting

No underground utilities used for firefighting (including water) within the AOA are anticipated to be impacted by the construction of this project. While every effort has been made to include the locations and depths of known utilities within the project area, the Contractor will be required to pothole for utilities to avoid damage to them. Fire hydrants are located off-site.

3.1.6 Affected Approach and Departure Surfaces

The Contractor will be required to abide by the Part 77 airspace requirements at all times, including all equipment, material and batch plants that may be required for this project. Construction equipment will be limited to stay below the approach surfaces at all times. Equipment along the haul route having a height of 15-ft will be submitted to OE/AAA to be evaluated for Airspace impact.

Construction activity shall be prohibited when equipment penetrates the imaginary surface described in Title 14 CFR Part 77 and any restricted area as defined in the current edition of FAA AC 150/5300-13A, *Airport Design*, unless a favorable airspace finding has been made by the FAA and the Airport and approved by Airport Operations. Equipment that penetrates the Part 77 imaginary surface must display a red obstruction light during nighttime use and an orange and white checkered flag during the day.

3.1.7 Affected Instrument Approach Procedures and NAVAID Critical Areas

No Instrument Approach Procedure or NAVAID Critical Area will be impacted by the project.

3.2 Mitigation of Effects

3.2.1 Construction Staging Area and Haul Routes

The Contractor's staging and storage area, haul routes, and construction access areas are shown on Construction Plan Sheets **G3.0** through **G3.3**. The Contractor's staging area is located outside of all Object Free Areas. Construction access areas and haul routes have been established to minimize impact to airfield operations. The Contractor will be required to supply gate guards at all construction entrances to the airfield when in use. Gate guards will not be required if the gates are closed and locked.

Transient haul truck drivers are required to check in with the Contractor's security guard. The driver shall be issued an orange/white checkered flag to be mounted on the highest point of the truck; and shall be returned to the security guard upon check out. The driver shall be advised to remain on the marked haul route and follow the appropriate signs to the intended work area. At no time shall any driver be allowed to deviate from the marked haul route. Additionally, during times of low visibility or darkness, the drivers shall be required to use a flashing amber beacon.

3.2.2 Temporary Taxi Operations

Temporary taxi operations and alternate routes to accommodate aircraft movement needs are discussed for each project phase in **Section 2** *Phasing*.

3.2.3 Detours for ARFF and Other Airport Vehicles

The Airport is not equipped with an ARFF facility; however, in the event of an emergency, ARFF and other airport vehicles are not anticipated to be hindered by construction activities related to this project. However, because each construction situation is different, the Contractor must coordinate construction vehicle traffic with the Airport Operations for each phase of construction. Contractor vehicle movements to and from the site must conform to approved Access and Haul Roads or as directed by the Airport at the weekly construction meetings. The Airport will coordinate with all stakeholders any detours from existing Airfield Service Roads as needed, throughout the duration of the project.

3.2.4 Maintenance of Essential Utilities

Essential utilities are not anticipated to be impacted in this project. The Contractor will be required to provide temporary means to any impacted utilities until the impacted utilities are restored. Work within the electrical vault will take place during daytime shutdowns of the vault so that all airport lighting can be operable at the end of each shift.

3.2.5 Temporary ATC Procedures

The Air Traffic Control Tower (ATCT) will be kept informed of all construction activities throughout the duration of the project. The Contractor will provide construction schedules at least three weeks ahead of the proposed construction activities to be given to the ATCT by the Airport Operations Superintendent. The ATCT will be expected to provide feedback about any concerns that the ATCT has for construction areas and Contractor movements. Project phasing plans will be provided to the ATCT so that they are aware of the impacts to aircraft operations on the ground and in the air.

While the Airport will ultimately be responsible for issuing NOTAMs related to construction activities and restrictions, the ATCT will be responsible for redirecting pilots from proceeding into construction areas.

4. PROTECTION OF NAVIGATION AIDS (NAVAIDS)

4.1 NAVAID Critical Areas

It is not anticipated that any NAVAID Critical Area will be impacted by this project.

4.2 Effects of Construction on NAVAID Performance

The Runway ‘22R’ PAPI’s will be completely operational during daytime activities. When work is taking place within the runway OFZ, the contractor shall only work at night between 9:00pm and 6:00am and requiring the closure of the runway. The Airport will be responsible to issue NOTAMs for all air traffic. The Contractor will be required to coordinate any closures a minimum of 48 hours in advance.

4.3 Protections of NAVAID Facilities

The Runway ‘22R’ PAPI’s, the segmented circle and windcone will be protected in place during construction. All other NAVAIDs for active airfield areas will be maintained and remain operational.

4.4 Required Distance from NAVAIDs to Construction Areas

The Runway ‘22R’ PAPI’s, the segmented circle and windcone are close to the construction area. The Contractor is to protect these in place during construction. All other NAVAIDs are at a safe distance away from any construction activities as shown on the overall phasing sheet.

4.5 Coordination Procedures with FAA/ATO

The Airport staff will be responsible for continually coordinating as required with the FAA/ATO during construction.

5. CONTRACTOR ACCESS

5.1 General Items

5.1.1 Contractor Access Areas

Any time access is required within restricted areas within the airport, the Contractor shall be responsible for assuring that no breaches of airport security occur. Restricted areas are fenced and must remain fenced at all times. The gates will remain closed and locked, or a guard (badged by the airport) will be provided at the Contractor's expense. The Contractor will furnish the guard with a roster of his personnel and will ensure that each individual has adequate identification. The duplicate keys for each lock will be turned over to Airport authorities. The following additional measures must also be taken:

- No person shall enter the Contractor's worksite without authorization. Any person found within the worksite without proper identification as described herein shall be considered unauthorized and shall be removed from the worksite.
- Contractor Superintendents and Supervisors will be required to wear identifiable equipment or clothing to be easily recognized and located on site.
- Reference Section 3.2.1 – *Construction Staging Area and Haul Routes* for additional requirements imposed on the Contractor regarding the Staging Area and Haul Routes.

5.1.2 49 CFR Part 1542, Airport Security

The airport is operated in strict compliance with Federal Aviation Regulations (FAR), which prohibit unauthorized persons or vehicles in the Air Operations Area (AOA). Equipment and workmen will be restricted to the work area defined on the plans. Any violation by Contractor's personnel or Subcontractors will subject the Contractor to penalties imposed by the FAA or the Airport.

The Contractor will assume all fines assessed to them by the Airport and all fines against the Airport assessed to them by the FAA/ for the Contractor's security violations. Typical FAA fines are ten thousand dollars ($10,000.00) or more per incident.

The Contractor shall be responsible for the protection of the construction site, and all work, materials, equipment, and existing facilities thereon, against vandals and other unauthorized persons. Security measures shall include additional security fencing, barricades, lighting, and other measures as the Contractor may deem necessary to protect the site.

The Contractor's responsibilities for work areas are as follows:

- The Contractor shall be held responsible for controlling his employees, Subcontractors, and their employees with regard to traffic movement.
- The Contractor shall rebuild, repair, restore, and make good at his own expense all injuries or damages to any portion of the work occasioned by his use of these facilities before completion and acceptance of his work.
- The Contractor shall submit to the RPR in writing a detailed work plan for each construction phase. This plan shall be submitted 14 calendar days prior to the start of each construction phase. No work within the construction phase may commence until the phase work plan is approved.

- The Contractor shall submit to the RPR in writing a plan, by construction phase, for controlling construction equipment and vehicular movements in the Air Operations Area (AOA). This plan shall be submitted at the Pre-Construction Meeting. No work may commence until this plan is approved by the Airport. The plan must include material haul roads.
- The Contractor shall provide a responsible Traffic Manager whose duty shall be to direct all construction traffic on or near active runways, taxiways, haul roads and highways. Paved surfaces shall be kept clear at all times and specifically must be kept free from all debris which might damage aircraft.

The project does not require the distribution of security badges to Contractor, Subcontractor, or material supplier employees.

No weapons will be allowed on the airport by any Contractor personnel at any time.

5.2 Location of Stockpiled Construction Materials

All contractor materials, equipment and supplies shall be within the Contractor's designated staging and storage area. All storage areas shall be marked; debris boxes covered and area kept neat and clean of debris.

For equipment that must remain in the work area, the following conditions must be met:

- Be located outside of the runway/taxiway safety and object free areas.
- Be marked with lighted barricades around the equipment perimeter with a spacing of no more than 10 feet.
- Be coordinated at least 48 hours in advance with the RPR.
- The highest point of the equipment marked and lit with a red flashing/steady burning omni-directional obstruction light.

Stockpiled materials are allowed only within the Contractor's designated staging and storage area.

- Remove daily all stockpiled material from within aircraft movement areas, unless otherwise directed by the RPR.
- No excavated or stored materials may remain within active runway or taxiway safety areas and object free zones.
- Stockpiled material may be located within the Air Operations Area only upon prior coordination and approval of the RPR.

5.3 Vehicle & Pedestrian Operations

5.3.1 Construction Site Parking

Construction parking will be allowed in the Contractor's Staging and Storage Area, which is outside of any Object Free Areas. No personal vehicles will be allowed onto the airfield with the exception of inside the Contractor's Staging and Storage Area. See **Section 5.1.1** – *Contractor Access Areas* for further information.

5.3.2 Construction Equipment Parking

Construction equipment parking will be in the Contractor's Staging and Storage Area for any equipment that is not in use.

5.3.3 Access and Haul Roads

Access and haul roads on Airport property will be delineated with the use of low-profile barricades, flagging, temporary construction fencing, escorts, or a combination thereof. Contractor access and haul roads will be verified by the Airport at the time of construction. Only under special circumstances, may the Contractor request special approval from the Airport and RPR to leave equipment outside the staging and storage area. See **Section 5.1.1** – *Contractor Access Areas* for further information.

5.3.4 Marking and Lighting of Construction Vehicles

All Contractor and Subcontractor vehicles must be properly marked with the company name at least four (4) inches in height on both sides of the vehicle. All vehicles must have a 3' x 3' orange and white checkered flag at the tallest point on the vehicle for daytime construction activities, and a flashing amber or yellow beacon, mounted at the highest point for nighttime construction.

All vehicle marking and lighting must comply with the most recent version of FAA AC 150/5210-5D, *Painting, Marking and Lighting of Vehicles Used on an Airport*.

5.3.5 Construction Vehicle Operations Within AOA

For the purposes of this project, the AOA is defined as any area within the secured (fenced) area of the Airport. No vehicle shall operate within the Air Operations Area (AOA):

- In a careless or negligent manner.
- With disregard of the rights and safety of others.
- At a speed (15 MPH maximum) or in a way which endangers persons or property.
- While the driver is under the influence of drugs or alcohol.
- If such vehicle is loaded or maintained as to endanger persons or property.
- Without constant observance for operating aircraft.

5.4 Two-Way Radio Communications Procedures

If needed, the Contractor shall be responsible for obtaining and maintaining ICOM IC-A24/A6 VHF Air Band Transceiver radios, or approved equal, for his crews for use during construction and will not be permitted to borrow radios from the airport for use during construction. At a minimum, the Contractor shall provide radios for the Project Superintendent, all personnel required to control construction traffic across active runways, taxiways, and parking aprons, and operators on controlled surfaces, (i.e. sweeper operators, escort vehicles, or others who have need to operate/transit outside of the restricted construction areas). All costs associated with acquiring and maintaining the approved radios shall be considered incidental to SP-60.05.1 *Airfield Safety and Security* bid item and no separate payments will be made.

5.5 Airport Security

Any time access is required within the Airport Operations Areas (AOA) the Contractor shall be responsible for assuring that no breaches of airport security occur. The AOA is fenced and must remain fenced at all times. The gates will remain closed and locked or a guard (with an airport issued access card) will be provided at the Contractor's expense. The Contractor will furnish gate guards with rosters of his personnel and ensure that each individual has adequate identification. The duplicate keys for each lock will be turned over to Airport authorities. The following additional measure must also be taken:

- Persons authorized to provide escorts include Airport staff and designated contractor supervisors. Failure to provide an escort can result in loss of escort privileges, fines, revocation of the access card, or all three.

Reference **Section 3.2.1** *Construction Staging Area and Haul Routes* for additional requirements imposed on the Contractor regarding the Staging Area and Haul Routes.

6. WILDLIFE MANAGEMENT

6.1 Trash

The Contractor shall perform daily inspections of the work areas (including the Contractor's staging area) to remove any trash, debris and food scraps and place these items in an appropriate trash receptacle. Trash receptacles, regardless of type and size, must always be covered and secured to eliminate the possibility of contents from escaping.

6.2 Standing Water

The Contractor shall conduct his/her operations to minimize the potential for standing water. When water begins to stand on site, the Contractor shall begin pumping water to drain the area within 24 hours to prevent the attraction of wildlife.

6.3 Tall Grass & Weeds

The Contractor shall mow areas under his/her responsibility including, but not limited to, project site staging and storage areas and exclusive use haul roads to prevent the growth of vegetation over 6-inches.

6.4 Poorly Maintained Fencing and Gates

The Contractor shall close and lock any airfield access gates that are not in use. Any fencing installed by the Contractor shall be maintained to prevent the intrusion of wildlife.

6.5 Disruption of Existing Wildlife Habitat

The Contractor shall report any significant wildlife sightings within the AOA to the nearest Airport employee.

6.6 Airport Wildlife Management Procedures

The Contractor will be required to follow any Airport Wildlife Management Procedures that are in place at the airport; however, at a minimum the Contractor will be required to perform the following:

- Close and lock any airfield access gates that are not in use.
- Report any significant wildlife sightings within the AOA to the nearest Airport employee.

7. FOREIGN OBJECT DEBRIS (FOD) MANAGEMENT

This project will include the movement of construction vehicles adjacent to active airfield pavements, therefore the Contractor will be required to maintain a fully operational sweeper vehicle on-site during the project. Furthermore, once any portion of any construction is ready to be opened to aircraft traffic, the Contractor, RPR, and Airport personnel shall walk the area to determine that all FOD that may have been generated is no longer present.

The Contractor will be required to keep water on construction areas to minimize the possibility of FOD generated by wind. The Contractor will be required to conduct FOD checks at the end of each working shift/day to remove any FOD that has made its way onto the airfield pavements from the Contractor's construction activities. Airport Operations and Construction Administration personnel will be present for these FOD checks to ensure compliance.

8. HAZARDOUS MATERIAL MANAGEMENT

Any hazardous or regulated waste material produced by the Contractor's operations shall be properly disposed of at the Contractor's expense pursuant to all local, state, and federal regulations. The Contractor may be required to provide test results to confirm that a contaminated area has been properly remediated.

Any hazardous materials situation that poses a threat to safety or property shall be immediately reported to emergency personnel by dialing '911' and to the nearest Airport employee.

9. NOTIFICATIONS OF CONSTRUCTION ACTIVITIES

9.1 Points of Contact

A full list of Points of Contact and Contact Procedures will be developed prior to the Pre-Construction Meeting for this project. Under normal circumstances, all communications concerning the construction project between airport stakeholders and the contractor shall be channeled through the RPR who shall be the primary point of contact for all communications concerning the construction project. Matters relating to Airport operations will be handled through the Airport, with assistance from the RPR and/or Contractor as needed.

Contact	Phone Number	Availability
TBD Resident Project Representative, Dibble	---	Construction Hours
Duane Dana, P.E. Engineer-of-Record, Dibble	480-365-9056	Mon-Fri, 8:00am to 5:00pm
Office Mainline CHD Operations	480-782-3540	(Mon-Fri, 8:00 am to 5:00 pm)
Scott Rinkenberger Airport Operations Administrator	480-782-3546	(24 Hours/Day, 7 Days/Week)

9.2 Local ATO/Technical Operations Personnel

The Airport will be responsible for all communications with the local ATO/Technical Operations.

9.3 ATCT Managers on Duty

The Airport will acquire a list of the ATCT Managers on duty for the project prior to construction commencing. This list will be available for use by Airport staff by the date of the Pre-Construction Meeting. This will also be a regular item discussed at the weekly construction meetings.

9.4 Authorized Representatives to the FAA's Operational Control Center (OCC)

The Airport will develop a list of authorized representatives to the OCC prior to construction commencing. This list will be provided to the OCC by the date of the Pre-Construction Meeting.

9.5 OCC Notification About Closed and/or Hazardous Conditions on the Airfield

The Airport staff will be responsible for notifying the OCC about closed facilities and/or hazardous conditions at the Airport. The OCC will be notified about closed facilities as soon as practicable following reliable scheduling meetings. Unanticipated hazardous conditions will be immediately relayed to the OCC by Airport staff.

9.6 Notice to Air Missions (NOTAM)

Construction NOTAM's will be filed by the Airport staff approximately three (3) days prior to construction beginning in the area which the NOTAM references, or prior to any change in airfield conditions which may affect operations or safety. The Contractor will be required to submit pertinent information to the airport for any construction items that would require the issuance of a NOTAM a minimum of 2 weeks prior to the work being performed.

9.7 Emergency Notification Procedures

For any medical and law enforcement emergencies call '911'. Following a call to '911', the Contractor shall then call Chandler Municipal Airport Operations at 480-540-9991.

The Contractor shall submit to the RPR and Airport a list of personnel who can be contacted 24 hours a day, seven (7) days a week and can respond in a reasonable time frame regarding any possible emergency on the work site. The list must include names, job title and phone numbers.

9.8 Coordination with ARFF for Non-Emergency Issues

The Airport does not have an ARFF facility. The Contractor shall contact the Airport Manager concerning non-emergency issues of the following:

- The deactivation and subsequent reactivation of water lines and fire hydrant.
- The establishment, re-routing, or blocking of emergency routes.
- The use of hazardous materials on the airfield.

9.9 Notification to the FAA and Airport Users

This project is phased in order to maintain an operating airfield; therefore each phase will likely require additional information to be passed on to the Airport Users as the project progresses. NOTAMs and project advisories will be distributed approximately three (3) days prior to a new construction phase which may affect normal operating conditions at the Airport. Anticipated night work by the Contractor will need the Airport approval prior to proceeding with the night work.

9.10 FAA Notification Under CFR Parts 77 and 157

All proposed construction activities that affect operations at the Airport will be immediately relayed to all Airport Users and the FAA by way of meetings, advisories, NOTAM's, and the filing of Form 7460 as appropriate (minimum of 60 days prior to the proposed construction) all issued by one of the Airport's designated staff or RPR.

9.11 FAA Reimbursable Agreements

A FAA Reimbursable Agreement is not a method of funding for this project.

9.12 Affected Instrument Approach Procedures

No Instrument approach procedure is affected by this project.

10. INSPECTION REQUIREMENTS

10.1 Daily (or more frequent) Inspections

Daily inspections will be required for areas requiring haul routes on active airfield pavements to ensure that FOD is minimized. In addition, daily inspections of Contractor access areas will be performed to help ensure safety on the airfield. Daily inspections will be conducted by an Airport Operations employee, a Contractor representative, and the RPR.

Special inspections will be required for airfield pavements that are ready to be re-opened to aircraft traffic after completion of the project. Special inspections will also be attended by an Airport Operations employee, a Contractor representative, and the RPR.

All discrepancies noted in the inspection must be corrected to the satisfaction of the RPR prior to the Contractor leaving the worksite.

Should any inspection reveal any FOD concerns, the Contractor shall have a crew ready to remove any FOD prior to reopening the pavements. Should any inspection reveal work that does not meet Contract requirements or that is deficient in any way, the Contractor shall mobilize a crew as soon as possible to remedy the deficient areas to avoid prolonging the continued closure of the areas.

10.2 Final Inspections

Inspections will be required at the Substantial Completion and Final Completion phase of the project. These inspections will be attended by the Contractor, Airport Manager, FAA, ADOT Aeronautics, the RPR, and Construction Administration representatives. A punch list will be developed at the Substantial Completion inspection, and any items placed on the punch list will be required to be completed within 30 days. Final Inspection will be scheduled 30 days after the substantial completion walkthrough.

Should any inspection reveal any FOD concerns, the Contractor shall have a crew ready to remove any FOD prior to reopening the pavements. Should any inspection reveal work that does not meet Contract requirements or that is deficient in any way, the Contractor shall mobilize a crew as soon as possible to remedy the deficient areas to avoid prolonging the continued closure of the areas.

10.3 Inspection Checklist

The Airport Manager, Operations Manager, the Engineer/Construction Manager/RPR, and the Contractor will utilize **Appendix B –** *Inspection Checklist* for evaluating the Contractor's adherence to the contract documents and this CSPP, as well as for reopening any areas to aircraft traffic.

11. UNDERGROUND UTILITIES

Prior to beginning construction on the airfield, the Contractor will be required to Blue Stake and pothole (if necessary) existing utilities in the project areas. Protection of utilities may include, but is not limited to, flagging utilities, marking lines on pavement, and placement of barricades along utility lines and at manholes. General Technical Provisions provide the Contractor with detailed direction for the location of underground utilities.

12. PENALTIES

The Contractor will be required to enforce his company's safety policies with the employees working on this project. In addition, the Airport may enforce policies that are in place to protect the safety of the Airport property, its users, and the local Airspace. These policies include, but are not limited to, the following:

- Informal conversations with the subject person or party
- Formal meetings/conversations with the subject person or party and their supervisors/managers
- Formal written notices of non-compliance from the Airport
- Immediate removal from Airport property
- Notification of law enforcement personnel for persons that cause situations posing dangerous threats to property or personal safety.

Reference Special Provisions for additional requirements imposed on the Contractor regarding Airport Safety and Security.

13. SPECIAL CONDITIONS

Special unforeseen conditions or circumstances may require the activation of special procedures by the Airport. In cases involving aircraft emergencies or distressed aircraft the Contractor may be required to temporarily halt construction activities and immediately vacate the area in which he is working. The nearest Airport Operations employee will be expected to notify all Contractor personnel in the vicinity and promote safe and orderly removal of all Contractor personnel and equipment to an area that is no longer in conflict with the emergency at hand. The Contractor will be expected to immediately comply with all Airport personnel directions and may not return to the subject work area until given the permission to do so.

In the event of low-visibility conditions, or other conditions which may signal the need for additional unimpeded space next to runways or taxiways, the Contractor may be required to move to another work area of the project or temporarily stop work. The Contractor will be made aware of the possibility of these situations during the Pre-Construction Conference.

14. RUNWAY & TAXIWAY VISUAL AIDS

14.1 General

Temporary visual aids may be used from time to time as the project progresses to increase safety. Any temporary visual aid will be secured either in-pavement or with heavy items preventing blow-away (against jet-blast, prop wash or a 90-mph wind), while at the same time not obscuring the objects themselves.

All temporary visual aids must have frangible connections. Connections shall be submitted for approval by the RPR.

14.2 Markings

Any markings that may be required for this project will meet the requirements of FAA Advisory Circular 150/5340-1M, *Standards for Airport Markings*.

14.3 Lighting and Visual Aids

Lighting and signs for all barricades used within the AOA shall be red and shall be a steady-burn or blinking light. All barricading and lighting shall conform to the details in the plans and specifications. Low-profile barricades shall be placed end-to-end to prevent ground vehicle traffic from moving onto active airfield pavements (barring a deliberate act), and alert aircraft traffic of closed facilities.

Appendix A – *Construction Phasing Plans* show the placement of all barricades and their locations.

Lighting for any closed facilities will be disconnected or covered and secured with a material that prevents light leakage. Disconnected lighting shall be completed so as to not affect the remaining portion of facilities that may be open to aircraft traffic.

Lighting shall conform to AC 150/5340-30: *Design and Installation Details for Airport Visual Aids*, AC 150/5345-50: *Specification for Portable Runway and Taxiway Lights*, AC 150/5345-53: *Airport Lighting Certification Program*, AC 150/5345-44: *Specification for Runway and Taxiway Signs*, AC 50/5340-18: *Standards for Airport Sign Systems*, and AC 150/5345-53: *Airport Lighting Certification Program*, as required.

14.4 Signs

Airfield signage illuminated to indicate an open facility that is closed due to construction shall be covered and secured with a material that prevents light leakage. Signs may be partially covered as several signs have multiple panels. In this case, only the affected panels shall be covered.

15. MARKING & SIGNS FOR ACCESS ROUTES

Temporary signing used for Contractor access/haul routes, open trenching or other hazards shall be clear, concise, reflective, and large enough to minimize safety-related issues. All temporary signing shall meet the requirements of AC 150/5340-18G: *Standards for Airport Sign Systems* and, to the extent practicable, with the *Manual of Uniform Traffic Control Devices* (MUTCD) and/or State highway specifications. All temporary signs shall also be properly weighted and/or secured to withstand site and elemental conditions.

16. HAZARD MARKING & LIGHTING

16.1 General

Hazards, such as open trenches, manholes, and steep embankments shall be barricaded and lighted with pennant flagging or orange fabric construction fencing to prohibit accidental falls. The Contractor's site-specific and company safety plan/guidelines shall address the protection of these areas and the protection of the employees against these hazards. The Contractor shall also assign a Project Safety Officer for the project to monitor and enforce the Contractor's safety guidelines and the provisions of this CSPP.

When areas on the Airport are closed or present hazards due to construction activities, they should be marked and lighted according to AC 150/5340-1M, *Standards for Airport Markings*. Marking and lighting must be approved by Airport Operations.

16.1.1 Less Obvious Construction Related Hazards

Some less obvious construction related hazards include, but are not limited to, the following:

- Loose debris, trash, etc. in the work areas
- Loose debris, trash, etc. on or in the bed of vehicles
- Jet blast/Prop blast
- Aircraft engine run-up noise

The Contractor shall be vigilant in keeping the work areas in a safe and trash-free condition as much as possible so as to prevent debris from making its way onto active airfield pavements. The Contractor shall also exercise due care when working the vicinity of active aircraft. This can include the use of hearing protection and the securing of clothing and hardhats while working.

16.2 Barricades

16.2.1 Placement

Construction areas will be barricaded with either vertical panel or low-profile barricades on aircraft movement areas. For construction areas that do not include aircraft operating areas, vertical panel barricades may be used to prohibit vehicle and pedestrian traffic. All barricades must have flashing red or steady burn lights.

Barricades, temporary markers approved by the Airport, and any other warning equipment placed or left in areas adjacent to any open aircraft movement area, (i.e. runway, taxiway, taxilane, etc.), shall be as low to the ground as possible, and not more than 18 inches in height, (unless otherwise noted on the phasing plans). All barricades and temporary markers shall also be properly secured to withstand the site and elemental conditions. All barricading requirements regarding type, spacing, etc. were provided in the plans and are further identified in the Contract Documents. Low-profile barricades shall be used and shall be reflective, have an omni-directional steady-burning or flashing red LED light, and shall be properly secured (screwed-in). Clamps or straps will not be allowed.

Low-profile barricades shall be placed end-to-end to prevent ground vehicle traffic from moving onto active airfield pavements (barring a deliberate act), and alert aircraft traffic of closed facilities.

16.2.2 Lights

Red LED lights on low-profile barricades shall be of the omni-directional, flashing or steady-burn type. The rate of flash and illumination, as well as barricade reflectivity, shall meet the requirements of the latest edition of the MUTCD. Additional lighting shall be provided if determined necessary by Airport Operations.

16.2.3 Supplement Barricades with Signs

Signage shall be installed when determined necessary by Airport Operations, i.e. "No Entry".

16.2.4 Maintenance

The Contractor shall designate an employee (or Subcontractor) to be responsible for the regular maintenance of barricades and lighting. In addition, the Contractor shall provide an emergency contact number for the responsible individual to perform any emergency maintenance on any barricades or lighting and ensure functional operation of all hazard lighting and barricades 24 hours per day, 7 days per week. The designated person or subcontractor shall be able to respond to the Airport within one (1) hour of notification of a non-functioning barricade.

Barricading and lighting equipment shall be secured to prevent blow-down. This may include the use of water-filled items, sandbags, and/or flat heavy footings. Temporary lighting may be secured to the pavement with nails or screws.

16.3 Work Zone Lighting for Nighttime Construction

Lighting equipment must adequately illuminate the work area for construction performed during nighttime hours following minimum illumination levels per AC 150/5370-10H, *Standard Specifications for Construction of Airports*.

17. PROTECTION OF RSA'S, TSA'S, OFA'S, OFZ'S, AND APPROACH/DEPARTURE SURFACES

17.1 Runway Safety Area (RSA)

The project includes work within the Runway '4L-22R' Safety Area, requiring the closure of the runway which may only occur at night. The RSA is 150 feet wide, centered on the runway centerline. Closure of the runway requires two (2) lighted X's, which shall be provided by the Airport, but shall be maintained and operated by the Contractor. There are measures that include strict coordination with the Airport, ATCT, and the RPR. Contractor requests to perform work within a Runway Safety Area will require at least 48-hour notice to the Airport. The Airport will be responsible for the issuance of all NOTAMs.

17.1.1 Requirements for Open Procedures

Prior to a runway being reopened, the Contractor will be required to:

- Ensure that all new aircraft pavement (runways, taxiways, etc.) is completed in place (i.e., the existing pavement milled/removed at night must be repaved the same night for aircraft traversal the next morning).
- Provide a sweeper truck and/or vacuum truck and clean runway and taxiway pavements in the vicinity of the work areas.
- Straighten up the graded/infield areas such that there are no humps, ruts, depressions, equipment, tools, or other materials within the RSA.

- Perform a FOD/safety walk of the runway pavement and the adjacent graded/infield areas with Airport staff to ensure compliance with the reopening inspection.
- Perform any additional necessary actions as a result of the FOD/safety walk as required by the construction inspection and/or Airport staff.
- Remove the low-profile barricades used for night closures.
- Remove the lighted X's from the runway designation markings.

17.1.2 Appropriate Covering of Excavations Within RSA's

Prior to re-opening the runway, all excavations within the RSA and ROFZ shall be filled and compacted. The Contractor's site-specific and company safety plans/guidelines shall address the protection of these areas and the protection of the employees against these hazards.

17.1.3 Marking of Excavations and Open Trenches

Hazards, such as open trenches, major excavations, manholes, and steep embankments shall be barricaded, lighted, and outlined with appropriate caution tape or orange fabric construction fencing to prohibit accidental falls. The Contractor's site-specific and company safety plan/guidelines shall address the protection of these areas and the protection of the employees against these hazards. See **Section 16** – *Hazard Marking & Lighting* for further information.

17.1.4 Maintenance of RSA's

The Contractor will be required to maintain the RSA while work is being performed in the area. Upon completion of work within the RSA, the Contractor will be required to leave the area in accordance with RSA standards, or as identified in the plans.

17.2 Obstacle Free Zone (OFZ)

This project includes electrical work within the Runway '4L-22R' OFZ, which is 250 feet wide, centered on the runway centerline. When work is taking place within the runway OFZ, the contractor shall only work at night between 9pm to 6am and shall be in close coordination with Airport Operations. See **Section 17.1** *Runway Safety Area (RSA)* for further information.

17.3 Runway Object Free Area (ROFA)

No equipment or tools will be left unattended within the ROFA as the Contractor will be required to move these items to the Staging and Storage Area when not in use.

17.4 Taxiway Safety Area (TSA)

Multiple taxiways will be affected as part of this project, and as such, any taxiway having construction within its Safety Area and Object Free Area will be closed during construction duration/hours. No equipment or tools will be left unattended within the TOFA as the Contractor will be required to move these items to the staging and storage area when not in use.

17.4.1 Requirements for Open Procedures

Prior to any taxiway being reopened, the Contractor will be required to:

- Provide a sweeper truck and/or vacuum truck and clean the taxiway pavement in the vicinity of the work areas;

- Temporarily safe-up the graded/infield areas such that there are no humps, ruts, depressions, equipment, tools, or other materials within the TSA;
- Ensure that any excavation within the TSA is filled and compacted;
- Perform a FOD/safety walk of the taxiway pavement and the adjacent graded/infield areas with construction inspection and Airport staff to ensure compliance with these procedures;
- Remove the low-profile barricades from the applicable taxiways;
- Perform any additional necessary actions as a result of the FOD/safety walk as required by the construction inspection and/or Airport staff.
- Remove any barricades used for the temporary nightly closure.

17.4.2 Appropriate Covering of Excavations Within TSA's

Any excavation within any TSA shall be filled and compacted prior to reopening a taxiway.

17.4.3 Marking of Excavations and Open Trenches

Hazards, such as open trenches, major excavations, manholes, and steep embankments shall be barricaded, lighted, and outlined with appropriate caution tape or orange fabric construction fencing to prohibit accidental falls. The Contractor's site-specific and company safety plan/guidelines shall address the protection of these areas and the protection of the employees against these hazards. See **Section 16** *Hazard Marking & Lighting* for further information.

17.4.4 Maintenance of TSA's

The Contractor will be required to maintain the TSA while work is being performed in the area. Upon completion of work within the TSA, the Contractor will be required to leave the area in accordance with TSA standards, or as identified in the plans.

17.5 Taxiway Object Free Area (TOFA)

Multiple taxiways will be affected as part of this project, and as such, any taxiway having construction within its Object Free Area will be closed during construction duration/hours. No equipment or tools will be left unattended within the TOFA as the Contractor will be required to move these items to the staging and storage area when not in use. See **Section 17.4** *Taxiway Safety Area (TSA)* for further information.

17.6 Runway Approach & Departure Surfaces

It is not anticipated that any construction of this project will impact a Runway Approach or Departure Surface or Clearway.

18. OTHER LIMITATIONS ON CONSTRUCTION

18.1 Prohibitions

18.1.1 Use of Flare Pots

The use of flare pots is not permitted within the AOA at any time.

18.1.2 Use of Electrical Blasting Caps

The use of electrical blasting caps is not permitted within 1,000-ft of the Airport property.

18.2 Restrictions

18.2.1 Tall Equipment

The use of tall equipment is not permitted unless a 7460-1 determination letter is issued.

18.2.2 Open Flame Welding and Torches

Open flame welding and the use of torches shall be approved by the Airport prior to the project commencing. If this type of work is required on this project, the Contractor shall notify the Airport at least 48 hours in advance of the work.

18.2.3 Airfield Lighting Vault Lock-Out/Tag-Out Policy

This project includes installing new taxiway edge lighting in multiple areas of the project, and the contractor shall be responsible for scheduling and coordinating this work with the Airport so that the appropriate lock-out/tag-out procedures are strictly adhered to.

Prior to opening any electrical pull box or light cans, the appropriate circuits will be tagged and locked out at the vault room in accordance with OSHA requirements. A pre-event meeting shall be held on site at least 48 hours in advance of the work with the Contractor, the Airport, and the RPR to review the work undertaken, to familiarize all parties with the existing system and controls that will shut down and re-started, and to confirm lock-out/tag-out procedures used. The Contractor shall provide multi-position hasp and both the Contractor and the Airport will attach their own separate locks. No system shall be energized until such time that both parties have removed their locks, indicating a safe situation to energize. The system will be checked for functionality by the Contractor in the presence of a CHD staff member before leaving the project site.

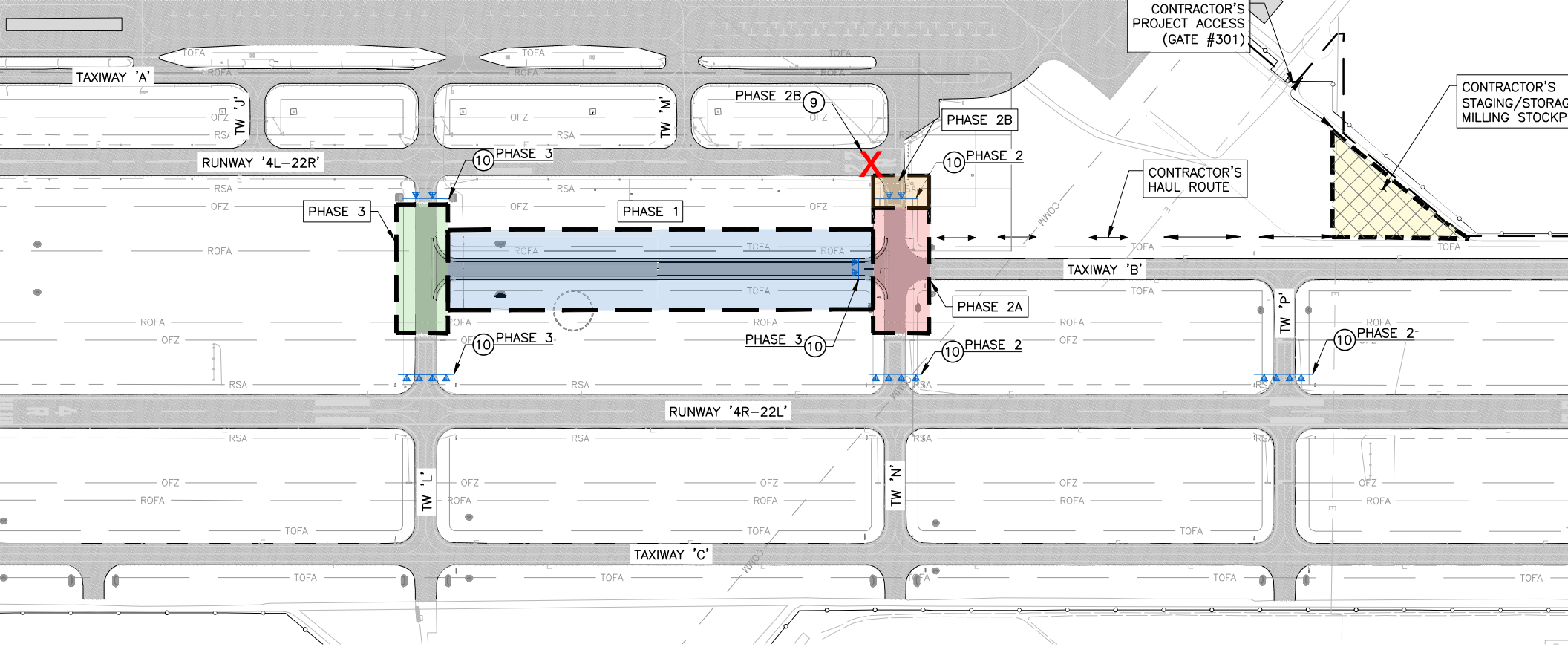
The purpose of this procedure is to standardize the lock-out/tag-out procedures between Electrical Contractors, Airport Electricians, Operations, and the Air Traffic Control Tower. This procedural checklist must be followed to the letter:

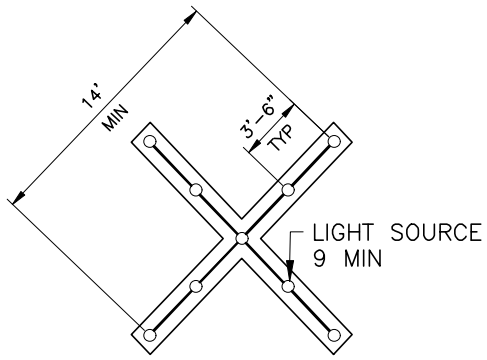
- The Airport electricians responding to a lock-out/tag-out request will coordinate with the ATCT through Operations.
- After Operations notifies electricians of closures, the Airport electricians will turn off the closed runways/taxiways using the airfield computer system.
- The Contractor will supply an approved breaker-locking device and lock, then lock off the individual breakers for the circuits to be locked out. These items will remain in the vault in a lock box provided by Airport.
- The load break elbows and/or S-1 switches will be pulled, locked on the corresponding regulator by the Electrical Contractor, and the S-1 cabinet will be locked by the Contractor.
- The Electrical Contractor and the Airport electricians must fill out lock-out/tag-out forms before leaving the Vault.
- Upon completion of the lock-out, the Contractor will remove all locks and install the load breaks and/or S-1 switches. All circuits must be verified operational in the manual mode on the regulator. Operations will perform a complete check of the lights in the field to verify actual operation.
- When that has been completed, the Airport electricians will notify the Airport Operations when lock-in is complete and regulators are in active control; Operations will notify the ATCT that they have control of the airfield lighting.
- Complete lock-out/lock-in forms.

18.2.4 Contractor Employee Safety

The Contractor and its employees shall employ safe practices per the Contractor's safety procedures and industry safety standards. The Contractor's safety procedures will ultimately dictate the use of protective clothing and equipment for its employees, but at a minimum, the Contractor's employees must be equipped with a Type 2 safety vest, and every employee that enters the site must be wearing said vest. The vest must be worn the entire time that the employee is within the AOA.

Appendix A Construction Phasing Plans





TEMPORARY RUNWAY CLOSURE LIGHTED 'X' NOTES:

1. 'X'S SHALL BE LIGHTED PER FAA AC 150/5345–55A, NPI.
2. THE USE AND APPLICATION OF A LIGHTED VISUAL AID FOR RUNWAY CLOSURE IS THE SUBJECT OF AC 150/5340–1, STANDARDS FOR AIRPORT MARKINGS, AND AC 150/5370–2, OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION.
3. CONTRACTOR SHALL PROVIDE THE NECESSARY MEANS TO SECURE THE 'X'S IN A MANNER THAT ENSURES AIRPORT SAFETY, (ANCHORING, SAND BAGS, ETC.), NPI.

(2) TEMPORARY RUNWAY CLOSURE LIGHTED 'X' DETAIL
NTS

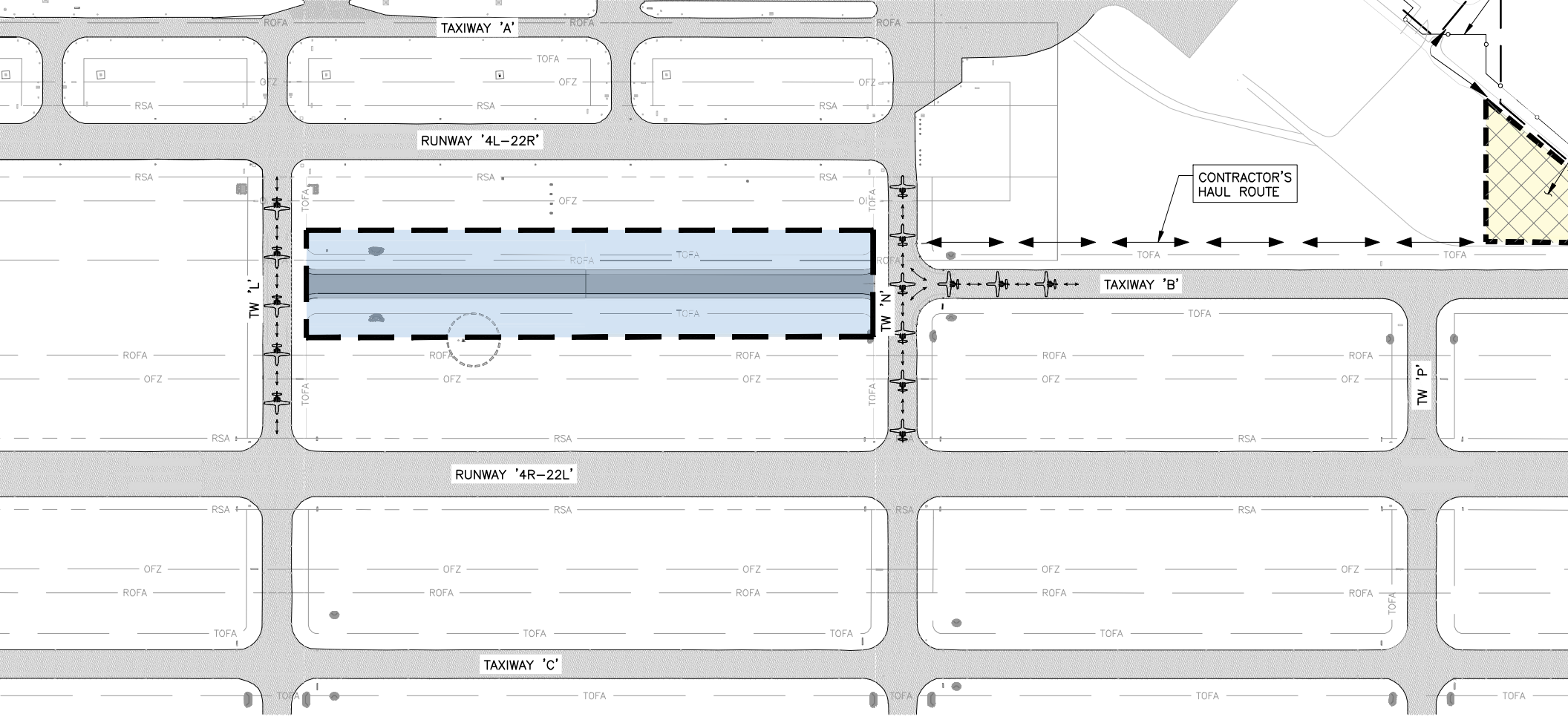
PROJECT ELEMENTS	DURATION
PHASE 1 CONSTRUCTION OUTSIDE OF TAXIWAY OBJECT FREE AREA. GRADING, PAVING & ELECTRICAL.	42 CALENDAR DAYS
PHASE 2A CONSTRUCTION IMPACTING TAXIWAY 'N' & TAXIWAY 'B' REQUIRING THEIR CLOSURE. GRADING, PAVING & ELECTRICAL.	21 CALENDAR DAYS CONCURRENT W/PHASE 1
PHASE 2B CONSTRUCTION WITHIN THE RW '4L–22R' OFZ REQUIRING NIGHT WORK REQUIRING A RUNWAY CLOSURE. ELECTRICAL.	5 NIGHTS CONCURRENT W/PHASE 2A
PHASE 3 CONSTRUCTION IMPACTING TAXIWAY 'L' REQUIRING ITS CLOSURE. GRADING, PAVING & ELECTRICAL.	21 CALENDAR DAYS CONCURRENT W/PHASE 1 SEQUENTIAL W/PHASE 2
PHASE 4 TEMPORARY MARKINGS	1 CALENDAR DAY SEQUENTIAL W/PHASE 1
SUBSTANTIAL COMPLETION	43 CALENDAR DAYS
STOP TIME (PAVEMENT CURE PERIOD)	30 CALENDAR DAYS
PHASE 5 PERMANENT PAVEMENT MARKINGS	1 CALENDAR DAY
FINAL COMPLETION	5 CALENDAR DAYS
TOTAL DURATION	49 CALENDAR DAYS

LEGEND

- PHASE 1
- PHASE 2A
- PHASE 2B
- PHASE 3
- CONTRACTOR'S STAGING/STORAGE & MILLINGS STOCKPILE AREA
- LOW–PROFILE BARRICADES
- CONTRACTOR'S HAUL ROUTE
- X LIGHTED 'X'

CONSTRUCTION NOTES

(9)	LIGHTED X FURNISHED BY AIRPORT MAINTAINED & OPERATED BY CONTRACTOR DET 2, DWG G3.0	NPI
(10)	LOW PROFILE BARRICADES W/ OMNI–DIRECTIONAL LIGHTS DET 1, DWG G3.0	NPI



PROJECT ELEMENTS

PHASE 1
CONSTRUCTION OUTSIDE OF TAXIWAY OBJECT FREE AREA. GRADING, PAVING & ELECTRICAL

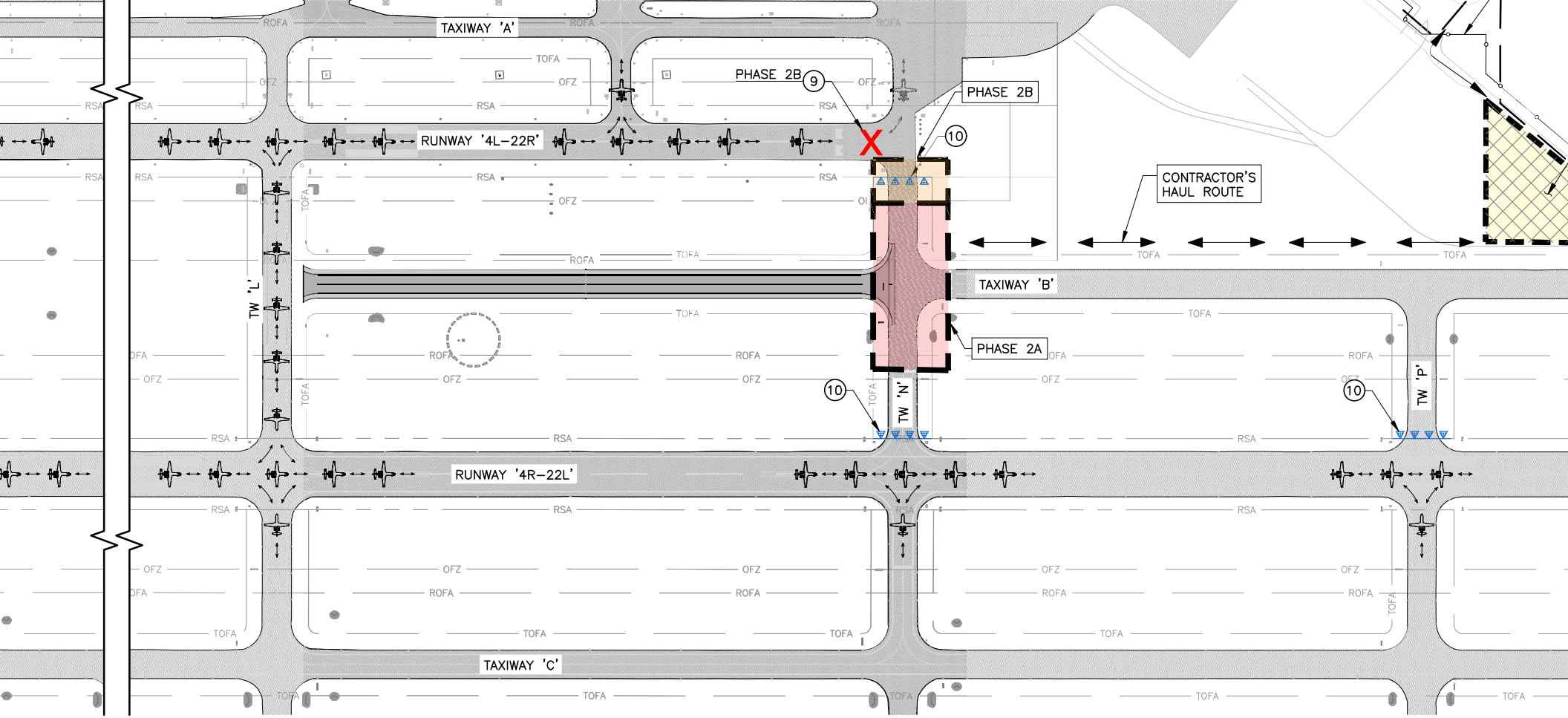
DURATION

42 CALENDAR DAYS

LEGEND

- PHASE 1
- CONTRACTOR'S STAGING/STORAGE & MILLINGS STOCKPILE AREA
- CONTRACTOR'S HAUL ROUTE
- AIRCRAFT ROUTE DURING CONSTRUCTION PHASE

1. ALL DURATION
2. BARRICADE PI THE DISCRETI STAFF TO AC MOVEMENT NE
3. CONTRACTOR WITH AIRPORT PHASE 1.
4. CONTRACTOR FOR TAXIWAY LOCKOUT/TAG
5. TAXIWAY 'L' & CLOSED AT T



CONSTRUCTION NOTES

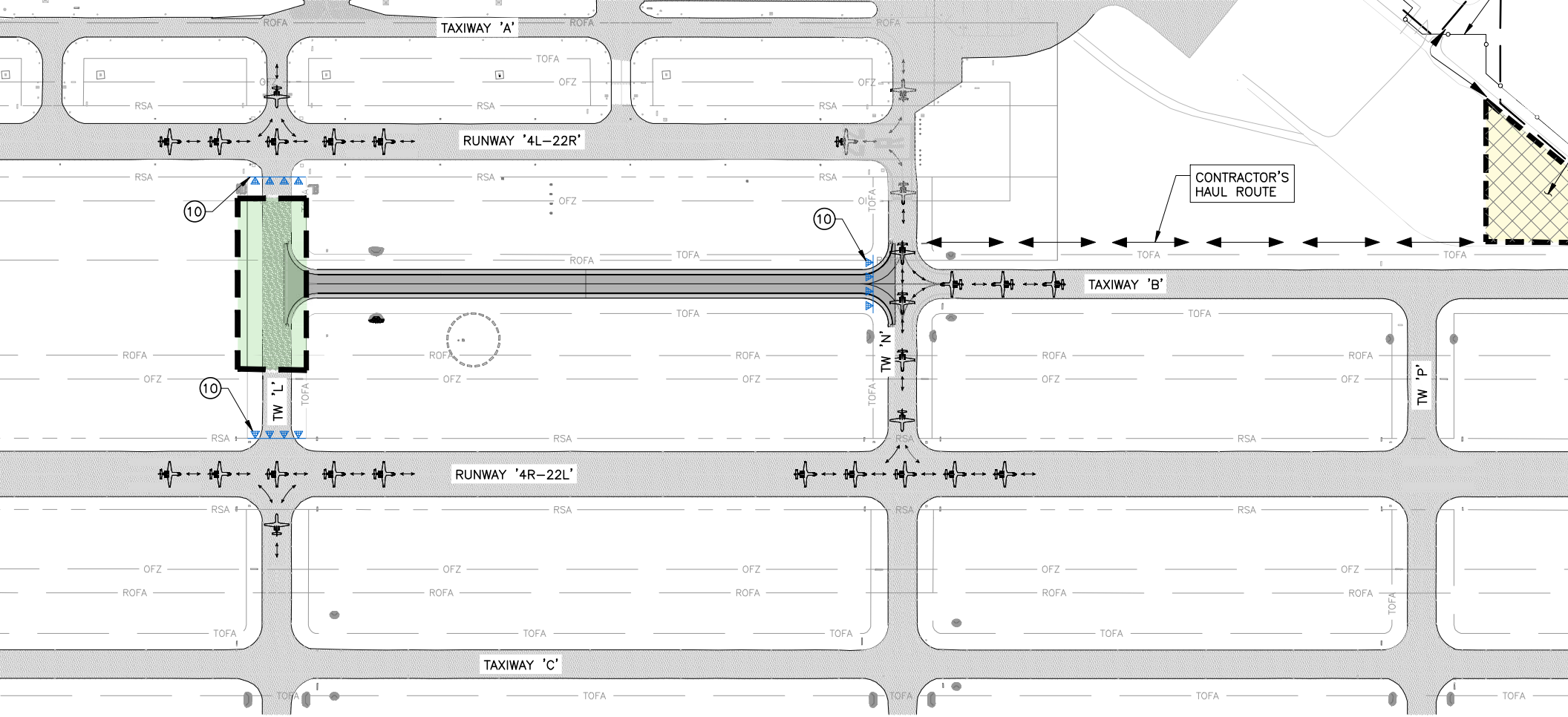
(9)	LIGHTED X FURNISHED BY AIRPORT MAINTAINED & OPERATED BY CONTRACTOR DET 2, DWG G3.0	NPI
(10)	LOW PROFILE BARRICADES W/ OMNI–DIRECTIONAL LIGHTS DET 1, DWG G3.0	NPI

PROJECT ELEMENTS	DURATION
PHASE 2A CONSTRUCTION IMPACTING TAXIWAY 'N' & TAXIWAY 'B' REQUIRING THEIR CLOSURE. GRADING, PAVING & ELECTRICAL.	21 CALENDAR DAYS CONCURRENT W/PHASE 1
PHASE 2B CONSTRUCTION WITHIN THE RW '4L–22R' OFZ REQUIRING NIGHT WORK REQUIRING A RUNWAY CLOSURE. ELECTRICAL.	5 NIGHTS CONCURRENT W/PHASE 2A

LEGEND

- PHASE 2A
- PHASE 2B
- CONTRACTOR'S STAGING/STORAGE & MILLINGS STOCKPILE AREA
- LOW–PROFILE BARRICADES
- CONTRACTOR'S HAUL ROUTE
- AIRCRAFT ROUTE DURING CONSTRUCTION PHASE
- X — LIGHTED 'X'

1. ALL DURATION
2. BARRICADE PL THE DISCRETI STAFF TO ACC MOVEMENT NE
3. CONTRACTOR FOR TAXIWAY LOCKOUT/TAG
4. NIGHTWORK S 9:00PM–6:00A W/AIRPORT O
5. RUNWAY CLOS WHILE WORK



CONSTRUCTION NOTES

(10) LOW PROFILE BARRICADES W/ OMNI–DIRECTIONAL LIGHTS DET 1, DWG G3.0 — NPI

PROJECT ELEMENTS

PHASE 3
CONSTRUCTION IMPACTING TAXIWAY 'L' REQUIRING ITS CLOSURE. GRADING, PAVING & ELECTRICAL.

DURATION

21 CALENDAR DAYS
CONCURRENT W/PHASE 1
SEQUENTIAL W/PHASE 2

LEGEND

- PHASE 3
- CONTRACTOR'S STAGING/STORAGE & MILLINGS STOCKPILE AREA
- LOW–PROFILE BARRICADES
- CONTRACTOR'S HAUL ROUTE
- AIRCRAFT ROUTE DURING CONSTRUCTION PHASE

1. ALL DURATION
2. BARRICADE PL THE DISCRETI STAFF TO ACC MOVEMENT NE
3. CONTRACTOR FOR TAXIWAY LOCKOUT/TAG

Appendix B Inspection Checklist

Item	Action Required (Describe)	No Action Required (Check)
Excavation adjacent to runways, taxiways, and aprons improperly backfilled.		
Mounds of earth, construction materials, temporary structures, and other obstacles near any open runway, taxiway, or taxi lane; in the related Object Free area and aircraft approach or departure areas/zones; or obstructing any sign or marking.		
Heavy equipment (stationary or mobile) operating or idle near AOA, in runway approaches and departures areas, or in OFZ.		
Equipment or material near NAVAIDs that may degrade or impair radiated signals and/or the monitoring of navigation and visual aids. Unauthorized or improper vehicle operations in localizer or glide slope critical areas, resulting in electronic interference and/or facility shutdown.		
Tall and especially relatively low visibility units (that is, equipment with slim profiles) — cranes, drills, and similar objects — located in critical areas, such as OFZ and approach zones.		
Improperly positioned or malfunctioning lights or unlighted airport hazards, such as holes or excavations, on any apron, open taxiway, or open taxi lane or in a related safety, approach, or departure area.		
Obstacles, loose pavement, trash, and other debris on or near AOA. Construction debris (gravel, sand, mud, paving materials) on airport pavements may result in aircraft propeller, turbine engine, or tire damage. Also, loose materials may blow about, potentially causing personal injury or equipment damage.		
Inappropriate or poorly maintained fencing during construction intended to deter human and animal intrusions into the AOA. Fencing and other markings that are inadequate to separate construction areas from open AOA create aviation hazards.		

Item	Action Required (Describe)	No Action Required (Check)
Improper or inadequate marking or lighting of runways (especially thresholds that have been displaced or runways that have been closed) and taxiways that could cause pilot confusion and provide a potential for a runway incursion. Inadequate or improper methods of marking, barricading, and lighting of temporarily closed portions of AOA create aviation hazards.		
Wildlife attractants — such as trash (food scraps not collected from construction personnel activity), grass seeds, tall grass, or standing water — on or near airports.		
Misleading or malfunctioning obstruction lights. Unlighted or unmarked obstructions in the approach to any open runway pose aviation hazards.		
Failure to issue, update, or cancel NOTAMs about airport or runway closures or other construction related airport conditions.		
Failure to mark and identify utilities or power cables. Damage to utilities and power cables during construction activity can result in the loss of runway / taxiway lighting; loss of navigation, visual, or approach aids; disruption of weather reporting services; and/or loss of communications.		
Lack of radio communications with construction vehicles in airport movement areas.		
Objects, regardless of whether they are marked or flagged, or activities anywhere on or near an airport that could be distracting, confusing, or alarming to pilots during aircraft operations.		
Water, snow, dirt, debris, or other contaminants that temporarily obscure or derogate the visibility of runway/taxiway marking, lighting, and pavement edges. Any condition or factor that obscures or diminishes the visibility of areas under construction.		
Spillage from vehicles (gasoline, diesel fuel, oil) on active pavement areas, such as runways, taxiways, aprons, and airport roadways.		

Item	Action Required (Describe)	No Action Required (Check)
Failure to maintain drainage system integrity during construction (for example, no temporary drainage provided when working on a drainage system).		
Failure to provide for proper electrical lockout and tagout procedures. At larger airports with multiple maintenance shifts/workers, construction contractors should make provisions for coordinating work on circuits.		
Failure to control dust. Consider limiting the amount of area from which the contractor is allowed to strip turf.		
Exposed wiring that creates an electrocution or fire ignition hazard. Identify and secure wiring and place it in conduit or bury it.		
Site burning, which can cause possible obscuration.		
Construction work taking place outside of designated work areas and out of phase		

EXHIBIT D

GIS / GPS DATA DELIVERY REQUIREMENTS

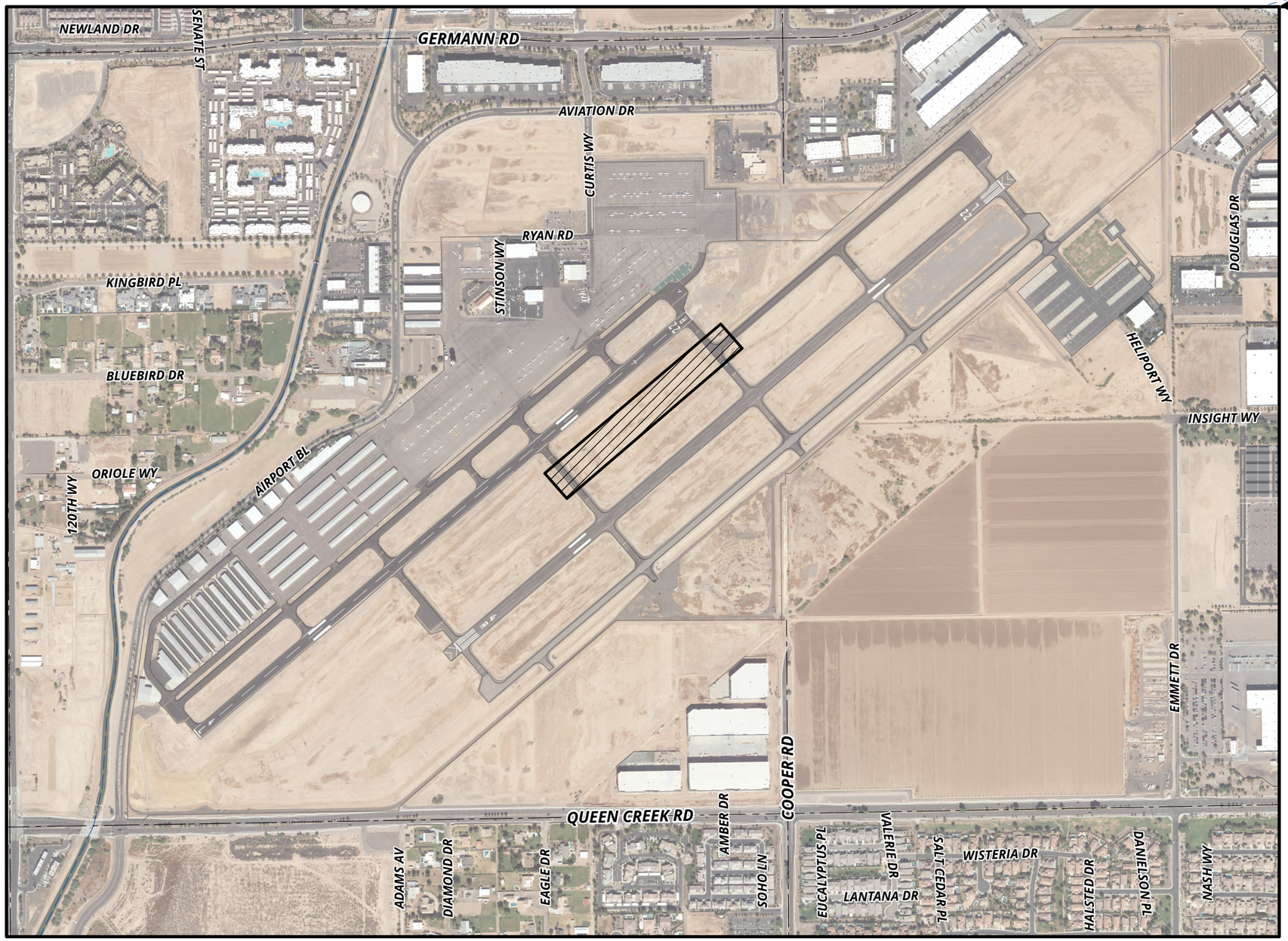
N/A

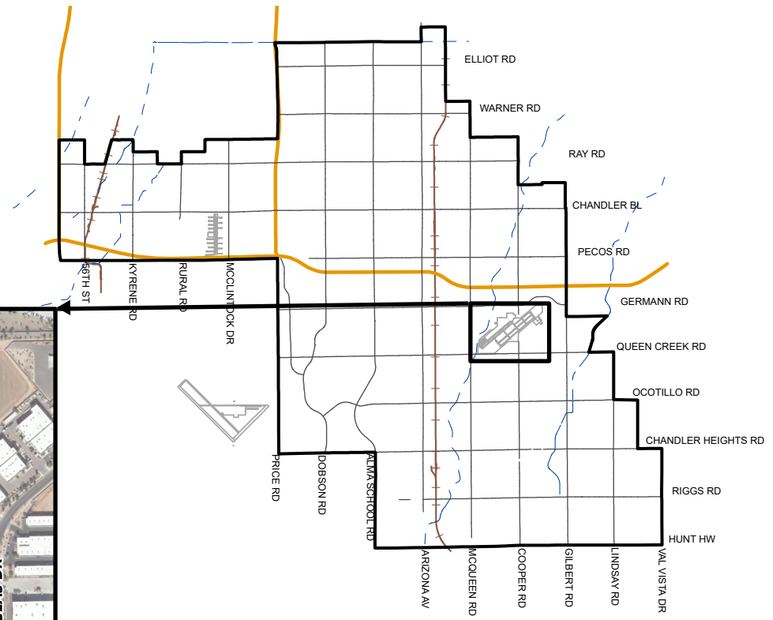
EXHIBIT E

FEDERAL PROVISIONS

N/A

TAXIWAY B IMPROVEMENTS PHASE 1
PROJECT NO.AI2302.401





MEMO NO. CP25-122

PROJECT LOCATION

NTS

ChanGIS

F:\ENGINEER\GENSERV_ArcGISPro_Shared\Map Requests\Capital Projects\2025\CP25-122\CP25-122\CP25-122.aprx 4/25/2025 CameronK

ITEM 2

CHANDLER arizona
Community of Innovation

City Council Memorandum **City Clerk's Office** **Memo No.**

Date:	June 12, 2025
To:	Mayor and Council
From:	Dana DeLong, City Clerk
Subject:	Approval of Minutes

Proposed Motion:

Move City Council approve the Council meeting minutes of the Special Meeting of April 29, 2025, the Special Meeting of May 12, 2025, the 4:00 PM Special Meeting of May 19, 2025, the 4:30 PM Special Meeting of May 19, 2025, and the Study Session of May 19, 2025.

Attachments

Minutes of the Special Meeting held on April 29, 2025
Minutes of the Special Meeting held on May 12, 2025
Minutes of the 4:00 pm Special Meeting held on May 19, 2025
Minutes of the 4:30 pm Special Meeting held on May 19, 2025
Minutes of the Study Session held on May 19, 2025

Meeting Minutes
City Council Special Meeting

April 29, 2025 | 9:30 a.m.
Chandler Museum, Saguaro Room
300 S. Chandler Village Dr., Chandler, AZ

Call to Order
The meeting was called to order by Mayor Kevin Hartke at 10:00 a.m.

Roll Call
Council Attendance
Mayor Kevin Hartke
Vice Mayor Christine Ellis
Councilmember Angel Encinas
Councilmember Jane Poston
Councilmember Matt Orlando
Councilmember OD Harris
Councilmember Jennifer Hawkins

Appointee Attendance
Joshua Wright, City Manager
Kelly Schwab, City Attorney
Dana DeLong, City Clerk

Staff in Attendance
Tadd Wille, Assistant City Manager
Dawn Lang, Deputy City Manager / Chief Financial Officer
Andy Bass, Deputy City Manager
Matt Burdick, Communications & Public Affairs Director
Brittany Barba, Digital Content Creator
Kevin Snyder, Development Services Director
Micah Miranda, Economic Development Director
Judy Tincher, Lancaster Leadership

Welcome
JUDY TINCHER, Lancaster Leadership, provided introductions and presented the following presentation.

- Agenda
- Rules of the Day / Polarities

- Judy Tincher

Discussion

1. Strategic Framework Common Themes from Interviews

MS. TINCHER continued the presentation.

- Strategic Framework
- What Sticks Out?
- What I know about ground rules
- Establish Ground Rules
- Common Themes from Interviews

2. Staff Presentations

Economic Development - Micah Miranda

MICAH MIRANDA, Economic Development Director, presented the following presentation.

- Economic Update: History of Target Industry Projects
- Targeted Industries
- History of Key Industry Projects
- History of Key Industry Projects
- History of Key Industry Projects
- History of Key Industry Projects
- Target Industry Employment
- Employment Base
- Jobs to Households
- Prosperous Community
- Summary
- Things to Think About

COUNCILMEMBER HARRIS suggested that Chandler should look at healthcare services and policies to help Chandler move forward and asked if policies would be continually updated to give more flexibility for developments coming in.

MR. MIRANDA responded that he had discussed doing code updates more frequently which makes it easier for staff and meets the market proactively.

COUNCILMEMBER POSTON commented that Chandler is looking for things to move forward. Making investments and developing sites to be shovel ready can assist in economic development.

COUNCILMEMBER ORLANDO asked when it becomes more economical to repurpose or infill an area versus starting new, what is the economic model.

MR. MIRANDA said there is not a simple explanation as each site is unique. The breakeven point has to do with verticality. If developers change use, it may affect the capacity of water and wastewater systems. Use is driven by the infrastructure.

COUNCILMEMBER POSTON thanked staff for the presentation and emphasized creative messaging for improvements made to business areas.

MAYOR HARTKE said underground utilities are difficult to upgrade in North Chandler.

VICE MAYOR ELLIS emphasized that creativity in infill and development projects are essential to pursue.

MR. MIRANDA said some more tangible ideas will be coming in the visioning project.

Development Services - Kevin Snyder
KEVIN SNYDER, Development Services Director, presented the following presentation.

- State of Development & A Little Bit of Housing…
- Chandler Development Process
- Current Performance of Development Services
- Plan Review Performance Measures
- Rezoning Applications Performance Measures
- Housing Update
- Residential Units Approved Not Built
- Remaining Land
- Recent State Legislative Changes Affecting Housing
- Recent State Legislative Changes Affecting Housing (cont.)
- Proposed Legislative Changes Still Under Consideration
- Proposed Legislative Changes That Did Not Pass
- Next Steps/ Projects in Process
- Thank you! Questions?

COUNCILMEMBER POSTON asked if developers are waiting for the implementation of HB 2721 allowing for middle housing which is allowed on all lots zoned for single-family residential use.

MR. SNYDER said there has been a lot of conversation around middle housing. HB 2721 allows for middle housing by right. The market might wait for that to be in place before moving forward with developments. Middle housing projects are more complex.

COUNCILMEMBER POSTON said middle housing is allowed for by right, but it would still need to follow Chandler housing standards.

MR. SNYDER said that is correct.

COUNCILMEMBER ORLANDO said that infill and redevelopment has been a focus of the community.

MR. SNYDER said Chandler is looking at things differently, where new developers looking for infill and redevelopment requires more problem solving and more resources. Staff investigates current and future needs for development.

COUNCILMEMBER ORLANDO asked about the timeframe.

MR. SNYDER said it depends on some projects already in the works. One is the housing assessment study, which aims to define Chandler's housing priorities in the market.

VICE MAYOR ELLIS asked about what Development Services is working on for Chandler's infrastructure.

MR. SNYDER said there has been some reorganization within the department for efficiency. The department has also been engaged in continuous process improvement to refresh procedures.

MAYOR HARTKE commented that they need to engage with the legislative session differently, to anticipate what will come back to cities and towns.

MR. SNYDER said Chandler is in a unique position to take a leadership opportunity in answering questions from the legislature early on.

COUNCILMEMBER ENCINAS commented that the infill and redevelopment projects may be a key piece in the future of Chandler. He asked how staff engages with developers who may need more time and resources from Chandler.

MR. SNYDER said there is room for improving processes and empowering people to be decision makers and problem solvers. The department has been also working to implement succession planning to ensure processes are consistent.

COUNCILMEMBER HARRIS asked about creativity in problem solving.

MR. SNYDER said engaging and finding solutions early contributes to the problem-solving process for creative infill and redevelopment. Looking at corridors as a solution for housing and business development may be a step to creativity in the marketplace, as not many other municipalities are looking into this.

COUNCILEMEMBER HARRIS asked if he meant creativity in the types of projects, or creativity used to get those projects on the ground.

MR. SNYDER answered that staff has to get creative with the development community to be comfortable with the risk of new types of development: designs, styles, and products.

COUNCILMEMBER POSTON asked if there are staff with experience with redevelopment.

MR. SNYDER answered that he and Mr. Miranda have professional experience with redevelopment, but their staff does not always have the same experience with redevelopment.

COUNCILMEMBER POSTON commented that encouraging growth in this area is a key point for new members joining the team or for education and training for existing employees.

3. Four-Step Work Session on Strategic Framework

MS. TINCHER continued the presentation and led the discussion and activity.

- 7 Responsibilities of This Council
- Work Session
- Individual Reflection: 1-2 sub-priorities
- Stations: 10 minutes each
- Gallery Walk
- Roundtable

4. Council Topics and Closing Exercise

Council discussed the following priorities

- Economic Vitality
- Neighborhoods
- Quality of Life
- Sustainability & Technology
- Connectivity
- Community Safety

MS. TINCHER thanked Council for their participation during the session, and asked Council to provide any other topics they came up with.

Public Comment

None.

Adjourn

The meeting was adjourned at 3:20 pm.

ATTEST: _____ _____

City Clerk Mayor

Approval Date of Minutes: June 12, 2025

Certification

I hereby certify that the foregoing minutes are a true and correct copy of the minutes of the Special Meeting of the City Council of Chandler, Arizona, held on the 29th day of April 2025. I further certify that the meeting was duly called and held and that a quorum was present.

DATED this _____ day of June, 2025.

_____
City Clerk

Meeting Minutes
City Council Special Meeting

May 12, 2025 | 9:30 a.m.
City Hall, 5th Floor Conference Room
175 S. Arizona Ave., Chandler, AZ

Call to Order
The meeting was called to order by Mayor Kevin Hartke at 9:32 a.m.

Roll Call
Council Attendance
Mayor Kevin Hartke
Vice Mayor Christine Ellis
Councilmember Angel Encinas
Councilmember Jane Poston
Councilmember Matt Orlando
Councilmember OD Harris
Councilmember Jennifer Hawkins

Appointee Attendance
Joshua Wright, City Manager
Kelly Schwab, City Attorney
Dana DeLong, City Clerk

Staff in Attendance
Leah Powell, Neighborhood Resources Director
Riann Balch, Community Resources Senior Manager
Ryan Reeves, Airport Manager
Cherie Stone, Government Relations Senior Program Manager

Others in Attendance
Congressman Greg Stanton, District 4

Discussion
1. Welcome and Introductions - Mayor Kevin Hartke

MAYOR HARTKE welcomed and introduced Congressman Greg Stanton, District 4 and other participants.

2. Discussion of 2025 Federal Policies

CONGRESSMAN GREG STANTON led with opening remarks about water and infrastructure. The Council and Congressman Stanton discussed issues important to Chandler and ways they can partner to address these issues.

LEAH POWELL, Neighborhood Resources Director, presented the following presentation.

- Congressman Stanton
- Meeting Intent
    - Strategic Framework Direction
    - What is the City Already Doing?
        - Community Development
        - Public Housing
    - Challenges and Future Impacts
        - Funding
        - Policies
- What Do the Guiding Documents Say?
    - General Plan and Other Guiding Documents
        - Provide for a variety of housing choices for all income levels
        - Continue to encourage private investment in affordable housing
        - Increase capacity for and coordination of affordable housing programs and projects
        - Concentrate of improving housing affordability citywide
        - Encourage compatible infill projects
        - Housing element included the General Plan / Comprehensive Housing Plan
        - Downtown Area Update
- Actions and Strategies
    - Keep Housing Affordable and in Good Repair
    - City Public Housing Authority Providing 303 units
        - 163 family units
        - 37 senior units
        - 103 single-family homes
    - Repositioning Public Housing through Rental Assistance Demonstration (RAD)
        - Villas on McQueen 157 units
        - Haven on Hamilton 250 units
        - Additional Sites
    - Housing Rehabilitation Program
        - Average of 25 homes per year received assistance with repairs related to health and safety
    - Let's Pull Together
        - FY 2023/2024, volunteers worked on over 250 homes
- Actions and Strategies
    - Help People Stay in Their Homes and Communities
    - Tenant Based Rental Assistance (TBRA)

        - 25 vouchers providing for 24 months of assistance
        - HOME funded
        - Follow HUD HOME Rent Limits
        - Tenant pays 30% of their income
    - Emergency Housing Vouchers (EHV)
        - 28 vouchers provide assistance through 2030*
            - *Program now sunsets December 2026
        - ARPA funded
        - Follow HUD payment standards
        - Tenant pays 30% of their income
    - VASH
        - 20 Veterans with wrap around services from VA
- Chandler Connect: FY 2023-2024
    - Street Outreach and Engagement
    - 621 households, including 782 persons served
    - 86% positive outcomes
- Operation Open Door
    - Non-Congregate Shelter
    - 171 households, including 356 persons served
    - 98% positive outcomes
- Housing Stability Case Management: FY 2023-2024
    - Supports TBRA, EHV, HCV, and VASH Tenants
    - 100 Households, including 212 persons served
    - 97% positive outcomes
- Challenges and Future Impacts
- President's Proposed FY 2026-2027 Budget
    - CDBG-Funded Programs at Risk
    - Client Services
        - Homeless outreach and navigation services
        - 1 FTE Community Navigator
        - 0.5 FTE Client Resources Representative
    - Public Housing Youth Program
        - Recreational and educational activities for youth
        - Two 0.5 FTE Recreation Coordinators
    - Code Enforcement
        - Targeted enforcement in low-mod areas (North Chandler)
        - 1 FTE Code Enforcement Officer
- President's Proposed FY 2026-2027 Budget
    - CDBG-Funded Programs at Risk (cont.)
    - Capital Improvements
        - Public Facility and infrastructure improvements in low/mod areas
        - Neighborhood facilities, parks, streets, sidewalks
    - Housing Rehabilitation Program
        - Serves approximately 25 households per year

        - 1 FTE Housing Rehabilitation Specialist
    - Program Administration
        - 1 FTE CDBG Coordinator
        - 0.5 FTE CDBG Senior Program Manager
        - 0.5 FTE Client Resources Representative
    - Relocation Assistance
        - Support for up to 80 households from public housing
        - Moving to The Haven on Hamilton (Fall 2027)
- President's Proposed FY 2026-2027 Budget
    - HOME-Funded Programs at Risk
    - Tenant-Based Rental Assistance (TBRA) Program
        - Rental assistance for up to 24 months per household
        - Currently supporting 25 households
        - No capacity to add new clients without additional funding
    - Public Housing Redevelopment (RAD) Projects
        - HOME funds for Gap Financing
        - Assists low-income households
- President's Proposed FY 2026-2027 Budget
    - Rental Assistance Programs at Risk
    - Housing Choice Voucher (HCV)
        - 43% funding reduction approximately 214 impacted households
        - Impact to landlords accepting vouchers
    - Public Housing
        - Reduced ability to operate City-owned housing sites
        - Potential forced sale of scattered sites
        - Significant reduction of multi-family sites
    - Family Self-Sufficiency Program elimination
        - Would impact 120 Chandler households annually
- Policy Change Impacts
    - Current and Proposed
    - Difficult to Develop Areas (DDA)
        - Previous DDAs have lost their designation and will no longer qualify for LIHTC funding
        - No process to be granted an exception
    - Emergency Housing Vouchers
        - City administers 28 Emergency Housing Vouchers
        - Program funding will be exhausted December 2026 (not 2030)
        - Awaiting guidance on absorbing these vouchers into HCV program
    - Additional Policy Changes (Proposed in President's Budget)
        - Two-year assistance cap for all able-bodied adults
        - Would impact over 550 Chandler households
- Other Issues
    - VASH Vouchers

- VA terminated VASH voucher for Chandler household for non-participation in case management. Voucher shouldn't have been terminated while PHA was on shortfall.
- Chandler was unable to transfer Veteran to HCV because:
  - HUD believes Veteran must be on waitlist
  - HUD believes termination makes Veteran ineligible for HCV
- Chandler stepped in with case management and landlord engagement to keep Veteran housed, but Veteran now owes approximately $20,000 because no subsidy is in place
- VA will only reinstate VASH voucher if Veteran gets a payee which requires rating of "incapacitated" – VA doctor does not support.
- HUD asked city to request waiver of requirement for Veteran to be on waitlist but will not backdate subsidy should they approve
- Chandler working with Veteran intensively on case management and payback plan for Veteran portion.

- Questions

RYAN REEVES, Airport Manager, presented the following presentation.

- Chandler Municipal Airport (CHD)
- Facility Overview
- Facility Overview
  - Aeronautical business include:
    - Flight training
    - Fixed base operator
    - Charter services
    - Aircraft repair & maintenance
    - Aircraft sales
    - Aircraft avionics
    - Aircraft rental
- Facility Overview
  - 17th busiest GA airport in US 240,000+ operations
    - 48th busiest airport in US
  - 6th busiest airport in Arizona
    - "Regional Reliever" classification by FAA
  - Two parallel runways (4,870 ft. and 4,401 ft.)
  - Only public airport in Maricopa County with runways <5,000 ft.
  - One of three GA airports in Maricopa County with two runways
- Airport Operations
  - An operation is one take-off or one landing
  - 1995: Air Traffic Control Tower built
  - 2006: Highest year for operations
- CHD's Role
  - National Plan of Integrated Airport Systems
  - 382 Existing NPIAS Airports
  - 2,950 non-primary
    - 2,564 General Aviation

        - 259 Relievers
        - 127 Comm. Service
- Surface Traffic
- Traffic Pattern
- Area Traffic
- CHD's Reach
- Our Reach
- CHD's 2015 Economic Impact
- "A Day in the Life…"
- ADOT Grant – Taxiway Bravo Extension
    - 100% ADOT Grant
- FAA Grant – RWY 4R-22L Rehabilitation
- What Aviation Means to Arizona
- Historical Funding Cuts
- What Aviation Means to Arizona

Public Comment

None.

Adjourn

The meeting was adjourned at 10:35 a.m.

ATTEST: _____ _____

City Clerk Mayor

Approval Date of Minutes: June 12, 2025

Certification

I hereby certify that the foregoing minutes are a true and correct copy of the minutes of the Special Meeting of the City Council of Chandler, Arizona, held on the 12th day of May 2025. I further certify that the meeting was duly called and held and that a quorum was present.

DATED this _____ day of June, 2025.

_____

City Clerk

Meeting Minutes
City Council Special Meeting

May 19, 2025 | 4:00 p.m.
Council Chambers Conference Room
88 E. Chicago St., Chandler, AZ

Call to Order
The meeting was called to order by Mayor Kevin Hartke at 4:01 p.m.

Roll Call
Council Attendance
Mayor Kevin Hartke
Vice Mayor Christine Ellis
Councilmember Angel Encinas
Councilmember Jane Poston
Councilmember Matt Orlando
*Councilmember OD Harris
Councilmember Jennifer Hawkins

Appointee Attendance
Joshua Wright, City Manager
Kelly Schwab, City Attorney
Dana DeLong, City Clerk

*Councilmembers Harris attended virtually.

Set an Executive Session
1. Executive Session for Legal Advice-–A.R.S. Section 38-431.03(A)(3) - Discussion or consultation with legal counsel for legal advice relating to City Charter appointive officer requirements.

Action Agenda Motion and Vote
Councilmember Poston moved to hold an Executive Session Meeting immediately following the Special Meeting; Seconded by Councilmember Hawkins.

Motion carried unanimously (7-0).

Adjourn

The meeting was adjourned at 4:01 pm.

ATTEST: _____ _____

City Clerk Mayor

Approval Date of Minutes: June 12, 2025

Certification

I hereby certify that the foregoing minutes are a true and correct copy of the minutes of the Special Meeting of the City Council of Chandler, Arizona, held on the 19th day of May 2025. I further certify that the meeting was duly called and held and that a quorum was present.

DATED this _____ day of June, 2025

_____

City Clerk

Meeting Minutes
City Council Special Meeting

May 19, 2025 | 4:30 p.m.
Council Chambers Conference Room
88 E. Chicago St., Chandler, AZ

Call to Order
The meeting was called to order by Mayor Kevin Hartke at 4:46 p.m.

Roll Call
Council Attendance
Mayor Kevin Hartke
Vice Mayor Christine Ellis
Councilmember Angel Encinas
Councilmember Jane Poston
Councilmember Matt Orlando
*Councilmember OD Harris
Councilmember Jennifer Hawkins

Appointee Attendance
Joshua Wright, City Manager
Kelly Schwab, City Attorney
Dana DeLong, City Clerk

*Councilmembers Harris attended virtually.

Set an Executive Session
1. Executive Session for Legal Advice-–A.R.S. Section 38-431.03(A)(3) - Discussion or consultation with legal counsel for legal advice relating to City Charter election requirements.

Action Agenda Motion and Vote
Councilmember Poston moved to hold an Executive Session Meeting immediately following the Special Meeting; Seconded by Vice Mayor Ellis.

Motion carried unanimously (7-0).

Adjourn

The meeting was adjourned at 4:46 pm.

ATTEST: _____ _____

City Clerk Mayor

Approval Date of Minutes: June 12, 2025

Certification

I hereby certify that the foregoing minutes are a true and correct copy of the minutes of the Special Meeting of the City Council of Chandler, Arizona, held on the 19th day of May 2025. I further certify that the meeting was duly called and held and that a quorum was present.

DATED this _____ day of June, 2025

_____

City Clerk

Meeting Minutes
City Council Study Session

May 19, 2025 | 6:00 p.m.
Chandler City Council Chambers
88 E. Chicago St., Chandler, AZ

Call to Order
The meeting was called to order by Mayor Kevin Hartke at 6:00 p.m.

Roll Call
Council Attendance
Mayor Kevin Hartke
Vice Mayor Christine Ellis
Councilmember Angel Encinas
Councilmember Jane Poston
Councilmember Matt Orlando
*Councilmember OD Harris
Councilmember Jennifer Hawkins

Appointee Attendance
Joshua Wright, City Manager
Kelly Schwab, City Attorney
Dana DeLong, City Clerk

*Councilmember OD Harris attended virtually.

Scheduled Public Appearances
MAYOR HARTKE invited Councilmember Poston to join him for the recognitions.

1. Recognition: For Our City Day Sponsors
MAYOR HARTKE invited the For Our City Day Sponsors to be recognized.

PRISCILLA QUINTANA, Neighborhood Preservation Manager, recognized sponsors from Salvation Army Captain Philpot and Lieutenant Philpot, Resurrection Street Ministry Bill Barry, Street Sponsors PCL Tyler Richard and Velocity, Block Sponsors Vyabi, Kim Beck - Home Depot, Red Canyon Supply, Aeli Juarez Pioneer Landscaping, Rick Edens, Compass Christian Church, Steven Buckner and Sam Thomas. Neighborhood Sponsors – Waste Management, Victoria Richie, and Connor Anderson – Sherwin-Williams.

2. Recognition: Chandler Hot Shots

MAYOR HARTKE invited members from the Chandler Hot Shots: Danae Bell, Baylee Webster, Jireh Bell, Deja Bell, and Judah Bell to be recognized.

3. Recognition: Read On Chandler

MAYOR HARTKE invited Joanne Floth from Read On Chandler to be recognized.

MS. FLOTH thanked the Mayor and Council for joining the VIP Guest Reader event in April, with 100% participation. Mayor visited three schools, and Councilmember Orlando visited several as well. She praised them for doing a great job reading to the kids and thanked them for supporting literacy and the community. Over two years, 25 VIP readers reached over 2,200 students in nine Title I schools and helped distribute 24,000 books. She introduced Ricardo Yancey Jr., a local children's author, who gave each of them a book as a thank-you gift.

MR. YANCEY thanked Ms. Floth and shared that his book, *My Best Friend Granny,* is a tribute to his grandmother. He appreciated the support from Read On Chandler, Chandler Public Library, and Barnes & Noble. He announced a Kickstarter for an animated short film based on the book and encouraged everyone to spread the word or support the project.

Consent Agenda and Discussion

Discussion was held on items 6, 18, and 19.

City Clerk

1. Approval of Minutes
   Move City Council approve the Council meeting minutes of the Study Session of May 5, 2025 and the Regular Meeting of May 8, 2025.

2. Boards and Commissions Member Appointments
   Move City Council approve the Boards and Commissions appointments as recommended.

City Magistrate

3. Agreement No. CC4-961-4762, Amendment Nos. 1, and 2, for Public Defender Services
   Move City Council approve Agreement No. CC4-961-4762, Amendment No. 1, with Jared Allen, Law Office of Jared Allen, PLLC; Ursula H. Gordwin, Gordwin Law, PLLC; and Christopher J. Palmisano, The Law Offices of Christopher J. Palmisano, PLC; and Amendment No. 2, with Manny A. Jacobo, Jacobo Law Firm, PLLC, for public defender services, in an amount not to exceed the total of $454,000, for the period of one year, beginning July 1, 2025, through June 30, 2026.

Community Services

4. Job Order Project Agreement No. LI2401.401 with Caliente Construction, Inc.,

Pursuant to Job Order Master Agreement No. JOC2409.401, for the Hamilton Library Improvements

Move City Council award Job Order Project Agreement No. LI2401.401 to Caliente Construction, Inc., pursuant to Job Order Master Agreement No. JOC2409.401, for the Hamilton Library Improvements, in an amount not to exceed $1,148,917.30, and approve a contingency appropriation transfer from the General Fund Contingency Account to the Library Bond Fund, Library Facilities Improvement Program, in the amount of $175,000 to allow additional bond funds to be used toward the project.

Economic Development

5. Resolution No. 5907, Approving a Sustainable Water Service Agreement Between Applied Materials, Inc., and City of Chandler, Allocating Tier II Water for a Semiconductor Equipment Manufacturing Facility Located at 2377 South Arizona Avenue

   Move City Council pass and adopt Resolution No. 5907, approving a Sustainable Water Service Agreement between Applied Materials, Inc., a Delaware Corporation, and the City of Chandler, allocating Tier II Water for a semiconductor equipment manufacturing facility located at 2377 South Arizona Avenue.

Fire Department

6. Agreement No. FD4-948-4766, Amendment No. 1, for First Responder Cancer Screenings

   Move City Council approve Agreement No. FD4-948-4766, Amendment No. 1, with Vincere Physicians Group, PLLC, dba Vincere Cancer Center, for first responder cancer screenings, in an amount not to exceed $550,000, for the period of one year, beginning July 1, 2025, through June 30, 2026.

KEITH HARGIS, Assistant Fire Chief, thanked Councilmember Poston for bringing the item forward and recognized the importance of cancer prevention for Chandler firefighters. He shared that cancer is now the leading cause of line-of-duty deaths for firefighters in the U.S. Firefighters are at much higher risk than the general public for several cancers. Chandler Fire has also been personally affected, with its only line-of-duty death caused by cancer. Over the past two years, cancer screening participation has been high—95% in the first year and over 75% so far this year. These screenings identified eight cancers, including one serious and one life-threatening case. He emphasized that early screening saves lives and is more cost-effective than treatment. He noted that cancer screening is two to four times less expensive than treating cancer. The department supports continuing the program, which will include services like lung scans, breast ultrasounds, and PSA testing. He thanked Council and city management for their support.

COUNCILMEMBER POSTON thanked staff for the presentation, saying it answered most of her questions. She was glad to hear about the strong participation in the screening program and praised the team for their efforts. She said the program is important to her and expressed full support for keeping firefighters healthy and safe.

ASSISTANT CHIEF HARGIS said the department shares the same sense of responsibility. He noted that Chandler Fire currently has the highest participation rate in cancer screening among regional fire departments, setting the standard for others. He credited this success to the strong support from the City Council, the City Manager's Office, and the department's commitment. He thanked everyone again for their support.

VICE MAYOR ELLIS thanked staff and said she has supported the pilot program every year to help the public see its importance. As a first responder, she said she is proud of the impact it's making. She explained that the cancers being screened are serious and often show no warning signs. Early detection through this program can save lives. She thanked everyone for their support and stated that she believes the program will soon transition beyond the pilot stage.

ASSISTANT CHIEF HARGIS said he was glad to speak about the program and the positive impact it has for everyone involved.

Information Technology

7. Purchase of Information Technology Research Subscription Services
   Move City Council approve the purchase of information technology research subscription services, from Gartner, Inc., utilizing the State of Arizona Contract No. CTR053240, in an amount not to exceed $175,000, for the period of one year, beginning July 1, 2025, through June 30, 2026.

8. Purchase of SmartSheet Subscription and Professional Services
   Move City Council approve the purchase of a SmartSheet subscription and professional services from Carahsoft Technology Corporation, utilizing the State of Arizona Contract No. CTR046098, in an amount not to exceed $470,106.

Management Services

9. Resolution No. 5863, Designating the Chief Fiscal Officer for Officially Submitting the Fiscal Year 2026 Expenditure Limitation Report to the Arizona Auditor General
   Move City Council pass and adopt Resolution No. 5863, designating the Chief Fiscal Officer for officially submitting the Fiscal Year 2026 Expenditure Limitation Report to the Arizona Auditor General.

10. Agreement No. MS1-926-4312, Amendment No. 4, for Emergency Environmental Response and Remediation Services
    Move City Council approve Agreement No. MS1-926-4312, Amendment No. 4, with Emergency Environmental Services, GrayMar Environmental Services, Inc., and Kary Environmental Services, for emergency environmental response and remediation services, in a combined amount not to exceed $150,000, for the period of one year, beginning July 1, 2025, through June 30, 2026.

11. Agreement No. WH3-890-4597, Amendment No. 2, for Waterworks Supplies
Move City Council approve Agreement No. WH3-890-4597, Amendment No. 2, with Core and Main, LP, and Ferguson Enterprises, LLC, for waterworks supplies, in an amount not to exceed $700,000, for the period of June 1, 2025, through May 31, 2026.

Police Department

12. Resolution No, 5092, Authorizing an Intergovernmental Agreement for the Renewal of and Participation in the Arizona Child Abduction Response Team
Move City Council pass and adopt Resolution No. 5092 authorizing an intergovernmental agreement for the renewal of and participation in the Arizona Child Abduction Response Team (AZCART).

Public Works and Utilities

13. Purchase of Asphalt Products and Services
Move City Council approve the purchase of asphalt products and services from Weems Asphalt, LLC; Cactus Asphalt, Inc.; Roadrunner Paving & Asphalt Maintenance, LLC; and Sunland Asphalt & Construction, LLC, utilizing 1GPA Agreement No. 22-15P, in a combined amount not to exceed $2,088,000.

14. Settlement Agreement with Price & Queen Creek, LLC, for an Extension of a Temporary Construction Easement (TCE) Required for the Price Road Sewer
Rehab Project No. WW2302
Move City Council approve a settlement with Price & Queen Creek, LLC, an Arizona limited liability company, in the amount of Two Hundred Thousand and no/100ths dollars ($200,000), for extension of a TCE required for the Price Road Sewer Rehab Project No. WW2302.

Public Hearing

15. Public Hearing for Resolution No. 5899 Approving the Fiscal Year 2025-2026 Annual Assessment for the City of Chandler, Arizona, Downtown Chandler Enhanced Municipal Services District
    1. Open Public Hearing
    2. Staff Presentation
    3. Council Discussion
    4. Discussion from the Audience
    5. Close Public Hearing

16. Resolution No. 5899, Approving the Fiscal Year 2025-2026 Annual Assessment for the City of Chandler, Arizona, Downtown Chandler Enhanced Municipal Services District
Move City Council pass and adopt Resolution No. 5899 approving the Fiscal Year 2025-2026 Annual Assessment for the City of Chandler, Arizona, Downtown Chandler Enhanced

Municipal Services District, authorizing the Enhanced Municipal Services District (EMSD) Agreement for Fiscal Year 2025-26 between the City of Chandler and the Downtown Chandler Community Partnership, and authorizing the City's voluntary contribution to the EMSD in the amount of $137,530.

Action Agenda

17. Resolution No. 5905, Adopting the Fiscal Year (FY) 2025-26 Tentative Budget and 2026-2035 Tentative Capital Improvement Program (CIP) and Giving Notice of the Dates and Times for Hearing Taxpayers for Final Adoption of the Budget and for Setting the Tax Levies and Tax Rates

    Move that City Council pass and adopt Resolution No. 5905, adopting the FY 2025-26 Tentative Budget and 2026-2035 Tentative CIP and giving notice of the dates and times for hearing taxpayers for final adoption of the budget and for setting the tax levies and tax rates.

18. Creating Performance Evaluations and Criteria Policy for Direct Hires (City Manager, Clerk, Attorney, Magistrate), as requested by Councilmember Harris

MAYOR HARTKE explained that item 18 is on the action agenda, but first, he read a brief script about Council rules. He clarified that any councilmember could submit an item for the agenda before 5:00 PM on Wednesday, which will be discussed at the Monday study session and possibly voted on at the Thursday meeting. If an ordinance or resolution is needed, city staff will draft it for future consideration. Mayor Hartke asked Councilmember Harris to explain the goal of the item and whether it would align with contractual reviews or when it would be implemented.

COUNCILMEMBER HARRIS explained that this item is separate from contract agreements and is focused on ensuring merit, transparency, and accountability for direct hires. He wanted to establish a written review process to measure merit, ensuring raises are based on performance and qualifications. He also highlighted the importance of transparency, so the public understands how decisions are made. Lastly, he wanted to maintain accountability year after year, as the staff does great work. The goal was to provide a tool for Council to evaluate performance and make informed decisions about raises.

MAYOR HARTKE asked if the mention of raises was intended to be addressed during the upcoming contract review.

COUNCILMEMBER HARRIS said he wanted a straightforward, written process for evaluating the four direct hires. He emphasized the importance of having all councilmembers agree on how the evaluations are conducted, as well as ensuring that both the public and staff understand the basis for the evaluations.

MAYOR HARTKE said that staff would fill out the forms before the contract, Council would review them, and they'd be used in the evaluation.

COUNCILMEMBER HARRIS said the process should be reciprocal. Staff would fill something out to show how they're meeting expectations, and Council would do the same to help make decisions and keep everyone on the same page.

COUNCILMEMBER ORLANDO thanked Councilmember Harris for bringing this up. He noted that Council used to conduct written reviews for the four direct hires, but this practice had ceased. He stated that the International Contract Management Association recommends written reviews and that he's open to exploring how to implement this. He mentioned it's common in other industries and the Council's policies. He's okay with moving forward and exploring different options.

COUNCILMEMBER POSTON asked for clarification on whether we are discussing the International City Managers Association.

COUNCILMEMBER ORLANDO said whatever guidelines the city follows.

COUNCILMEMBER POSTON stated that she has no issue with this. She believes it is standard operating procedure to review city staff, including executive staff, and that they should be held to the same standards as all other employees. She added that this is common practice in the corporate world and sees no issue with applying it in government as well.

COUNCILMEMBER ORLANDO asked if there are any ideas to present on Thursday, as Council will be voting on this.

MAYOR HARTKE clarified that on Thursday, Council will vote on whether to move forward with the decision. He clarified that staff won't present a final product on Thursday. Instead, the vote is to determine if Council wants to proceed, after which they will direct staff to create something to bring back.

Informational

19. Contracts and Agreements Administratively Approved, Month of April 2025

KIM MOYERS, Cultural Development Director, presented on the community garden at 190 S. Dakota Street, located at the northwest corner of Dakota Street and Chicago Street. The city purchased the property in 2008 and leased it to Harvest for Humanities for 10 years to be used as a community garden. The garden has grown produce for AZCEND, partnered with schools, and allowed community members to grow fruits and vegetables. Since then, Cultural Development and Neighborhood Resources have worked together to revitalize the garden. They researched successful gardens in the metro area and engaged the Pueblo Viejo neighborhood at the first Cesar Chavez event. Various ideas were shared, including new garden beds, lighting, reading

areas, and programming. In December, the City Council approved Resolution No. 5855 to reallocate CDBG funds for the garden's design and construction. The design completed by J2 Design, is expected to finish in early fall. The city will continue engaging the neighborhood during the design process and is developing the garden's operational structure, including safety, garden use, partnerships, and neighborhood programming.

COUNCILMEMBER POSTON said the community garden would be a valuable asset. She recognized the challenges of maintaining gardens but was happy to hear that successful programs are being studied. She asked if the garden would have individual plots for residents or be shared, and how it would work.

MS. MOYERS said they are still working through the details, but the garden beds will be available for neighborhood residents to use. There has been strong interest from people in the downtown area. They also plan to activate the garden in different ways, including discussions with libraries about classes and with neighborhood resources about programs teaching healthy food options. The goal is to bring strong programming to the garden through teamwork.

COUNCILMEMBER POSTON said food is foundational. She appreciated that the garden would give people the chance to grow their own food and hopes it will help kids develop a better view of vegetables. She praised the holistic approach being taken.

COUNCILMEMBER ENCINAS asked what successes other communities with gardens have had that could help make this garden successful.

MS. MOYERS said they visited a successful garden in Fountain Hills, where a dedicated person helps with gardening and teaches how to use the space. The success is also due to active programming, a safe environment, and a strong neighborhood feel. These are the goals for the Chandler garden as well.

MAYOR HARTKE thanked Councilmember Encinas for organizing a work project at the community garden on Cesar Chavez Day last year, where they helped clean and rehabilitate the space. He appreciated the effort in making it happen.

COUNCILMEMBER ENCINAS directed the credit to Neighborhood Resources.

Adjourn

The meeting was adjourned at 6:39 p.m.

ATTEST: _____ _____

City Clerk Mayor

Approval Date of Minutes: June 12, 2025

Certification

I hereby certify that the foregoing minutes are a true and correct copy of the minutes of the Study Session of the City Council of Chandler, Arizona, held on the 19th day of May 2025. I further certify that the meeting was duly called and held and that a quorum was present.

DATED this _____ day of June, 2025.

_____
City Clerk

ITEM 3

CHANDLER arizona
Community of Innovation

City Council Memorandum City Clerk's Office Memo No. N/A

Date: June 12, 2025
To: Vice Mayor and City Council
From: Mayor Kevin Hartke
Subject: Boards and Commissions Member Appointments

Proposed Motion:

Move City Council approve the Board and Commission appointments as recommended.

City Charter Amendment Resident Advisory Committee

Rene Lopez (Chair)
Pastor Brad Davis
Heather Anguiano
Ursula Gordwin
Sherida McMullan
Lisa Askey
Jim Jurnak
Jennifer Pawlik
Terry Locke

CHANDLER arizona
Community of Innovation

City Council Memorandum City Manager's Office Memo No.

Date: June 12, 2025
To: Mayor and Council
Thru: Joshua H. Wright, City Manager
Dawn Lang, Deputy City Manager, CFO
From: Steven Turner, Sustainability & Performance Officer
Subject: Resolution No. 5917, Master Energy Services Agreement between Ameresco, Inc., and the City of Chandler for New Solar Installations

Proposed Motion:

Move City Council pass and adopt Resolution No. 5917, authorizing the Master Energy Services Agreement between Ameresco, Inc., and the City of Chandler, for New Solar Installations at City Facilities, in an amount not to exceed $34,028,753; authorizing the City Manager or designee to execute work orders for each solar site; and approving a contingency transfer from General Fund, Non-Departmental, Contingency Account, to the General Capital Projects Fund, Sustainability Programs Project, in the amount of $18,953,753.

Background:

In 2023, the Chandler City Council added Sustainability & Technology as a focus area in its Strategic Framework. This decision underscored the city's commitment to advancing smart energy solutions aimed at reducing service costs and enhancing environmental resilience. The first step to accomplishing this goal was to conduct a solar feasibility study. On March 7, 2024, the City Council Sustainability and Technology Subcommittee convened to deliberate the outcomes of the solar feasibility study. Various financing options were discussed for adding solar at various facilities, with emphasis placed on utilizing one-time revenue to generate ongoing savings. The Subcommittee directed staff to propose the $10 million down payment option, but if possible, increase the down payment as part of the FY 2024-25 proposed budget. On July 20, 2023, the City Council approved an agreement with Ameresco to complete this study (also known as Milestone One), with a goal of studying the viability of various solar installation

options, including ground-mounted, roof-mounted, and solar-covered parking configurations across 25 municipal facilities and a budget of $15,000,000 was approved in the FY 2024-25 Capital Improvement Plan (CIP).

As part of the study, the following municipal sites were evaluated:
Airport Water Reclamation Facility (AWRF)
Ocotillo Water Reclamation Facility (OWRF)
Pecos Surface Water Treatment Facility
City Hall
Fire Administration Building
Transportation & Development Building
Information Technology Building
Chandler Nature Center
Chandler Heights Substation
Public Safety Training Facility
Parks & Facilities Service Center
McQueen Yard
Sunset Library
Delaware Parking Lot (Note: Not included in recommendations due to the dimensions of the parking lot)
Fire Stations 1-11 (Note: Fire Station 4 was not included in the recommendations because it is scheduled to be rebuilt within five years in the current CIP)

In April 2024, City Council approved an amendment to the agreement with Ameresco to begin Milestone Two. As part of Milestone Two, Ameresco prepared the following:
- Final Engineering Design: Completion of detailed engineering plans and specifications for the selected portfolio of solar installations, achieving 100% development per the scope outlined in Exhibit A of the original agreement.
- Project Portfolio Preparation: Finalization of the selected portfolio for solar installations, ensuring all technical and design requirements are met to move forward with potential construction.

Ameresco determined 23 of the 25 sites evaluated were suitable for solar installations:
Airport Water Reclamation Facility (AWRF)
Ocotillo Water Reclamation Facility (OWRF)
Pecos Surface Water Treatment Facility
City Hall
Fire Administration Building
Information Technology Building
Chandler Nature Center

Chandler Heights Substation
Public Safety Training Facility
Parks & Facilities Service Center
McQueen Yard
Transportation & Development Building
Sunset Library
Fire Stations 1-3 and 5-11

This proposed Master Energy Services Agreement will enter the City of Chandler into a 20-year agreement with Ameresco, Inc., for a comprehensive energy savings initiative, with a total cost not to exceed $34,028,753. Upon completion of all work orders for each solar site, the final guaranteed savings will be established. Current estimates project gross savings of approximately $42.4 million over the 20-year period, with net savings of $22 million after capital recovery, factoring in anticipated utility rate increases and annual degradation of solar panels and related equipment. The solar panels carry a 25-year warranty but are tested to function effectively for up to 35 years, potentially generating additional savings over the extended lifespan. The project is anticipated to reach its break-even point in 15 years. Approximately 70% of the savings will accrue to the utilities funds (60% Wastewater and 10% Water), with the remaining 30% allocated to the General Fund. The savings generated meets the goal of using one-time funds to produce ongoing savings, allowing the city to help minimize future cost increases that affect utility rates.

This agreement utilizes an $8.3 million Energy Investment Tax Credit from the Inflation Reduction Act, enhancing the project's financial benefits.

Discussion:

Please note the Pecos Surface Water Treatment Plant is included in this agreement as one of the facilities where solar infrastructure will be installed. However, as this facility is currently undergoing a redesign, it is anticipated the project scope and potential energy savings at this location may adjust in the future. Any such modifications may be brought to City Council as amendments to this agreement.

Financial Implications:

The funding for this project will come from an $8.3 million Energy Investment Tax Credit (ITC) from the Inflation Reduction Act and General Fund. The current Sustainability Programs budget is $15,075,000. A contingency transfer from General Fund, Non-Departmental, Contingency Account (101.1290.5911), to the General Capital Projects Fund, Non-Departmental Capital Cost Center,

Sustainability Programs Project (401.1291.6211.6GG674) of $18,953,753 will be required to fund the difference. The use of this additional amount was planned in the forecast when preparing the FY 2025-26 budget. The project will be funded up front with the ITC coming in year two to offset what was spent initially. Ongoing energy savings of approximately $1.8M will be recognized annually over the next 20 years. Once work orders for each solar site are completed, guaranteed annual utility savings can be determined.

Attachments

Reso 5917 and Agreement

RESOLUTION NO. 5917

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF CHANDLER, ARIZONA, APPROVING A MASTER ENERGY SERVICES AGREEMENT AND RELATED WORK ORDERS AND DOCUMENTS BETWEEN THE CITY OF CHANDLER AND AMERESCO, INC. FOR THE INSTALLATION OF CERTAIN ENERGY CONSERVATION MEASURES AT VARIOUS FACILITIES OWNED BY THE CITY OF CHANDLER; AND AUTHORIZING EXECUTION OF AGREEMENTS AND DOCUMENTS RELATED TO INSTALLATION OF ENERGY CONSERVATION MEASURES AT VARIOUS CITY OF CHANDLER FACILITIES.

WHEREAS, the City of Chandler ("Chandler") owns certain real property and improvements as further identified in a work order (collectively, the "Facilities") and has determined to have Ameresco, Inc. ("Ameresco") install certain energy conservation measures at the Facilities to reduce energy, water, operating and maintenance costs; and

WHEREAS, Chandler and Ameresco wish to enter a master energy services agreement and individual work orders for the Facilities to describe the terms under which Ameresco will install the energy conservation measures at the Facilities and how Ameresco will be compensated for the work substantially in accordance with the terms and conditions set out in the form of agreement shown in attached Exhibit A and individual work orders and related documents, all of which may be modified as required by program partners.

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Chandler, Arizona, as follows:

Section 1. The City Council of the City of Chandler, Arizona does hereby authorize and approve the master energy services agreement substantially in accordance with the terms and conditions set out in the form of agreement shown in attached Exhibit A and authorize and approve individual work orders and related documents for the Facilities in an amount not to exceed $34,028,753, all of which may be modified as required by program partners upon approval of the Chandler City Attorney.

Section 2. The Mayor of the City of Chandler, Arizona, is hereby authorized to execute the master energy services agreement and the City Manager or City Manager's designee is authorized to execute individual work orders and all other documents related to the installation of energy conservation measures at various City of Chandler Facilities, all upon approval as to form by the Chandler City Attorney.

PASSED AND ADOPTED by the City Council of the City of Chandler, Arizona, this _____ day of _____, 2025.

ATTEST:

_____ _____

CITY CLERK MAYOR

CERTIFICATION

I HEREBY CERTIFY that the above and foregoing Resolution No. 5917 was duly passed and adopted by the City Council of the City of Chandler, Arizona, at a regular meeting held on the ____ day of _____, 2025 and that a quorum was present thereat.

_____
CITY CLERK

APPROVED AS TO FORM:

_____
CITY ATTORNEY

EXHIBIT “A”

Master Energy Services Agreement

between

Ameresco, Inc.

and

City of Chandler

_____, 2025

Appendices

Appendix A	Definitions and Interpretations
Appendix B	Supplement to Master Energy Services Agreement
Appendix C	Work Order
Appendix D	Notice to Proceed
Appendix E	Substantial Completion Certificate
Appendix F	Final Delivery and Acceptance Certificate

MASTER ENERGY SERVICES AGREEMENT

This Master Energy Services Agreement (this "MESA") is made as of _____, 2025 ("Effective Date"), by and between Ameresco, Inc., a Delaware corporation (together with its permitted successors and assigns, "Provider"), and the City of Chandler, Arizona, an Arizona municipal corporation (together with its permitted successors and assigns, "Customer"). Provider and Customer are hereinafter sometimes referred to individually as "Party" and collectively as "Parties".

RECITALS

A. The Customer owns certain properties and the improvements thereon, as further identified in a Work Order (each, a "Facility" and collectively, the "Facilities") and has determined to have the Provider install certain energy conservation measures (each an "ECM" and collectively, the "ECMs") at the Facilities to reduce energy, water, operating and maintenance costs.

B. The Parties are entering into this MESA to describe the terms under which Provider will install such ECMs at the Facilities and how Provider will be compensated for such work as set forth in the MESA.

C. The Parties' "Agreement" includes this MESA and the definitions that are attached hereto or included herewith as Appendix A and each other supplement, exhibit, appendix and other attachment hereto, each of which is incorporated by this reference.

AGREEMENT

SECTION 1 Scope of Work by Provider

1.1 Authorization and Summary of Scope of Work and Terms.

(a) Customer authorizes Provider to commence implementation of the ECMs described below on the terms as further set forth in the Agreement and the applicable Work Order. The description of the affected Facilities and ECMs, as well as the Implementation Period, Performance Period, Operation and Maintenance Services, and Measurement & Verification Services with respect to such Facilities and ECMs shall be as set forth in the applicable Work Order.

1.2 Modifications in Scope of ECMs. The scope of any of the Work Orders may be changed only by written agreement of the Parties (and, where required, any financier) evidenced by execution of a written modification agreement.

1.3 Disposal. Provider, at its cost, and as applicable to the ECMs under the Work Order, shall (i) be responsible for disposal of all non-hazardous equipment and materials which are rendered useless and removed as a result of the installation of the ECMs and (ii) cause all lamps which are classified as hazardous wastes by the rules and regulations of the U.S. Environmental Protection Agency (40 CFR Parts 260 through 279) and PCB-contaminated ballasts, if any, which have been rendered useless and removed as a result of the installation of the ECMs to be transported and disposed of. Provider will notify Customer of any other existing PCB-contaminated ballasts, lamps and any other Hazardous Materials of which Provider becomes

aware in the course of performing the ECMs under the Work Order. Any such other existing PCB-contaminated ballasts, lamps and any other Hazardous Materials (except to the extent the same are or become Provider Hazardous Substances, as hereinafter defined), shall remain the sole responsibility of Customer and Provider shall assume no liability whatsoever in connection with their removal, transportation and disposal.

1.4 Asbestos and Lead Paint. The Scope of Services is predicated on the viability of the ECMs without the Provider encountering or disturbing asbestos or lead paint or being required to perform any abatement or provide any notice or take any other action with respect to asbestos or lead paint. Unless expressly included in the Scope of Services or to the extent any asbestos or lead paint is or becomes a Provider Hazardous Substance, under no circumstances shall Provider be required to handle asbestos or lead paint. Customer hereby represents and warrants to Provider that, to the best of Customer's knowledge and belief, there is no asbestos or lead paint in any area wherein Provider will be performing Provider's services hereunder. If Provider: (A) encounters any friable or non-friable asbestos which is in the immediate vicinity of Provider's work, (B) determines that Provider's work will result in the disturbance of asbestos material, (C) encounters any paint in any area where Provider are to perform Provider's work, which work will involve disturbing paint and Provider reasonably believes that such paint may be lead paint or such work will involve disturbing paint which is in a building constructed prior to 1978, or (D) determines that the presence of asbestos material or lead paint will impede Provider's work, the Parties shall proceed as set forth in Section 12 hereof. If Provider cannot determine whether any particular material does or does not contain asbestos or lead paint, Customer, upon Provider's written request, shall, at Customer's cost, promptly perform tests or cause tests to be performed in order to determine whether or not such material contains asbestos or lead paint and/or whether there are unacceptable levels of airborne particulate material containing asbestos or lead and provide such test reports to Provider. If such test reports demonstrate the presence of asbestos or lead paint or Provider reasonably believes that performing Provider's services under this Agreement is likely to cause the disturbance of asbestos or lead paint in such a manner as to require Provider to provide any notification or take any actions pursuant to any federal, state or local laws, rules, regulations or guidelines and Provider notifies the Customer of the same, Customer will, in either case, at its cost, proceed as set forth in Section 12 hereof.

SECTION 2 Provider Responsibilities

2.1 Commencement and Performance of Installation Work. Pursuant to the schedule and conditions set forth herein and in the Work Order, upon Provider's receipt of (i) the Notice to Proceed and (ii) evidence of immediately available funds sufficient for the payment of the Implementation Cost,, Provider shall (a) furnish all labor, materials and equipment and (b) perform (or cause to be performed) all work required for the completion of the installation of the ECMs and related Equipment.

2.2 Legal Compliance; Permits. Provider shall, at its expense, comply with all applicable Laws, and Provider shall obtain and comply with all applicable licenses and permits required by applicable Laws, Governmental Authorities and utility companies in connection with the performance of each of its installation, implementation, Performance Period Services and other obligations and undertakings under the Agreement. Customer shall cooperate with Provider in obtaining any such license or permit, including by making application for such license or permit

in Customer's name where required by applicable Laws, Governmental Authorities and/or utility companies. .

2.3 Repair of Damages, Emergency Repair.

(a) Provider shall be responsible for any damage or injury caused by it, its agents, employees, representatives, or contractors to the Facilities, or to any Persons or property (whether during the course of performing diligence, inspection, construction, installation, commissioning, testing, operation, repairs, maintenance or management and/or other work or activities pursuant to the Agreement or otherwise). Provider shall have the right to inspect and Provider shall have the obligation to repair (or arrange for contractors to repair) such damage and shall coordinate such repair with Customer (including access to the Facilities). Provider shall promptly commence to repair such damage. If Provider fails to repair such damage within thirty (30) days (or within any extended period which may be necessary if reasonably Provider determines that more than thirty (30) days is required to fully repair the damage) from its receipt of notice of such damage, Customer may promptly commence repair of such damage and Provider shall reimburse Customer for all actual, out of pocket costs and expenses incurred to repair such damage within thirty (30) days after receiving notice from Customer of the actual, out of pocket costs and expenses incurred to repair such damage.

(b) If Provider fails to make any payment owed by it pursuant to this Section 2.3 within thirty (30) days after receiving notice of demand by Customer as provided above, such failure shall constitute a Provider Event of Default pursuant to Section 11.3(d) without any additional cure period, without the need of further notice or demand by Customer.

2.4 Manufacturer Warranties. Manufacturers' warranties with respect to any Equipment for ECMs shall remain with Provider during the Implementation Period and until Substantial Completion applicable to such Equipment. Upon Substantial Completion of the applicable ECM, all manufacturers' warranties with respect to Equipment for such ECM shall be assigned by Provider to Customer, provided that during the Warranty Period, Provider shall continue to have the economic benefit of the warranties applicable to such Equipment.

2.5 Certain Warranties and Limitations.

(a) Provider warrants that Provider shall perform (or cause to be performed) each of its obligations under the Agreement diligently, promptly, in a good and workmanlike manner, in compliance with all applicable Laws and with professional competence in accordance with standard industry practices. EXCEPT AS EXPRESSLY PROVIDED OR CONTEMPLATED IN THIS MESA (INCLUDING THIS SECTION 2.5), PROVIDER MAKES NO WARRANTIES OR REPRESENTATIONS OF ANY KIND, WHETHER STATUTORY, WRITTEN, ORAL OR IMPLIED, INCLUDING WITHOUT LIMITATION, WARRANTIES AS TO THE CONDITION OR FITNESS FOR USE OR PARTICULAR PURPOSE AND MERCHANTABILITY, REGARDING THE SERVICES OR THE EQUIPMENT. Any manufacturers' warranties as described in Section 2.44 shall be the sole warranties with respect to manufacturing defects in any Equipment. The term of Provider's warranty with respect to labor and workmanship for the installation of any ECMs shall be limited to claims arising from normal usage and shall be for a period of two (2) years ("Warranty Period") from the date of Substantial Completion with respect

to the applicable ECM as provided in Section 4.1(b). This section does not apply in any way to the Savings Guarantee.

(b) Each Party shall provide written notice to the other Party reasonably promptly upon becoming aware of any breach of any manufacturer's warranties or any of the foregoing other warranties. If Customer provides such a notice to Provider during the Warranty Period, Provider, at its own expense, shall replace, repair or re-perform any work that does not comply with any of the foregoing warranties by Provider. During the period that any manufacturers' warranties with respect to the applicable Equipment remain with Provider, Provider will use commercially reasonable efforts to cause the manufacturer of such Equipment to perform all obligations of the manufacturer under each applicable warranty.

2.6 No Liens on Facilities. Provider shall ensure that no other liens, security interests or other encumbrances are filed against the site of the Facilities, the Facilities, Customer's interests therein or any other property or asset of Customer. If any such lien, security interest or other encumbrance is filed against the site of the Facilities, the Facilities, Customer's interests therein or any other property or asset of Customer, Provider shall immediately notify Customer in writing upon obtaining knowledge thereof, shall promptly cause such lien, security interest or other encumbrance to be bonded over or discharged and released of record, at Provider's election, without cost to Customer, and shall indemnify Customer against all costs and expenses (including reasonable attorneys' fees and court costs at trial and on appeal) incurred in discharging and releasing such lien, security interest or other encumbrance.

SECTION 3 Savings Calculations

3.1 Guaranteed Savings. The "Guaranteed Savings" to Customer are set forth in the applicable Work Order. In general, and as applicable to the ECMs in the Work Order, Guaranteed Savings shall consist of (a) aggregated energy cost reductions resulting, among other things, from energy use and demand reduction, the generation of electricity and water savings resulting from the ECMs, and (b) stipulated operating, maintenance and repair and replacement cost reductions (measured either in total or by unit of output), including productivity improvements and labor, materials, contracted services cost and capital expenditure reductions, resulting from the ECMs in accordance with Arizona Revised Statutes ("A.R.S.") sec. 34-105. If part or all of any ECMs are abandoned or terminated by Customer pursuant to the provisions of the Agreement, the Parties agree that the Guaranteed Savings after such date of abandonment or termination shall be reasonably adjusted to reflect the effect of such abandonment or termination. Termination of this Agreement for any reason shall terminate Provider's obligations with respect to the Guaranteed Savings, including any obligation to perform Performance Period Services and to make payments pursuant to the Savings Reconciliation as provided in Section 3.3 below.

3.2 Verified Savings. The initial and ongoing measurement and verification of the actual savings realized by Customer as a result of each ECM shall be performed under, and governed by, the methods, formulas, stipulated values (including but not limited to utility rates, operating hours and escalation rates), and procedures set forth in the M&V Plan. Such actual savings, as measured and verified in accordance with the M&V Plan, are referred to as the "Verified Savings."

3.3 Savings Reconciliation.

(a) Provider shall prepare and furnish to Customer a savings reconciliation ("Savings Reconciliation") no later than 120 days after the anniversary of the Final Commencement Date (such first period ending on the anniversary of the Final Commencement Date and each such successive period from one anniversary to the next being referred to as a "Measurement Period"), provided that Customer has made available to Provider any data specified in Section 7.1(a) that is necessary to calculate the Savings Reconciliation (subject to any applicable limitations set forth in Section 7.1(b)). Each Savings Reconciliation shall include a calculation of the Verified Savings for the ECMs for the applicable Measurement Period. Any dispute between the Parties with respect to a Savings Reconciliation for any period shall be resolved pursuant to the dispute resolution procedures in Section 20.

(b) If the Verified Savings realized by Customer for the applicable Measurement Period, as detailed in the Savings Reconciliation, exceed the Guaranteed Savings specified in the applicable Work Order for the applicable Measurement Period, Customer shall retain the benefit of such excess savings and such excess savings shall not reduce the obligation of Provider with respect to Guaranteed Savings in any future or prior period. If such Verified Savings are less than the Guaranteed Savings specified in the applicable Work Order for the applicable Measurement Period, then Provider shall pay to Customer the amount by which the Guaranteed Savings exceed such Verified Savings (the "Shortfall Payment") within thirty (30) days after the date of the Savings Reconciliation. In addition to making such payment, Provider shall have the right to remedy the underlying cause of the deficiency creating such reduction in Verified Savings at Provider's sole cost and expense. Provider shall receive the benefit of any savings which accrue with respect to any ECM during the Implementation Period under a Work Order, and may use such Implementation Period savings to offset any shortfall in Guaranteed Savings under such Work Order.

(c) The terms and conditions set forth in this Section 3.3 are sometimes herein referred to as the "Savings Guarantee".

SECTION 4 Completion and Acceptance of ECMs

4.1 Completion; Acceptance of ECMs; Commencement Date. The Parties shall cooperate, in accordance with the following procedure, to confirm the full installation, implementation and completion of the ECMs and related Equipment under this MESA.

(a) Upon Substantial Completion of the installation of an ECM (or portion thereof, as applicable), Provider will deliver to Customer a substantial completion certificate in the form of Appendix E (the "Substantial Completion Certificate"). If Provider's work and installation of the ECM satisfies the terms and conditions of this Agreement and Customer accepts the ECM installation, Customer shall complete, execute and deliver to Provider each such Substantial Completion Certificate within five (5) business days after receipt of each Substantial Completion Certificate. If Provider's work and installation of all ECMs under a Work Order satisfy the terms and conditions of this Agreement and Customer accepts all ECM installations as provided in this Agreement, Customer will complete, sign and deliver a final acceptance certificate in the form of Appendix F (the "Final Delivery and Acceptance Certificate") within ten (10) business days after

receipt of such Final Delivery and Acceptance Certificate. As used in the Agreement, the term "Substantial Completion" for a non-solar related ECM shall mean that the subject ECM has been installed by Provider and is operating: (i) for its intended purpose ; (ii) complies with the standards, requirements, terms, and conditions set forth in the Agreement; and (iii) Customer is deriving beneficial use thereof. "Substantial Completion" with respect to solar related ECMs shall mean that the ECM is capable of producing electricity, is ready for regular, daily operation, has approval to interconnect to the local electric distribution company's system, and Permission to Operate from the local electric distribution company, and has all relevant governmental approvals.

(b) Ownership and title to each ECM or portion thereof, as applicable, shall automatically pass to Customer upon Provider's receipt of both (i) the executed Substantial Completion Certificate delivered pursuant to Section 4.1(a) for such ECM or portion thereof, and (ii) the indefeasible payment in full of all of Customer's payment obligations to Provider pursuant to such Substantial Completion Certificate for such installed ECM or portion thereof. Prior to satisfaction of the conditions set forth in (i) and (ii) in the previous sentence with respect to an ECM or portion thereof, title to each ECM and Equipment and other personal property installed or incorporated into the ECMs shall at all times during the Term remain in the name of Provider, and as such Provider shall be fully responsible and liable to undertake all obligations and responsibilities as owner including, but not limited to, carry appropriate insurance or other security to cover and indemnify Customer for all risks and damages to property, persons, or all ECMs, or that arise out of this Agreement, or that result from the ECMs. If, notwithstanding the intent of the Parties, Customer is deemed to hold title to the ECMs, and as security for the payment in full of the Contract Cost, Customer hereby assigns, transfers and grants to Provider a security interest in all of the ECMs. Customer hereby authorizes Provider to file, from time to time, Uniform Commercial Code financing statements in such jurisdictions as may be necessary to perfect and maintain its security interest in the ECMs. If requested by Provider, Customer agrees to execute and deliver all further instruments and documents and take all further action that may be necessary in order to create, perfect and protect Provider's security interest in the ECMs. Solely in the instance to perfect Provider's security interest in the ECMs, Customer hereby appoints Provider as Customer's attorney-in-fact with full power to sign such instruments and documents. Any provision in this Section to the contrary notwithstanding, ownership and title to an ECM shall automatically pass to Customer and Provider's security interest in such ECM shall be released and terminated, in each case without further action on either Party's part, upon Provider's receipt of both (i) the executed Substantial Completion Certificate (as defined in Section 4.1(a)) for such ECM and (ii) the indefeasible payment in full of all of Customer's payment obligations to Provider for such ECM. Provided; however, Provider must issue and file as appropriate any release of lien or ownership interest in the ECM on Provider's receipt of the executed Substantial Completion Certificate.

SECTION 5 Payment

5.1 **Implementation Period Payments**. With respect to the ECMs, for each month during the Implementation Period of the Project following Customer's issuance to Provider of a notice to proceed with respect to such ECM as provided in section 4.1(a) (each being referred to herein as a "Notice to Proceed"), Customer shall make monthly progress payments to Provider based upon Customer's reasonable determination of the percentage of the Project construction and equipment procurement completed at the end of each month. Provider shall be paid the same

percentage of the Implementation Cost as such percentage of completion. Following the end of each month, during the Implementation Period of the Project, Provider will provide to Customer an invoice together with a list in sufficient detail to reasonably identify construction and equipment procurement during such month. Within thirty (30) days after receipt of such invoice, Customer shall pay or cause to be paid to Provider the amount due under such invoice for ECM work and installation that Customer accepts in its sole but reasonable discretion.

5.2 Performance Period Expenses. During the Performance Period, Customer shall pay to Provider the defined Performance Period Expenses as set forth in each Work Order. Customer shall pay such amounts within thirty (30) days after Customer's receipt of an invoice thereof from Provider (the "Due Date") for ECM work and installation that Customer accepts in its sole but reasonable discretion.

5.3 Late Payment. Amounts not paid when due and payable hereunder shall be payable with interest in accordance with Ariz. Rev. Stat. §34-221, as applicable.

5.4 Tariffs. Costs that are the direct result of tariffs levied on equipment or materials by any Governmental Authority, including any executive order of the President of the United States, shall be treated as "Change of Law Costs" as defined in this Agreement. To recover Change of Law Costs, Provider must provide written notice to Customer as required under this Agreement that shows the original cost of the item as set forth in the applicable Work Order on the date of submission of such Work Order to Customer for execution and the new cost of the item after the Change of Law Cost was incurred. Provider must bear Change of Law Costs up to and including 10% of the original agreed to cost of the item as set forth in the applicable Work Order on such date of submission to Customer. Customer must bear the Change of Law Costs 11% or greater than such original agreed to cost of the item. Customer acknowledges and agrees that undue delay by Customer in final approval and execution of a Work Order after submission by Provider may result in Change of Law Costs being imposed on a Work Order between the date of submission and the Customer's final approval.

SECTION 6 Term

The term of the Agreement shall commence upon the Effective Date and, unless earlier terminated pursuant to the terms hereof, shall expire with respect to each ECM, upon the expiration or earlier termination of the Performance Period of such ECM, as set forth in the applicable Work Order.

SECTION 7 Customer Responsibilities

6.1 Delivery of Information and Notices.

(a) Customer shall comply with any reasonable requests by Provider for information reasonably related to the Facilities and any applicable ECMs, including any information specified in a Work Order required to perform a Savings Reconciliation, such as utility consumption and utility cost data as well as maintenance records data of Customer.

(b) Customer shall promptly notify Provider in writing if Customer becomes aware of (i) any material malfunction in the operation of the ECMs, or (ii) any material interruption of, or material alterations to, the energy supply to the Facilities.

(c) Customer shall promptly notify Provider in writing if Customer becomes aware that (i) any material portion of the ECMs is lost, damaged, destroyed, stolen, or worn out or (ii) any ECMs are involved in an accident-causing personal injury or property damage. Such notice shall provide a reasonably detailed description of such loss, damage, or accident.

(d) Customer shall promptly notify Provider in writing if Customer becomes aware of any environmental condition, including any Hazardous Substances, at the Facilities.

(e) During the term of this MESA, Customer shall promptly notify Provider prior to making any major renovations to the Facilities that could reasonably be expected to materially affect any ECMs or the energy usage at the Facilities.

6.2 Access and Monitoring.

(a) Subject to the terms, policies, conditions and limitations referenced or specified in Section 2.3 or in Section 2.6 above or in Section 6.2(b) and Customer's background screening and badging requirements listed in Appendix B, Customer grants to Provider for its personnel, or personnel of Provider's subcontractors or suppliers, and any representative of Customer's utility company reasonable access to the Facilities and to the ECMs during normal business hours and at such other times as Customer may approve upon reasonable request, for the purpose of installing, inspecting, operating, maintaining, repairing, and/or monitoring the ECMs and otherwise performing any Provider obligations under the Agreement. Provider shall coordinate and schedule access with Customer prior to Provider (or any of the other foregoing Persons) entering the Facilities except in situations where there is imminent risk of damage to persons or property (in which case Provider shall notify Customer as soon as possible). Provider shall exercise (and shall cause its agents, employees, contractors, representatives and each of the other aforementioned Persons to exercise) due care any time Provider, its agents, employees, contractors, representatives and/or each of the other aforementioned Persons enters the Facilities.

(b) Customer shall provide, or arrange for the provision of, temporary electricity, water and communications utilities reasonably related to the implementation of the ECMs.

6.3 Operation and Maintenance for Non-Solar ECM's This Section 7.3 applies to Non-Solar ECMs only. Provider will provide operation and maintenance services for Solar ECMs under a separate Operations and Maintenance Agreement. Customer shall, at its expense, repair, operate and maintain the Non-Solar ECMs in good working order during the Term. Following the date of Substantial Completion of each Non-Solar ECM, Customer shall, at its expense, operate, repair and maintain (i) the Equipment and all other components which comprise the Non-Solar ECM and (ii) all other equipment which is attached thereto and/or is integral to the proper functioning of the Non-Solar ECM. The Parties agree that the Savings Guarantee herein with respect to Non-Solar ECMs shall thereafter be subject to Customer performing its maintenance and other obligations as set forth in this MESA and the applicable Work Order. If Customer fails to perform, or fails to properly perform, its obligations with respect to Non-Solar ECMs under this MESA or a Work Order or interferes with, or permits any person to take any action which, in the reasonable opinion of Provider, prevents the achievement by any Non-Solar ECM of the Guaranteed Savings under the Savings Guarantee, then Provider may equitably adjust the Guaranteed Savings as allowed by A.R.S.34-105 during the period wherein savings

were affected to reflect the same. Provider's rights in this section shall not be in limitation of any other rights it possesses under this Agreement.

6.4 Modification of ECMs (Solar and Non-solar).

(a) The Parties shall not (x) modify, alter, move or remove the ECMs (including any measurement and verification system installed as a part thereof) or (y) affix or install or allow to be affixed or installed to any Equipment any accessory, equipment or device if such addition will impair the originally intended function or use of the ECMs without the written consent of the other Party.

(b) If a Party wishes to alter the ECMs in any material respect, the Party shall give written notice to the other Party providing a description and specifications of the proposed alterations and shall give the other Party reasonable opportunity to review the proposed alterations and to inspect the ECMs and Facilities involved. A Party may make such alterations only upon receipt of the prior written consent of the other Party, which consent shall not be unreasonably withheld, delayed or conditioned and shall be provided on an expedited basis in the event of an emergency or hazardous situation unless such emergency or hazardous circumstances do not afford the Party an opportunity to seek such consent in which case the Party may, without such consent, make such alterations as are necessary under the circumstances. All alterations or additions to any Equipment shall be made only in compliance with applicable Laws. If any such alteration or addition, in the reasonable opinion of Provider, prevents the achievement of the Guaranteed Savings under the Savings Guarantee, then Provider may equitably adjust the Guaranteed Savings as allowed by A.R.S. 34-105 to reflect the same. Provider may also make retroactive adjustments where Customer has not provided timely notice and, in such instances, any payments made between the Parties shall be retroactively reconciled to reflect the changed baseline. Provider shall notify Customer 30 days prior to making any such adjustment. If Customer disputes any such adjustment, the Parties shall proceed in accordance with Section 20 hereof.

(c) A Party shall notify the other Party in writing at least thirty (30) days prior to making any change(s) to the Facility that could reasonably be expected to have an effect on any ECMs or the energy usage at the Facility including, without limitation, changes in (i) the hours, days or time of year that the Facility is occupied or operated, (ii) the number of staff, faculty and students at the Facility, (iii) the activities conducted at the Facility and (iv) the equipment, the facilities, or the size of the Facility. The Party shall notify the other Party regarding increases, over time, in numbers and usage of "plug in" devices such as computers and printers. If Provider receives such notification or otherwise determines that such a change has occurred, it will make the appropriate revisions to the Guaranteed Savings or take such other action as may be provided for hereunder. Provider may also make retroactive adjustments where Customer has not provided timely notice and, in such instances, any payments made between the Parties shall be retroactively reconciled to reflect the changed baseline. Provider shall notify Customer 30 days prior to making any such adjustment. If Customer disputes any such adjustment, the Parties shall proceed in accordance with Section 20 hereof.

SECTION 7 Ownership and Tax Matters

7.1 **Exempt Tax Status; Tax Liability**. As applicable, Customer shall provide to Provider written documentation of exempt status (if any) for state and/or local sales taxes held by Customer as of the Effective Date. Notwithstanding the foregoing, Provider must pay all sales taxes, use taxes, or other fees and assessments applicable to this Agreement, but may pass these additional costs to Customer for reimbursement.

SECTION 8 Insurance; Casualty and Loss

8.1 Reserved. .

8.2 Without limiting any of its obligations or liabilities under this Agreement, following the applicable Commencement Date, Customer shall, at its expense, provide and maintain at all times during the Term, sufficient insurance against the loss or theft of or damage to the ECMs, the related equipment and all components installed hereunder.

8.3 Following the applicable Commencement Date, Customer assumes all risk of loss of or damage to the ECMs from any cause whatsoever except to the extent that such loss or damage was caused by the acts, errors, or omissions of Provider or Provider's agents, representatives, contractors, or employees. Upon the discovery of damage to any item of the equipment installed hereunder or the ECMs, Customer will notify Provider and place the same in good repair . If Customer determines that any item of the ECMs are lost, stolen, confiscated, destroyed or damaged beyond repair, Customer will replace the same with like equipment in good repair in a timely fashion.

8.4 If at any time after the date of the Final Delivery and Acceptance Certificate and after Customer's complete payment to Provider in accordance with Section 5.1, as such amount may be modified from time to time in accordance with this Agreement, any fire, flood, other casualty, or condemnation renders a majority of the Facility incapable of being occupied and renders the ECMs or the equipment installed hereunder inoperable and, in the case of a casualty, the affected portion of such ECMs or equipment is not reconstructed or restored within one hundred twenty (120) days from the date of such casualty, Provider or Customer may terminate this Agreement as provided in this Agreement. Upon such termination, Customer will pay to Provider any amounts, or prorated portions thereof, then due and payable under Section 5. If there is a Casualty Loss to an ECM at any time after the Commencement Date and Customer does not terminate the applicable ECM as provided in the foregoing sentence, then Customer may elect to assume responsibility for the repair and replacement of the ECM to the same specifications as set forth in the applicable Work Order or to assign such responsibility to Provider and shall pay Provider the reasonable cost for the repair and replacement of the ECM. If Customer elects to assume responsibility for the repair and replacement of the ECM, then Provider agrees to commission the repaired or replaced ECM for a reasonable fee consistent with the pricing of Provider's services under this MESA. Customer's obligation to pay the Performance Period Expenses shall continue after a Casualty Loss and the Verified Savings for such ECM during any such period of repair or replacement shall be deemed to be equal to the equivalent periods most recently preceding the Casualty Loss; provided that the Performance Period Expenses, if any, during the period when an ECM is being repaired or replaced shall be reduced by the costs

that are not incurred or can be reasonably avoided by Provider for the Performance Period Services for the affected ECM.

SECTION 9 Limitation of Liability

NOTWITHSTANDING ANYTHING TO THE CONTRARY SET FORTH IN THIS MESA, NO PARTY (NOR ANY OF ITS OFFICERS, DIRECTORS, EMPLOYEES OR REPRESENTATIVES, NOR THE AFFILIATES OF ANY OF THEM) SHALL BE LIABLE TO ANY OTHER PARTY FOR ANY SPECIAL, INDIRECT, PUNITIVE OR CONSEQUENTIAL LOSSES OR DAMAGES CONNECTED WITH OR RESULTING FROM PERFORMANCE OR NON-PERFORMANCE OF THIS AGREEMENT (IRRESPECTIVE OF WHETHER SUCH CLAIM OF LIABILITY IS BASED UPON BREACH OF WARRANTY, STRICT LIABILITY, TORT, CONTRACT, OPERATION OF LAW OR OTHERWISE) OR ANYTHING DONE IN CONNECTION THEREWITH INCLUDING, WITHOUT LIMITATION, CLAIMS IN THE NATURE OF LOST REVENUES, INCOME OR PROFITS (OTHER THAN PAYMENTS EXPRESSLY REQUIRED AND PROPERLY DUE UNDER THIS AGREEMENT), OR INCREASED EXPENSE OF, REDUCTION IN OR LOSS OF POWER GENERATION PRODUCTION OR EQUIPMENT USED THEREFOR.

NOTWITHSTANDING ANYTHING TO THE CONTRARY SET FORTH IN THIS MESA PROVIDER'S TOTAL AGGREGATE LIABILITY FOR ANY AND ALL INJURIES, DAMAGES, CLAIMS, LOSSES, EXPENSES OR CLAIM EXPENSES (INCLUDING ATTORNEY'S FEES) ARISING OUT OF THIS MESA OR ANY WORK ORDER FROM ALL CAUSES OR ANY CAUSES, REGARDLESS OF THE LEGAL THEORY UNDER WHICH LIABILITY IS IMPOSED, SHALL IN ALL CASES BE LIMITED TO THE AMOUNT OF TEN MILLION DOLLARS ($10,000,000.00) RESPECTIVELY, EITHER (I) WITH RESPECT TO LIABILITY UNDER THE MESA THAT IS NOT DIRECTLY RELATED TO PROVIDER'S PERFORMANCE UNDER A WORK ORDER, OR (II) ON A PER WORK ORDER BASIS WITH RESPECT TO PROVIDER'S PERFORMANCE UNDER A PARTICULAR WORK ORDER. SUCH CAUSES SHALL INCLUDE, BUT NOT BE LIMITED TO, PROVIDER'S NEGLIGENCE, ERRORS, OMISSIONS, STRICT LIABILITY, BREACH OF CONTRACT, WARRANTY, BREACH OF WARRANTY OR ANY INDEMNIFIED CLAIMS.

SECTION 10 Indemnification

Reserved.

SECTION 11 Hazardous Substances

11.1 **Customer Hazardous Substances**. Provider shall not be responsible for liabilities, damages, costs, or expenses related to: (i) pre-existing Hazardous Substances located at a Facility that were not released by an act, error, or omission by Provider or Provider's employees, agents, contractors, subcontractors, licensees, or invitees; or (ii) Hazardous Substances located at a Facility released by an act, error, or omission by Customer or Customer's agents, employees, contractors, subcontractors, licensees, or invitees (items (i) and (ii) together ("Customer Hazardous Substances"). Customer shall indemnify and hold harmless Provider from liability, damages, costs or expenses (including reasonable attorneys' fees) arising out of or related to the Customer Hazardous Substances and any remediation thereof; provided, however, that Customer

shall not be required to reimburse or indemnify Provider for any loss or claim to the extent such loss or claim is due to a violation of Law, act, error, or omission or breach of this Agreement or any Work Order by Provider or any employee, agent, contractor, subcontractor, licensee or invitee of Provider. Upon encountering any materials that Provider suspects may constitute Hazardous Substances, Provider shall promptly notify Customer and may suspend work in the affected area as reasonably necessary until such materials are properly remediated; provided, however, that Provider shall not be responsible for liabilities, damages, costs, or expenses related to Customer Hazardous Substances or the remediation thereof.

11.2 Provider Hazardous Substances. Customer shall not be responsible for liabilities, damages, costs, or expenses related to: (i) pre-existing Hazardous Substances that are released from a Facility, transported by, or not properly disposed by an act, error, or omission by Provider or Provider's employees, agents, contractors, subcontractors, licensees, or invitees; or (ii) Hazardous Substances located at a Facility or released by or improperly disposed by or resulting from or arising out of an act, error, or omission by Provider or Provider's agents, employees, contractors, subcontractors, licensees, or invitees (items (i) and (ii) together ("Provider Hazardous Substances"). Provider shall indemnify, defend, and hold harmless Customer from liability, damages, costs or expenses (including reasonable attorneys' fees) arising out of or related to Provider Hazardous Substances and any remediation thereof; provided, however, that Provider shall not be required to reimburse or indemnify Customer for any loss or claim to the extent such loss or claim is due to a violation of Law, negligence, fraud, willful misconduct, or breach of this Agreement or any Work Order by Customer or any employee, agent, contractor (other than Provider), subcontractor, licensee or invitee of Customer. Upon encountering any materials that Provider suspects may constitute Hazardous Substances, Provider shall promptly notify Customer and may suspend work in the affected area as reasonably necessary until such materials are properly remediated; provided, however, that Customer shall not be responsible for liabilities, damages, costs, or expenses related to Provider Hazardous Substances or the remediation thereof.

11.3 ECM Installation at Facility. If Customer Hazardous Substances or Provider Hazardous Substances (collectively "Hazardous Substances") are encountered at a Facility and such Hazardous Substances prevent or interfere with the installation of an ECM or performance of the Performance Period Services with respect to an ECM, as applicable, the Parties will meet and discuss next steps for the installation of the ECM at the subject Facility and amend the applicable Work Order accordingly.

SECTION 13 Termination for Cause.

The Parties may terminate this Agreement for cause under the following terms and conditions. If a court determines that a Party improperly invoked this Section, any improper termination for cause must be treated as a termination for convenience as set forth in this Agreement.

13.1 Customer Events of Default. The occurrence of any one or more of the following events shall constitute an event of default by Customer under the Parties' Agreement (each, a "Customer Event of Default"):

(a) A receiver, custodian, liquidator, or trustee of Customer, or of the property of Customer, is appointed by court order and such order is consented to by Customer or remains in effect for more than ninety (90) days after the commencement of such action; an order for relief under any bankruptcy Law is entered with respect to Customer or Customer is adjudicated bankrupt or insolvent; or a petition is filed against Customer under any bankruptcy, reorganization, arrangement, insolvency, readjustment of debt, dissolution, or liquidation Law of any jurisdiction, whether now or hereafter in effect, and is not dismissed or stayed within ninety (90) days after such filing.

(b) Customer files a petition in voluntary bankruptcy or seeking relief under any provision of any bankruptcy, reorganization, arrangement, insolvency, readjustment of debt, dissolution, or liquidation Law of any jurisdiction, whether now or hereafter in effect, or Customer consents to the filing of or any order to relief under any petition against it under any such Law.

(c) Customer makes an assignment for the benefit of creditors.

(d) Customer fails to pay any payments it is required to pay under the Parties' Agreement within sixty (60) days after Customer receives written notice of such failure. Provided, however, that Customer shall not be in default under this clause (d) insofar as it is disputing in good faith any such amount due and payable and has withheld payment only with respect to such reasonably disputed amount or as permitted by the Parties' Agreement.

(e) Customer fails to maintain in any material respect the insurance it is required to maintain under the Parties' Agreement.

(f) Customer makes or provides to Provider any financial statement, representation or warranty furnished or made in connection with the Parties' Agreement that is or shall be untrue or misleading in any material respect as of the date made.

(g) Customer fails in any material respect to observe or perform any obligation or agreement to be observed or performed by it under the Parties' Agreement (other than the matters addressed in the prior clauses of this Section 13.1(g) and such failure shall continue for thirty (30) days after Customer's receipt of written notice thereof from Provider (unless another provision of the Parties' Agreement provides for a different specific cure or performance period (which specific provision shall be controlling)); provided that if (i) the Customer Event of Default cannot be completely cured within such 30-day period, (ii) Customer has commenced action to cure such Customer Event of Default within such 30-day period, and (iii) Customer is diligently pursuing to cure such Customer Event of Default, then such cure period shall be extended as is reasonably necessary to cure such Customer Event of Default so long as it diligently prosecutes the same to completion.

13.2 Remedies for Customer Event of Default. Upon the occurrence and continuation of a Customer Event of Default, Provider may do any one or more of the following in addition to any other remedies otherwise available under applicable Law, in equity or the Parties' Agreement:

(a) Recover compensation for actual damages, including costs and expenses incurred in connection with the enforcement or preservation of its rights and remedies (including reasonable attorney's fees);

(b) Repossess and sell or otherwise dispose of in a commercially reasonable manner any property, including Equipment, in which Provider has a security interest or ownership interest under the Parties' Agreement and, in the sole discretion of Provider, dispose of the property by sale, lease or otherwise;

(c) Without duplication of any other payment terminations, reductions or offsets made by Provider, withhold from any amount due and payable by Provider under the applicable Work Order an amount that is finally determined pursuant to Section 20 as Provider's actual damages in connection with such Customer Event of Default;

(d) Suspend or terminate any executory performance by Provider of Implementation Period services or Performance Period Services under the Parties' Agreement; and

(e) Recover the amounts due to Provider due under the Parties' Agreement in accordance with its terms.

To the fullest extent permitted by applicable Law, no remedy conferred upon Provider under this Section 13.2 is intended to be exclusive of any other remedy, and each remedy shall be cumulative of all other remedies existing by contract, at Law, in equity, by statute or otherwise.

13.3 Provider Events of Default. The occurrence of any one or more of the following events shall constitute an event of default by Provider under the Parties' Agreement (each, a "Provider Event of Default"):

(a) A receiver, custodian, liquidator, or trustee of Provider, or of the property of Provider, is appointed by court order and such order is consented to by Provider or remains in effect for more than ninety (90) days after the commencement of such action; an order for relief under any bankruptcy Law is entered with respect to Provider or Provider is adjudicated bankrupt or insolvent; or a petition is filed against Provider under any bankruptcy, reorganization, arrangement, insolvency, readjustment of debt, dissolution, or liquidation Law of any jurisdiction, whether now or hereafter in effect, and is not dismissed or stayed within ninety (90) days after such filing.

(b) Provider files a petition in voluntary bankruptcy or seeking relief under any provision of any bankruptcy, reorganization, arrangement, insolvency, readjustment of debt, dissolution, or liquidation Law of any jurisdiction, whether now or hereafter in effect, or Provider consents to the filing of or any order to relief under any petition against it under any such Law.

(c) Provider makes an assignment for the benefit of creditors.

(d) Provider fails to pay any amount due within thirty (30) days after Provider receives written notice of such failure; provided, however, that Provider shall not be in default under this clause (d) insofar as it is disputing in good faith any such amount due and payable and has withheld payment only with respect to such reasonably disputed amount.

(e) Provider fails to maintain in any material respect the insurance it is required to maintain under the Parties' Agreement.

(f) Provider makes or provides to Customer any financial statement, representation or warranty furnished or made in connection with the Parties' Agreement that is or shall be untrue or misleading in any material respect as of the date made.

(g) Provider fails in any material respect to observe or perform any obligation or agreement to be observed or performed by it under the Parties' Agreement (other than the matters addressed in the prior clauses of this Section 13.3(g)) and such failure shall continue for thirty (30) days after Provider's receipt of written notice thereof from Customer (unless another provision of the Parties' Agreement provides for a different specific cure or performance period (which specific provision shall be controlling)); provided that if (i) the Provider Event of Default cannot be completely cured within such 30-day period, (ii) Provider has commenced action to cure such Provider Event of Default within such 30-day period, and (iii) Provider is diligently pursuing to cure such Provider Event of Default, then such cure period shall be extended as is reasonably necessary to cure such Provider Event of Default so long as it diligently prosecutes the same to completion .

13.4 Remedies for Provider Defaults. Upon the occurrence and continuation of a Provider Event of Default, Customer may do any one or more of the following in addition to any other remedies otherwise available under the Parties' Agreement, applicable Law or in equity:

(a) Recover compensation for actual damages, including costs and expenses incurred in connection with the enforcement or preservation of its rights and remedies (including reasonable attorney's fees);

(b) Without duplication of any other payment terminations, reductions or offsets made by Customer, withhold from any amount due and payable by Customer under the applicable Work Order an amount that is finally determined pursuant to Section 20 as Customer's actual damages in connection with such Provider Event of Default;

(c) Suspend or terminate any executory performance by Customer of Implementation Period services or Performance Period Services under the Parties' Agreement; and

(d) Recover the amounts due to Customer due under the Parties' Agreement in accordance with its terms.

To the fullest extent permitted by applicable Law, no remedy conferred upon Customer under this Section 13.4 is intended to be exclusive of any other remedy, and each remedy shall be cumulative of all other remedies existing under the Parties' Agreement, by contract, at Law, in equity, by statute or otherwise.

13.5 Duty to Mitigate. Each Party agrees to undertake reasonable efforts to mitigate any loss or damage it may suffer as a result of a breach or default by the other Party.

SECTION 14 Force Majeure

Reserved.

SECTION 15 Assignment, Binding Effect, Financing Provisions

15.1 Assignment; Binding Effect. Except as provided in this Agreement, neither Party shall have the right to assign or transfer, whether voluntarily or by operation of law, any of its rights, duties or obligations under this Agreement without the prior written consent of the other Party, which consent shall not be unreasonably withheld or delayed.

15.2 Permitted Assignment by Provider. Notwithstanding anything to the contrary herein, Provider may assign all or a portion of its rights and obligations hereunder to (i) to one or more Affiliates of Provider, or (ii) to any person succeeding to all or substantially all of the assets of Provider (each, a "Permitted Transfer"). In the event of any such assignment, Provider shall provide prior written notice to Customer of the existence of such assignment, together with the name and address of the assignee, and documentation establishing that the assignee has assumed (or as of the closing of such transaction will assume) all or a portion of the Provider's rights and obligations under this Agreement. Customer agrees to promptly review the proposed assignment and if Customer determines the assignment is reasonable, execute any document reasonably requested in acknowledgement of such assignment and in consent thereto in accordance with the provisions hereof. Customer will not unreasonably withhold, condition or delay any such approval.

15.3 Binding Effect. Subject to the foregoing restrictions on assignment, this Agreement will inure to the benefit of and be binding upon the Parties and their respective successors and permitted assigns.

SECTION 16 Representations and Warranties

Each Party represents and warrants (as to itself only) to the other Party that as of the Effective Date:

(a) (with respect to Provider only), it (i) is a corporation duly organized, validly existing and in good standing under the laws of its state of incorporation, (ii) has all requisite powers and all licenses, permits, franchises, certificates of convenience and necessity, authorizations, consents, approvals, exemptions and orders required to carry on its business as now conducted, and to perform its obligations under the Parties' Agreement, and (iii) is duly qualified to transact business as a foreign company in each jurisdiction where the nature of its business requires the same, except where the failure to so qualify would not have a material adverse effect on its business or condition (financial or otherwise) or the performance of its obligations under the Parties' Agreement;

(b) its execution, delivery, and performance of the Parties' Agreement (i) are within its requisite powers, (ii) have been duly authorized by all requisite limited liability company or governmental action, as applicable, and (iii) requires no action by or in respect of, or filing with, any governmental body, agency or official;

(c) the Parties' Agreement has been duly executed and delivered by the signatories so authorized, and constitutes a legal, valid and binding obligation, enforceable against it in accordance with its terms, except as the enforceability thereof may be limited by or subject to (i) bankruptcy, reorganization, liquidation, insolvency and other similar laws of general application affecting rights and remedies of creditors and (ii) the application of general principles of equity (regardless of whether considered in a proceeding in equity or at law);

(d) its execution, delivery, and performance of the Parties' Agreement shall not (i) contravene, conflict with, result in a breach or violation of, or constitute a material default under, its Articles of Organization, Certificate of Organization, Operating Agreement or other similar such document, any agreement, lease, mortgage, note, loan or other instrument, judgment, injunction, order or decree to which it is a party or by which it or its properties may be bound, except for breaches or defaults which have been waived by the applicable Government entities and by Customer's financing parties or (ii) result in a violation or contravention of any applicable Laws; and

(e) it has not received any notice of, nor to its knowledge is there pending or threatened, any actions, investigations, suits or proceedings before any court, other Governmental Authority, arbitrator or other Person against or affecting it or the Parties' Agreement or which would reasonably be expected to have a material adverse effect on its ability to perform its obligations under the Parties' Agreement or that would reasonably be expected to draw into question the validity of the Parties' Agreement.

SECTION 17 Confidentiality

17.1 **Confidential Information**. Provider's systems, means, cost, and methodologies of evaluating, implementing, accomplishing and determining energy savings and the terms of this Agreement for the Project shall be considered privileged and proprietary information. Provider must mark this information as "Confidential" that Provider deems privileged or proprietary ("Marked Confidential Information"). Customer shall use the same level of effort to protect and safeguard such Marked Confidential Information as it employs to safeguard its own confidential information. Provider acknowledges, accepts, and agrees that Customer is subject to the Arizona Public Records Act. If Customer receives a request to disclose Marked Confidential Information, Customer will notify Provider of such request as provided in Section 19 to permit Provider to undertake appropriate measures at Provider's sole cost to prevent the disclosure of Marked Confidential Information. If Customer does not receive a court order or other appropriate instrument from Provider within ten (10) calendar days of Customer's notice to Provider that prevents Customer's disclosure, Customer may disclose the Marked Confidential Information as may be required by law.

17.2 **Marketing**. Neither Party shall make any public announcement regarding the terms or provisions of the Parties' Agreement without the prior written consent in each instance of the other Party. Any such public announcement must be in form and substance approved by both Parties in each instance.

SECTION 18 No Partnership or Joint Venture

The Parties agree that nothing herein shall serve to create any agency, employment or other master and servant relationship or partnership or joint venture relationship or fiduciary relationship between Provider and Customer.

SECTION 19 Notices

Except as provided otherwise in this MESA, every notice, request or other statement to be made or delivered to a Party pursuant to this MESA shall be directed to such Party at the physical address or email address given immediately below such Party's signature on this MESA or to such other physical address or email address as the Party may designate in writing from time to time. Each Party, by written notice to the other Party, shall have the right to specify one additional address to which copies of notices shall be sent. Except as provided otherwise in this MESA, (i) any notice, request, statement, payment or other communication (including by facsimile where transmission confirmation is received) shall be deemed to have been given on the date on which it is received by the recipient and (ii) any notice of a Provider Event of Default or Customer Event of Default, a termination pursuant to Section 13 **Error! Reference source not found.** or a Dispute for purposes of Section 20 shall be deemed received when it is physically delivered to the recipient (e.g., by physical delivery or overnight courier service, but not by email delivery).

SECTION 20 Dispute Resolution

If during the term of the Agreement any issue, dispute, claim or controversy should arise out of or in connection with the Agreement (in each case, a "Dispute") and the Parties are unable to resolve the Dispute on or before the thirtieth (30th) day following written notice of such Dispute by one Party to the other, which notice describes in reasonable detail the nature of the Dispute and the facts and circumstances relating thereto, then either Party may initiate a non-binding, third party mediation of the Dispute through a mediation service provider agreed to by the Parties. Such mediation shall take place on or before forty-five (45) days following the date the initiating Party gives notice of such mediation. The Parties shall share equally the costs of the mediator and mediation service. If the Dispute has not been resolved within fifteen (15) days following such mediation proceeding, any Party may commence judicial legal proceedings as provided in this Agreement.

SECTION 21 Conditions.

21.1 Provider Conditions. Provider shall have no obligation to commence the installation or implementation of ECMs until the following conditions have been satisfied (or waived by Provider):

(a) Customer has signed and delivered to Provider the Agreement;

(b) no material adverse change shall have occurred in the financial condition of Customer or the Facilities; and

(c) Provider has received all of the following documents, which shall be reasonably satisfactory in form and substance to the Provider:

(i) evidence of insurance coverage required of each Party under this MESA,

(ii) Uniform Commercial Code financing statements (for personal property and fixtures) with respect to the Equipment for the ECMs, recorded or filed in such state and local offices as Provider shall determine necessary or advisable to protect its ownership or security interests in such Equipment,

(iii) waivers, partial releases and/or intercreditor agreements by Customer's secured lenders as Provider may reasonably deem necessary or advisable to protect its ownership or security interests in the applicable Equipment and providing such releases and consents as Provider shall reasonably deem necessary to effect the release of any such lien, security interest, or other claim by such lenders in the ECMs,

(iv) Provider has obtained all permits, licenses, consents and approvals required for the consummation of the transactions contemplated by the Agreement.

21.2 Customer Conditions. Customer shall have no obligation to commence the installation or implementation of ECMs under any Work Order until the following conditions have been satisfied (or waived by Customer):

(a) Customer must receive City Council approval of: (i) the Work Order; (ii) any agreement or documents required to finance the implementation of the ECMS; and (iii) the funding for each ECM as work progresses.

(b) To place a Work Order on the City Council agenda for approval, Customer must first receive an original of such Work order signed and binding by Provider and Provider's representations and warranties (which may be established by Provider's delivery of the required performance and payment bonds pursuant to Section 21.2(d)(i) hereof) that it has the financial resources to complete the work and services under the Agreement;

(c) No material adverse change shall have occurred in the financial condition of Provider since the Effective Date of this MESA; and

(d) Customer has received all of the following documents, which shall be reasonably satisfactory in form and substance to the Customer:

(i) Evidence of insurance coverage required of Provider under this Agreement, and performance and payment bonds for each ECM as required by A.R.S. Title 34,

(ii) Provider has obtained or reasonably believes it can obtain all permits, licenses, consents and approvals required for the consummation of the transactions contemplated by the Work Order.

SECTION 22 Miscellaneous

22.1 Headings. The subject headings of the Sections of this MESA are inserted for the purpose of convenient reference and are not intended to be part of this MESA nor to be considered in any interpretation of the same.

22.2 Entire Agreement. This MESA (including each appendix, exhibit or attachment hereto and document incorporated herein by reference) contains the entire understanding and agreement between the Parties with respect to the applicable subject matter and supersedes all contemporaneous and previous communications, negotiations, and agreements, whether oral or written, between the Parties with respect to such subject matter.

22.3 Amendments. This MESA (including each appendix, exhibit or attachment hereto and document incorporated herein by reference) may be amended, modified and/or supplemented only in a writing signed by both Parties.

22.4 Waiver. No waiver by either Party, either express or implied, of any one or more defaults by the other Party in the performance of any provisions of this MESA shall operate or be construed as a waiver of any future default or defaults, whether of a like or different character. Failure by a Party to enforce any of the terms, covenants, conditions, remedies or other provisions of this MESA at any time shall not in any way affect, limit, modify or waive that Party's right thereafter to enforce strict compliance with every such term, covenant, condition, remedy or provision in this MESA, notwithstanding any course of dealing or custom of the trade.

22.5 Preparation. The Parties and their legal counsel have cooperated in the drafting of this MESA, and this MESA shall therefore be deemed their joint work product and not be construed against either Party by reason of such preparation.

22.6 Exclusion of Third Party Rights. The provisions of these this MESA shall not impart rights enforceable by any Person not a Party or bound as a Party (a) unless such Person is a successor or permitted assignee of a Party bound by this MESA, (b) except for Persons identified as indemnitees under the applicable indemnification provisions of this MESA and (c) as specifically provided herein with respect to the rights of Customer's financing parties.

22.7 Severability. If any provision of this MESA or the application thereof to any Party or circumstance shall be unenforceable to any extent, the remainder of this MESA shall not be affected thereby, so long as the material purposes of this MESA can be determined and effectuated.

22.8 Applicable Law. THIS MESA AND THE RIGHTS AND DUTIES OF THE PARTIES HEREUNDER AND THEREUNDER SHALL BE INTERPRETED, PERFORMED AND ENFORCED IN ACCORDANCE WITH THE LAWS OF THE STATE OF ARIZONA, WITHOUT REGARD TO PRINCIPLES OF CONFLICTS OF LAW.

22.9 Consent to Jurisdiction. The Parties irrevocably agree that any suit, action or proceeding relating to arising out of this MESA may be brought in the state or federal courts located in Maricopa County in the State of Arizona. The Parties irrevocably submit to the jurisdiction of such courts. The Parties irrevocably waive any objections which they may have now or hereafter to the venue of any proceedings brought in such courts, or that such proceedings have been brought in a non-convenient forum.

22.10 Counterparts. This MESA may be signed in any number of counterparts and each counterpart shall represent a fully executed original as if signed by both Parties.

22.11 Mutual Cooperation. The Parties shall reasonably cooperate with each other to effectuate the purposes of this MESA.

[Signatures on following page.]

IN WITNESS WHEREOF, the Parties hereto have executed this MESA by and through their duly authorized representatives as of the Effective Date.

AMERESCO, INC.

Digitally signed by Ron Haxton
DN: C=US, E=rhaxton@ameresco.com, O=West Region, OU=Ameresco, CN=Ron Haxton
Date: 2025.05.30 08:12:07-07'00'

By_____
Name: Ron Haxton
Title: Senior Vice President

Address:

Ameresco, Inc.
2355 East Camelback Road, Suite 410
Phoenix, AZ 85016
Attn: Ron Haxton
Email: rhaxton@ameresco.com

CITY OF CHANDLER

By_____
Name:
Title:

Address:
City of Chandler

Attn:
Telephone:
Email:

APPROVED AS TO FORM:

_____
City Attorney

ATTEST:

_____
City Clerk

Appendix A - Definitions and Interpretations

1.1 Definitions. In addition to the terms defined in this MESA, the following terms shall have the meanings given to them in this **Appendix A**.

"Affiliate" means, with respect to any Person, any other Person that, directly or indirectly, through one or more intermediaries, controls or is controlled by or is under common control with such Person. For purposes of this definition, "control" (including related forms such as "controlled by" and "under common control with") means the power, directly or indirectly, to direct or cause the direction of the management and policies of a Person, whether through the ownership of voting securities, by contract or otherwise.

"Agreement" means the documents in the following order of precedence (the document that prevails and controls if a conflict or ambiguity arises among the documents): (1) Appendix B – Supplement to Master Energy Services Agreement; (2) the Master Energy Services Agreement; (3) Appendix A -- Definitions and Interpretations; (4) Appendix C – Work Orders; (5) Appendix D – Notice to Proceed; (6) Appendix E -- Substantial Completion Certificate; and (7) Final Delivery and Acceptance Certificate. Notwithstanding the foregoing, the Parties may modify a specific term of this MESA, or any Appendix of this MESA, by express written agreement in a Work Order.

"Business Day" means a day on which both Parties are open for business on the same calendar day.

"Casualty Loss" has the meaning set forth in Section 8 of this MESA.

"Change of Law Cost" means the difference in cost of equipment or materials that is the direct result of a change in Federal, Arizona, or City law, rule, or regulation, which occurs after the Parties agree to a Work Order Amount (as set forth in Section 5.4 of the MESA) but before the subject Work Order equipment or materials have been installed by Provider and accepted by Customer.

"Claims" means any and all third party claims and resulting liabilities, obligations, damages, losses, demands, penalties, fines, claims, actions, suits, judgments, settlements, costs, expenses and disbursements (including reasonable, actually incurred legal fees, expenses and costs of investigation) of any kind and nature whatsoever, including those arising out of property damage and personal injury and bodily injury (including death, sickness and disease).

"Commencement Date" with respect to each ECM (or separable portion thereof) means the date that Provider has delivered the Substantial Completion Certificate with respect to such ECM pursuant to Section 4.1(a).

"Customer" has the meaning set forth in the preamble of this MESA.

"Customer Event of Default" has the meaning set forth in Section 13.10 of this MESA.

"Dispute" has the meaning set forth in Section 20 of this MESA.

"Due Date" has the meaning set forth in Section 5.2 of this MESA.

"ECM" means Solar ECM and Non-Solar ECM collectively.

"Equipment" means the equipment and materials installed as part of an ECM which is expressly contemplated in this MESA.

"MESA" has the meaning set forth in the preamble of this agreement.

"Effective Date" has the meaning set forth in the preamble of this MESA.

"Facilities" has the meaning set forth in the preamble of this MESA.

"Final Delivery and Acceptance Certificate" has the meaning set forth in Section 4.1(a).

"Final Commencement Date" means the date that Customer has delivered the Final Delivery and Acceptance Certificate pursuant to Section 4.1(a)for all of the ECMs under a Work Order.

"Force Majeure" or "**Force Majeure Event**" means an event, condition or circumstance that is not reasonably in the control of (and is not due to the fault or negligence of) the Party claiming it which causes the affected Party to be delayed in or prevented from performing or carrying its obligations, including but not limited to an act of God, strikes, lockouts or other industrial disturbances, acts of public enemies, acts of terrorism, epidemic, pandemic, orders or restraints of any kind of the government of the United States or any state or any of their departments agencies or officials or any other civil governmental, military or judicial authority, war, blockage, insurrection, riot, sudden action of the elements, fire, explosion, flood, earthquake, storms, drought, landslide, or explosion or nuclear emergency., Economic hardship of or suffered by a Party shall not constitute a Force Majeure event. Furthermore, the settlement of strikes and labor disturbances expressly directed at the affected Party are deemed to be wholly within the control of the Party whose performance is prevented or delayed by the same, such that such strikes or labor disturbances shall also not constitute Force Majeure events. Notwithstanding any of the foregoing, Force Majeure Events shall not include (a) a failure of equipment except if caused by a Force Majeure Event, (b) unavailability of replacement or spare parts except if caused by a Force Majeure Event or (c) with respect to damage to, or performance of, the Equipment, climatic or operating conditions at the Facilities that are inside the design parameters of the ECMs (structural or non-structural).

"Governmental Authority" means, with respect to any Person or property, any national, state, provincial, county, department, city, or other political subdivision that exercises jurisdiction over such Person or property, and any court, agency, department, commission, board, bureau, or instrumentality, whether civil or military, of any of them.

"Guaranteed Savings" has the meaning set forth in Section 3.1 of this MESA.

"Hazardous Substance" means any substance, waste or material which is toxic, explosive, corrosive, flammable, infectious, radioactive, carcinogenic, mutagenic or otherwise hazardous, including petroleum, its derivatives, by-products and other hydrocarbons, lead paint and asbestos, and which is or becomes regulated by any applicable Governmental Authority, including any agency, department, commission, board or instrumentality of the United States, the State of Arizona or any political subdivision thereof.

"Implementation Period" means, with respect to each Work Order, the period beginning on the date of the applicable Notice to Proceed and ending on the Final Commencement Date.

"Implementation Price" means, with respect to each ECM, the amount set forth as the "Implementation Price" for such ECM in the applicable Work Order.

"Indemnified Party" has the meaning set forth in Section 10 of this MESA.

"Indemnifying Party" has the meaning set forth in Section 10 of this MESA.

"Law" means any constitutional provision, statute, act, code, regulation, rule, ordinance, order, decree, directive, ruling, proclamation, resolution, judgment, decision, declaration, or other official interpretation thereof by an applicable Governmental Authority; and a reference to a Law shall be deemed to refer to such Law as it may be amended from time to time, including any successor legislation thereof.

"M&V Plan" means the Measurement and Verification Plan attached as to each Work Order under this MESA; it being understood and agreed that wherever the M&V Plan contains the phrase "it is assumed," "it is proposed" or language of similar effect, such language shall be presumed to be a definitive statement that the relevant party is obligated to perform the task or obligation specified; provided that where the M&V Plan establishes a standard or specification but allows flexibility in the actions that may be taken to meet such standard or specification, the foregoing presumption shall not diminish such flexibility.

"Measurement Period" has the meaning set forth in Section 3.3(a) of this MESA.

"Measurement & Verification Services" has the meaning set forth in the Work Order.

"Non-Solar ECM" means any ECM which is not a Solar ECM.

"Notice to Proceed" has the meaning set forth in Section 5.1 of this MESA.

"Operation and Maintenance Services" has the meaning set forth in the Work Order.

"Party" and **"Parties"** has the meaning set forth in the preamble of this MESA.

"Performance Period" means the period beginning on the Final Commencement Date and ending upon Customer's final payment with respect to the ECMs, as applicable, under the applicable Work Order.

"Performance Period Expenses" means fees and expenses payable by Customer to Provider for the Performance Period Services and any other services rendered by Provider with respect to the ECMs, calculated as directed in the applicable Work Order.

"Performance Period Services" means, with respect to any ECM, the Operation and Maintenance Services and the Measurement & Verification Services to be provided by Provider during the Performance Period or other services to be provided by Provider during the Performance Period, in each case as expressly set forth in the applicable Work Order.

"Person" means any individual, corporation, partnership, limited liability company, joint venture, association, joint stock company, trust, Governmental Authority or unincorporated organization.

"Provider" means Ameresco, Inc.

"Provider Event of Default" has the meaning set forth in Section 13.3 of this MESA.

"Savings Guarantee" has the meaning set forth in Section 3.3(c) of this MESA.

"Savings Reconciliation" has the meaning set forth in Section 3.3(a) of this MESA.

"Shortfall Payment" has the meaning set forth in Section 3.3(b) of this MESA.

"Solar ECM" means an integrated assembly of energy storage systems, photovoltaic panels, mounting assemblies, inverters, converters, metering, transformers, disconnects, combiners, switches, wiring devices and wiring (excluding any interconnection facilities) intended to generate and/or store electricity.

"Substantial Completion" means, with respect to an ECM, that (i) the ECM and related Equipment have been fully implemented, installed and completed in accordance with the specifications in this MESA, (ii) that such ECM and related Equipment have been commissioned by Provider and are then operating as intended and (iii) all punchlist items have been completed in connection with the full implementation, installation and completion of the ECM.

"Substantial Completion Certificate" has the meaning set forth in Section 4.1(a) of this MESA.

"Verified Savings" has the meaning set forth in Section 3.2 of this MESA.

"Warranty Period" has the meaning set forth in Section 2.5(a) of this MESA.

1.2 **Terminology**. Except where the context otherwise requires, in this MESA, (a) words imparting the singular number shall include the plural number, and vice versa, and shall be

construed to be of such gender or number as the context requires; (b) the words "herein," "hereof," "hereunder" and words of similar import when used in this MESA refer to this MESA as a whole, and not to any particular article, section or subsection; (c) any reference to Section shall mean such Section of the portion of this MESA in which such reference is made; (d) pronouns shall include Persons of every kind and character; (e) the gender of all words used herein shall include the masculine, feminine and neuter; (f) the words "include(s)" or "including" shall mean "including without limitation"; and (g) all references to "dollars," "$" and "U.S. Dollars" shall refer to legal currency of the United States.

1.3 Additional Defined Terms. Additional terms otherwise defined in this MESA or the Appendices hereto shall be deemed to have the meanings set forth therein.

APPENDIX B

SUPPLEMENT TO MASTER ENERGY SERVICES AGREEMENT BETWEEN AMERESCO, INC. AND CITY OF CHANDLER

CITY OF CHANDLER DOCUMENT NO. [INSERT]

THIS SUPPLEMENT TO THE AGREEMENT (Supplement) is entered into by and between the City of Chandler, an Arizona municipal corporation, by its Mayor, (Customer), and Ameresco, Inc. (Provider), (Customer and Provider may individually be referred to as Party and collectively referred to as Parties) and made effective the same date as the Master Energy Services Agreement.

AGREEMENT

NOW, THEREFORE, in consideration of the premises and the mutual promises contained in this Agreement, Customer and Provider agree to the following terms and conditions that supplement and modify the Master Energy Services Agreement as follows:

SECTION I: DEFINITIONS

For purposes of this Supplement, the definitions set forth in Appendix A apply except as modified in this section:

"*Agreement*" means this Supplement, the Master Energy Services Agreement, and all attached appendices and exhibits approved and agreed to by the Parties**.**
"*Customer***"** means the City of Chandler, Arizona.
"*Days***"** means calendar days.
"*May or Should***"** means something that is not mandatory but permissible.
"*Provider*" means Ameresco
"*Shall, Will, or Must***"** means a mandatory requirement.
"S*upplement***"** means this agreement which supersedes, modifies, and amends the Master Energy Services Agreement.

SECTION II: ENTIRE AGREEMENT; PRECEDENCE OF DOCUMENTS

The Parties' Agreement in its entirety includes and incorporates by this reference the following documents. If a conflict or ambiguity arises among the following documents, the documents in the following order prevail and control: (1) Appendix B -- this Supplement; (2) the Master Energy Services Agreement; (3) Appendix A -- Definitions and Interpretations; (4) Appendix C – Work Orders; (5) Appendix D – Notice to Proceed; (6) Appendix E -- Substantial Completion Certificate; and (7) Appendix F -- Final Delivery and Acceptance Certificate.

SECTION III. GENERAL CONDITIONS

3.1 Title 34. Arizona Revised Statutes Title 34, chaps. 1-6, secs. 34-101 and following, as amended, as applicable, control this Agreement. The provisions related to master job order

contractor agreement apply and control the MESA and each Work Order must comply with job order agreement requirements as provided in Title 34.

3.2 Records/Audit. Records of the Provider's direct personnel payroll, reimbursable expenses pertaining to this Agreement and records of accounts between the Customer and Provider must be kept on the basis of generally accepted accounting principles and must be made available to the Customer and its auditors for up to three years following the Customer's final acceptance of the services under this Agreement. The Customer, its authorized representative, or any federal agency, reserves the right to audit Provider's records to verify the accuracy and appropriateness of all cost and pricing data relating to this Agreement and any Work Orders, including data used to negotiate this Agreement and any Work Orders. The Customer reserves the right to decrease the total amount of Agreement price or payments made under this Agreement or request reimbursement from the Provider following final contract payment on this Agreement if, upon audit of the Provider's records, the audit discloses the Provider has provided false, misleading, or inaccurate cost and pricing data. The Provider will include a similar provision in all of its contracts with subcontractors providing services under the Agreement to ensure that the Customer, its authorized representative, or the appropriate federal agency, has access to the subcontractors' records to verify the accuracy of all cost and pricing data. The Customer reserves the right to decrease Contract price or payments made on this Agreement or request reimbursement from the Provider following final payment on this Agreement if the above provision is not included in subcontractor agreements, and one or more subcontractors refuse to allow the Customer to audit their records to verify the accuracy and appropriateness of all cost and pricing data. If, following an audit of this Agreement, the audit discloses the Provider has provided false, misleading, or inaccurate cost and pricing data, and the cost discrepancies exceed 1% of the total Agreement billings, the Provider will be liable for reimbursement of the reasonable, actual cost of the audit. Any audit will be performed at the Customer's expense, except as provided herein, and shall take place at the Provider's offices during normal business hours and following reasonable prior notice from the Customer.

3.3 Alteration in Character of Work. Whenever an alteration in the character of work results in a substantial change in this Agreement, thereby materially increasing or decreasing the scope of services, cost of performance, or Project schedule, the work will be performed as directed by the Customer. However, before any modified work is started, a written amendment must be approved and executed by the Customer and the Provider. Such amendment must not be effective until approved by the Customer. Additions to, modifications, or deletions from this Agreement as provided herein may be made, and the compensation to be paid to the Provider and, if applicable, the Project schedule and the Provider's obligations with respect to the Savings Guarantee may accordingly be adjusted by mutual agreement of the Parties. It is distinctly understood and agreed that no claim for extra work done or materials furnished by the Provider will be allowed by the Customer except as provided herein, nor must the Provider do any work or furnish any materials not covered by this Agreement unless such work is first authorized in writing. Any such work or materials furnished by the Provider without prior written authorization will be at Provider's own risk, cost, and expense, and Provider hereby agrees that without written authorization Provider will make no claim for compensation for such work or materials furnished.

3.4 Termination for Convenience. The Parties hereby agree to the full performance of the covenants contained herein, except that the Customer reserves the right, at its discretion and

without cause, to terminate or abandon any service provided for in this Agreement or abandon any portion of the Agreement for which services have been performed by the Provider. In the event the Customer abandons or suspends the services, or any part of the services as provided in this Agreement, the Customer will notify the Provider in writing at least thirty (30) days in advance, and immediately after receiving such notice, the Provider must discontinue advancing the work specified under this Agreement. Upon such termination, abandonment, or suspension, and subject to Provider's receipt of payment therefor as provided in this Section 3.4, the Provider must deliver to the Customer all drawings, plans, specifications, special provisions, estimates and other work entirely or partially completed, together with all unused materials supplied by the Customer. The Provider must appraise the work Provider has completed and submit Provider's appraisal to the Customer for evaluation. The Customer may inspect the Provider's work to appraise the work completed. The Provider will receive compensation in full for services performed to the date of such termination. The fee shall be paid in accordance with Section 5 of this Agreement, and as mutually agreed upon by the Provider and the Customer. If there is no mutual agreement on payment, the final determination will be made in accordance with Section 20 of this Agreement. However, in no event may the fee exceed the fee set forth in this Agreement nor as amended in accordance with Section 3.3 of this Appendix B (Alteration in Character of Work). The Customer will make the final payment within 30 days after the Provider has delivered the last of the partially completed items and the Parties agree on the final fee. If the Customer is found to have improperly terminated the Agreement for cause or default, the termination will be converted to a termination for convenience in accordance with the provisions of this Agreement.

3.5 Reserved

3.6 Indemnification. The Provider (Indemnitor) must indemnify, defend, save and hold harmless the Customer and its officers, officials, agents and employees (Indemnitee) from any and all third party claims and resulting actions, liabilities, damages, losses or expenses (including court costs, reasonable attorneys' fees and reasonable costs of claim processing, investigation and litigation) (Claims) to the extent caused or alleged to be caused, in whole or in part, by the wrongful, negligent or willful acts, or errors or omissions of the Provider or any of its owners, officers, directors, agents, employees, or subcontractors in connection with this Agreement. This indemnity includes any claim or amount arising out of or recovered under workers' compensation law, or on account of the failure of the Provider to conform to any federal, state or local law, statute, ordinance, rule, regulation or court decree. The Provider must indemnify Indemnitee from and against any and all Claims, except to the extent arising from an Indemnitee's own negligent or willful acts or omissions. The Provider is responsible for primary loss investigation, defense and judgment costs where this indemnification applies. In consideration of the award of this Agreement, the Provider agrees to waive all rights of subrogation against Indemnitee for losses arising from or related to this Agreement. The obligations of the Provider under this provision survive the termination or expiration of this Agreement.

3.7 Insurance Requirements. Provider must procure insurance under the terms and conditions and for the amounts of coverage set forth below against claims that may arise from or relate to performance of the work under this Agreement by Provider and its agents, representatives, employees, and subcontractors. Provider and any subcontractors must maintain this insurance

until all of their obligations have been discharged, including any warranty periods under this Agreement. These insurance requirements are minimum requirements for this Agreement and in no way limit the indemnity covenants contained in this Agreement. The Customer in no way warrants that the minimum limits stated in this section are sufficient to protect the Provider from liabilities that might arise out of the performance of the work under this Agreement by the Provider, the Provider's agents, representatives, employees, or subcontractors. Provider is free to purchase such additional insurance as may be determined necessary.

3.7.1 Scope and Limits of Insurance: Provider must provide coverage with the following limits of liability.

3.7.1.1 Commercial General Liability – Occurrence Form. Policy must also include coverage for products completed operations, independent contractors, personal injury, property damage, and advertising injury. Such limits may be achieved through a combination of primary and umbrella liability policies.

Products – Completed Operations Aggregate	$10,000,000
Each Occurrence	$10,000,000

The policy must be endorsed to include the following additional insured language: "The City of Chandler, its agents, representatives, officers, directors, officials, employees, and volunteers must be named as an additional insured with respect to liability arising out of the activities performed by the Provider." This endorsement may not contain an exclusion or limitation of completed operations coverage as regards the additional insured except with respect to the stated aggregate limits of liability. The policy may not exclude the explosion/collapse/underground ("xcu") hazard.

3.7.1.2 Automobile Liability. Bodily Injury and Property Damage for any owned, hired, and non-owned vehicles used in the performance of work under this Agreement.

Combined Single Limit (CSL)	$1,000,000

The policy must contain an "MCS-90" endorsement providing for clean-up of pollution conditions arising from transported product, if the work performed under the Agreement requires the transportation of any Hazardous Substances by motor vehicle. The policy must also be endorsed to include the following additional insured language: "The City of Chandler its agents, representatives, officers, directors, officials, employees, and volunteers must be named as an additional insured with respect to liability arising out of the activities performed by Provider, including automobiles owned, leased, hired, or borrowed by Provider ".

3.7.1.3 Worker's Compensation and Employers' Liability.

Workers' Compensation	Statutory
Employers' Liability	
Each Accident	$1,000,000

Disease – Each Employee	$1,000,000
Disease – Policy Limit	$1,000,000

Policy must contain a waiver of subrogation against the City of Chandler.

3.7.1.4 Pollution Liability.

Per Occurrence	$10,000,000
Annual Aggregate	$10,000,000

The policy must be endorsed to include the following additional insured language: "The City of Chandler its agents, representatives, officers, directors, officials, employees, and volunteers must be named as an additional insured with respect to liability arising out of the activities performed by Provider." The policy must include coverage for cleanup of sudden or accidental pollution conditions arising from the Wireless Facilities and Communications Equipment, as defined in the Agreement; cleanup of new conditions arising from Provider's operations and use of Work Order sites under this Agreement; and third-party claims for on and off-site bodily injury and property damage. Provider warrants that any retroactive date under the policy must precede the Effective Date of this Agreement; and that either continuous coverage will be maintained, or an extended discovery period will be exercised for a period of three (3) years beginning at the time work under this Agreement is completed.

3.7.1.5 Tech E&O and Network Security and Privacy Liability Insurance (Cyber).

Per Loss	$5,000,000
Annual Aggregate	$5,000,000

The policy must cover professional misconduct or lack of ordinary skill for those positions defined in the Scope of Services of this Agreement. If the professional liability insurance required by this Agreement is written on a claims-made basis, Provider warrants that any retroactive date under the policy will precede the Effective Date of this Agreement; and that either continuous coverage will be maintained, or an extended discovery period will be exercised for a period of three (3) years beginning at the Effective Date of this Agreement. If such insurance is maintained on an occurrence form basis, Provider must maintain such insurance for an additional period of one (1) year following termination or expiration of this Agreement. If such insurance is maintained on a claims-made basis, Provider must maintain such insurance for an additional period of three (3) years following termination or expiration of this Agreement. If Provider contends that any of the insurance it maintains pursuant to other sections of this clause satisfies this requirement (or otherwise insures the risks described in this section), Provider must provide proof of same. The insurance must provide coverage for the following risks: (i) Liability arising from theft, dissemination or use of confidential information (a defined term including but not limited to bank account, credit card account, personal information such as name, address, social security numbers, etc. information) stored or transmitted in electronic form; (ii) Network security liability arising from the unauthorized access to, use of or tampering with the solar energy services software including hacker attacks, inability of an authorized third party, to

gain access to your services including denial of service, unless caused by a mechanical or electrical failure; (iii) Liability arising from the introduction of a computer virus into, or otherwise causing damage to, a customer's or third person's computer, the solar energy services network or similar computer related property and the data, software, and programs thereon. The policy must provide a waiver of subrogation.

3.7.1.6 Professional Liability. If the Agreement is the subject of any professional services or work performed by Provider, or if Provider engages in any professional services or work adjunct or residual to performing the work under this Agreement, the Provider must maintain Professional Liability insurance covering errors and omissions arising out of the work or services performed by the Provider, or anyone employed by the Provider, or anyone whose acts, mistakes, errors and omissions Provider is legally liable, with a liability limit of $1,000,000 each claim and $2,000,000 all claims. In the event the Professional Liability insurance policy is written on a "claims made" basis, coverage must extend for 3 years past completion and acceptance of the work or services, and Provider, or its selected Design Professional will submit Certificates of Insurance as evidence the required coverage is in effect. The Design Professional must annually submit Certificates of Insurance citing that the applicable coverage is in force and contains the required provisions for a 3-year period.

3.7.1.7 Builders' Risk/Installation Floater Insurance. Provider bears all responsibility for loss to all equipment or Work under construction. Unless waived in writing by Customer Provider will purchase and maintain in force Builders' Risk/Installation Floater insurance on the entire Work until completed and accepted by Customer. This insurance will be Special Causes of Loss policy form, (minimally including perils of fire, flood, lightning, explosion, windstorm and hail, smoke, aircraft and vehicles, riot and civil commotion, theft, vandalism, malicious mischief, and collapse), completed value, replacement cost policy form equal to the contract price and all subsequent modifications. The Contractor's Builders' Risk/Installation Floater insurance must be primary and not contributory.

A. Builders' Risk/Installation Floater insurance must cover the entire Work including reasonable compensation for architects and Provider's services and expenses and other "soft costs" made necessary by an insured loss. Builders' Risk/Installation Floater insurance must provide coverage from the time any covered property comes under Provider's control and or responsibility, and continue without interruption during course of construction, renovation and or installation, including any time during which any project property or equipment is in transit, off site, or while on site for future use or installation. Insured property must include, but not be limited to, scaffolding, false work, and temporary buildings at the site. This insurance must also cover the cost of removing debris, including demolition as may be legally required by operation of any law, ordinance, regulation or code.

B. Provider must also purchase and maintain Boiler and Machinery insurance with the same requirements as Builders' Risk/Installation Floater insurance cited above if the Work to be performed involves any exposures or insurable property normally covered under a Boiler and Machinery insurance policy or made necessary as required by law or testing requirements in the performance of this Agreement. Provider will be responsible for any and all deductibles under these policies and Provider waives all rights of recovery

and subrogation against Customer under Provider's Builders' Risk/Installation Floater insurance described herein.

C. Builders' Risk/Installation Floater Insurance must be maintained until whichever of the following first occurs: (i) final payment has been made; or (ii) until no person or entity, other than Customer, has an insurable interest in the property required to be covered.

D. The Builders' Risk/Installation Floater insurance must be endorsed so that the insurance will not be canceled or lapse because of any partial use or occupancy by Customer.

E. The Builders Risk/Installation Floater insurance must include as named insureds, Customer, Provider, and all tiers of subcontractors and others with an insurable interest in the Work who will be named as additional insureds unless they are able to provide the same level of coverage with Customer and Provider named as additional insureds. Certificates must contain a provision that the insurance will not be canceled or materially altered without at least 30 days advance notice to Customer. Customer must also be named as a Loss Payee under the Builders' Risk/Installation Floater coverage.

F. The Builders Risk/Installation Floater insurance must be written using the Special Causes of Loss policy form, replacement cost basis.

G. All rights of subrogation under the Builders Risk/Installation Floater insurance are, by this Contract/Agreement, waived against Customer, its officers, officials, agents and employees.

H. Provider is responsible for payment of all deductibles under the Builders' Risk/Installation Floater insurance policy.

3.7.2 Additional Insurance Requirements. The policies are to contain, or be endorsed to contain, the following provisions.

3.7.2.1 Any self-insured retentions and deductibles must be declared and approved by Customer. If not approved, Customer may require that the insurer reduce or eliminate any deductible or self-insured retentions with respect to Customer, its officers, officials, agents, employees, and volunteers.

3.7.2.2 Provider's insurance must contain broad form contractual liability coverage.

3.7.2.3 Provider's insurance coverage must be primary insurance with respect to Customer, its officers, officials, agents, and employees. Any insurance or self-insurance maintained by Customer, its officers, officials, agents, and employees shall be in excess of the coverage provided by Provider and must not contribute to it.

3.7.2.4 Provider's insurance must apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability.

3.7.2.5. Coverage provided by Provider must not be limited to the liability assumed under the indemnification provisions of this Agreement.

3.7.2.6 The policies must contain a severability of interest clause and waiver of subrogation against Customer, its officers, officials, agents, and employees, for losses arising from Work performed by Provider for Customer.

3.7.2.7 Provider, its successors and or assigns, are required to maintain Commercial General Liability insurance as specified in this Agreement for a minimum period of 3 years following completion and acceptance of the Work. Provider must submit a Certificate of Insurance evidencing Commercial General Liability insurance during this 3-year period containing all the Agreement insurance requirements, including naming the City of Chandler, its agents, representatives, officers, directors, officials and employees as Additional Insured as required.

3.7.2.8 If a Certificate of Insurance is submitted as verification of coverage, Customer will reasonably rely upon the Certificate of Insurance as evidence of coverage, but this acceptance and reliance will not waive or alter in any way the insurance requirements or obligations of this Agreement.

3.7.3 Insurance Cancellation During Term of Agreement.

3.7.3.1 If any of the required policies expire during the life of this Agreement, Provider must forward renewal or replacement Certificates to Customer within 10 days after the renewal date containing all the required insurance provisions.

3.7.3.2. Each insurance policy required by the insurance provisions of this Agreement shall provide the required coverage and shall not be suspended, voided or canceled except after thirty (30) days prior written notice has been given to Customer, except when cancellation is for non-payment of premium, then ten (10) days prior notice may be given. Such notice shall be sent directly to Chandler Law-Risk Management Department, Post Office Box 4008, Mailstop 628, Chandler, Arizona 85225. If any insurance company refuses to provide the required notice, Provider or its insurance broker shall notify Customer of any cancellation, suspension, non-renewal of any insurance within seven (7) days of receipt of insurers' notification to that effect.

3.7.4 Acceptability of Insurers. Insurance is to be placed with insurers duly licensed or approved unlicensed companies in the State of Arizona and with an "A.M. Best" rating of not less than A-VII. Customer in no way warrants that the above-required minimum insurer rating is sufficient to protect Provider from potential insurer insolvency.

3.7.5 Verification of Coverage. Provider must furnish Customer with certificates of insurance (ACORD form or equivalent approved by Customer) as required by this Agreement. The certificates for each insurance policy are to be signed by a person authorized by that insurer to bind coverage on its behalf. All certificates and endorsements are to be received and approved by Customer before work commences. Each insurance policy required by this Agreement must be in effect at or prior to commencement of work under this Agreement and remain in effect for the duration of the Agreement. Failure to maintain the insurance policies as required by this Agreement or to provide evidence of renewal is a material breach of this Agreement. All

certificates required by this Agreement must be sent directly to Customer with a copy to Risk Management as the addresses listed in Section 3.7.3. The Agreement number and description are to be noted on the certificate of insurance. At Customer's request, Provider must make certified copies of all insurance policies required by this Agreement available for Customer's review through a representative and at a location within Maricopa County, Arizona designated by Provider.

3.7.6 Contractors. Provider's certificate(s) must include all contractors as additional insureds under its policies or contractors must maintain separate insurance as determined by Provider and contractors must name City of Chandler as an additional insured, however, contractor's limits of liability must not be less than $1,000,000 per occurrence, $2,000,000 aggregate.

3.7.7 Approval. Any modification or variation from the insurance requirements in this Agreement must have prior approval from the Office of the City Attorney, whose decision will be final. Such action will not require a formal contract amendment but may be made by administrative action.

3.7.8 Risk of Loss. Provider assumes the risk of all loss, damage or claims related to Provider's use of the Work Order sites or other Public Property, Provider or third parties throughout the term of this Agreement and the term(s) of all permits. Provider must be responsible for all damage to its property and equipment related to this Agreement unless caused by the negligence of the Customer or its agents or contractors.

3.7.9 Insurance to be Provided by Others. Provider must cause its contractors or other persons occupying, working on or about, or using the Work Order sites pursuant to this Agreement to be covered by their own or Provider's insurance as required by this Agreement. The required policy limits for commercial general liability insurance provided by such persons must be $1,000,000 for each occurrence, $1,000,000 for products and completed operations annual aggregate, and $2,000,000 general aggregate limit per policy year. This paragraph does not apply to persons who do not actually perform physical labor at the Work Order sites (such as Provider's consulting design engineers).

3.8 Reserved

3.9 Reserved

3.10 Successors and Assigns. Customer and Provider each bind itself, its partners, successors, assigns, and legal representatives to the other party to this Agreement and to the partners, successors, assigns, and legal representatives of such other party in respect to all covenants of this Agreement. In no event may any contractual relation be created between any third party and Customer.

3.11 Disputes. In addition to the dispute resolution provisions set forth in Section 20 of the Agreement, the Parties agree that in any dispute arising out of an interpretation of this Agreement or the duties required not disposed of by agreement between Provider and

Customer, the final determination at the administrative level will be made by the Chandler City Manager or City Manager's designee.

3.12 Completeness and Accuracy of Provider's Work. Provider must be responsible for the completeness and accuracy of Provider's services, data, and other work prepared or compiled under Provider's obligations under this Agreement and must correct, at Provider's expense, all willful or negligent errors, omissions, or acts that may be discovered. The fact that Customer has accepted or approved the Provider's work will in no way relieve the Provider of any of Provider's responsibilities.

3.13 Reserved

3.14 City's Right of Cancellation. The Parties acknowledge that this Agreement is subject to cancellation by Customer under the provisions of Section 38-511, Arizona Revised Statutes (A.R.S.).

3.15 Independent Contractor. For this Agreement Provider constitutes an independent contractor. Any provisions in this Agreement that may appear to give Customer the right to direct Provider as to the details of accomplishing the work or to exercise a measure of control over the work means that Provider must follow the wishes of Customer as to the results of the work only. These results must comply with all applicable laws and ordinances.

3.16 Project Staffing. Prior to the start of any work under this Agreement, Provider must assign to Customer the key personnel that will be involved in performing services prescribed in the Agreement. Customer may acknowledge its acceptance of such personnel to perform services under this Agreement. At any time hereafter that Provider desires to change key personnel while performing under the Agreement, Provider must submit the qualifications of the new personnel to Customer for prior approval. Provider will maintain an adequate and competent staff of qualified persons, as may be determined by Customer, throughout the performance of this Agreement to ensure acceptable and timely completion of the Scope of Services. If Customer objects, with reasonable cause, to any of Provider staff, Provider must take prompt corrective action acceptable to Customer and, if required, remove such personnel from the Project and replace with new personnel agreed to by Customer.

3.17 Subcontractors. Prior to beginning the work, Provider must furnish Customer for approval the names of subcontractors to be used under this Agreement. Any subsequent changes are subject to Customer's written prior approval.

3.18 Force Majeure. If either party is delayed or prevented from the performance of any act required under this Agreement by reason of any Force Majeure Event, performance of that act shall be excused, but only for the period of the delay, if the Party provides written notice to the other Party within ten days of such act. The time for performance of the act shall be extended for a period equivalent to the duration of the Force Majeure event.

3.19 Compliance with Federal Laws. Provider understands and acknowledges the applicability of the Americans with Disabilities Act, the Immigration Reform and Control Act

of 1986 and the Drug Free Workplace Act of 1989 to it. Provider agrees to comply with these laws in performing this Agreement and to permit Customer to verify such compliance.

3.20 No Israel Boycott. By entering into this Agreement, Provider certifies that Provider is not currently engaged in, and agrees for the duration of the Agreement, not to engage in a boycott of Israel as defined by state statute.

3.21 Legal Worker Requirements. A.R.S. § 41-4401 prohibits Customer from awarding a contract to any contractor who fails, or whose subcontractors fail, to comply with A.R.S. § 23-214(A). Therefore, Provider agrees Provider and each subcontractor it uses warrants their compliance with all federal immigration laws and regulations that relate to their employees and their compliance with§ 23-214, subsection A. A breach of this warranty will be deemed a material breach of the Agreement and may be subject to penalties up to and including termination of the Agreement. Customer retains the legal right to inspect the papers of any Provider's or subcontractor's employee who provides services under this Agreement to ensure that the Provider and subcontractors comply with the warranty under this provision.

3.22 Lawful Presence Requirement. A.RS. §§ 1-501 and 1-502 prohibit Customer from awarding a contract to any natural person who cannot establish that such person is lawfully present in the United States. To establish lawful presence, a person must produce qualifying identification and sign a Customer-provided affidavit affirming that the identification provided is genuine. This requirement will be imposed at the time of contract award. This requirement does not apply to business organizations such as corporations, partnerships, or limited liability companies.

3.23 Covenant Against Contingent Fees. Provider warrants that no person has been employed or retained to solicit or secure this Agreement upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee, and that no member of the Chandler City Council, or any Customer employee has any interest, financially, or otherwise, in Provider's firm. For breach or violation of this warrant, Customer may annul this Agreement without liability or, at its discretion, to deduct from the Agreement price or consideration, the full amount of such commission, percentage, brokerage, or contingent fee.

3.24 Reserved

3.25 Disclosure of Information Adverse to Customer's Interests. To evaluate and avoid potential conflicts of interest, Provider must provide written notice to Customer, as set forth in this Section, of any work or services performed by Provider for third parties that may involve or be associated with any real property or personal property owned or leased by Customer. Such notice must be given 7 business days prior to commencement of the services by Provider for a third party, or 7 business days prior to an adverse action as defined below. Written notice and disclosure must be sent to the Customer's project manager. An adverse action under this Agreement includes, but is not limited to: (a) using data as defined in the Agreement acquired in connection with this Agreement to assist a third party in pursuing administrative or judicial action against Customer; or (b) testifying or providing evidence on behalf of any person in connection with an administrative or judicial action against Customer;

or (c) using data to produce income for Provider or its employees independently of performing the services under this Agreement, without the prior written consent of Customer. Provider represents that except for those persons, entities, and projects identified to Customer, the services performed by Provider under this Agreement are not expected to create an interest with any person, entity, or third-party project that is or may be adverse to Customer's interests. Provider's failure to provide a written notice and disclosure of the information as set forth in this Section constitute a material breach of this Agreement.

3.26 Data Confidentiality and Data Security. As used in the Agreement, data means all information, whether written or verbal, including plans, photographs, studies, investigations, audits, analyses, samples, reports, calculations, internal memos, meeting minutes, data field notes, work product, proposals, correspondence and any other similar documents or information prepared by, obtained by, or transmitted to Provider or its subcontractors in the performance of this Agreement. The Parties agree that all data, regardless of form, including originals, images, and reproductions, prepared by, obtained by, or transmitted to Provider or its subcontractors in connection with Provider's or its subcontractor's performance of this Agreement is confidential and proprietary information belonging to Customer. Except as specifically provided in this Agreement, Provider or its subcontractors must not divulge data to any third party without Customer's prior written consent. Provider or its subcontractors must not use the data for any purposes except to perform the services required under this Agreement. These prohibitions do not apply to the following data provided to Provider or its subcontractors have first given the required notice to Customer: (a) data which was known to Provider or its subcontractors prior to its performance under this Agreement unless such data was acquired in connection with work performed for Customer; or (b) data which was acquired by Provider or its subcontractors in its performance under this Agreement and which was disclosed to Provider or its subcontractors by a third party, who to the best of Provider's or its subcontractors knowledge and belief, had the legal right to make such disclosure and Provider or its subcontractors are not otherwise required to hold such data in confidence; or (c) data which is required to be disclosed by virtue of law, regulation, or court order, to which Provider or its subcontractors are subject. In the event Provider or its subcontractors are required or requested to disclose data to a third party, or any other information to which Provider or its subcontractors became privy as a result of any other contract with Customer, Provider must first notify Customer as set forth in this Section of the request or demand for the data. Provider or its subcontractors must give Customer sufficient facts so that Customer can be given an opportunity to first give its consent or take such action that Customer may deem appropriate to protect such data or other information from disclosure. Unless prohibited by law, within ten calendar days after completion of services for a third party on real or personal property owned or leased by Customer, Provider or its subcontractors must promptly deliver, as set forth in this Section, a copy of all such data received from a third party with respect to real or personal property owned or leased by Customer to Customer. All data must continue to be subject to the confidentiality agreements of this Agreement. Provider or its subcontractors assume all liability to maintain the confidentiality of the data in its possession and agrees to compensate Customer if any of the provisions of this Section are violated by Provider, its employees, agents or subcontractors. Solely for the purposes of seeking injunctive relief, it is agreed that a breach of this Section must be deemed to cause irreparable harm that justifies injunctive relief in court. Provider agrees that the requirements of this

Section must be incorporated into all subcontracts entered into by Provider. A violation of this Section may result in immediate termination of this Agreement without notice.

3.27 Personal Identifying Information-Data Security. Personal identifying information, financial account information, or restricted Customer information, whether electronic format or hard copy, must be secured and protected at all times by Provider and any of its subcontractors. At a minimum, Provider must encrypt or password-protect electronic files. This includes data saved to laptop computers, computerized devices, or removable storage devices. When personal identifying information, financial account information, or restricted Customer information, regardless of its format, is no longer necessary, the information must be redacted or destroyed through appropriate and secure methods that ensure the information cannot be viewed, accessed, or reconstructed. In the event that data collected or obtained by Provider or its subcontractors in connection with this Agreement is believed to have been compromised, Provider or its subcontractors must immediately notify the Customer contact. Provider agrees to reimburse Customer for any costs incurred by Customer to investigate potential breaches of this data and, where applicable, the reasonable cost of notifying individuals who may be impacted by the breach. Provider agrees that the requirements of this Section must be incorporated into all subcontracts entered into by Provider. It is further agreed that a violation of this Section must be deemed to cause irreparable harm that justifies injunctive relief in court. A violation of this Section may result in immediate termination of this Agreement without notice. The obligations of Provider or its subcontractors under this Section must survive the termination of this Agreement.

3. 28 Reserved

3.29 Survival. All warranties, representations, and indemnifications by the Parties must survive the completion or termination of this Agreement.

3.30 Reserved

3.31 Reserved

3.32 Reserved

3.33 Time is of the Essence. Time of each of the terms, covenants, and conditions of this Agreement is hereby expressly made of the essence.

3.34 Date of Performance. If the date of performance of any obligation or the last day of any time period provided for should fall on a Saturday, Sunday, or holiday for Customer, the obligation will be due and owing, and the time period will expire, on the first day after which is not a Saturday, Sunday or legal City holiday. Except as may otherwise be set forth in this Agreement, any performance provided for herein will be timely made if completed no later than 5:00 p.m. (Chandler time) on the day of performance.

3.35 Third Party Beneficiary. Nothing under this Agreement will be construed to give any rights or benefits in the Agreement to anyone other than Customer and Provider, and all duties

and responsibilities undertaken pursuant to this Agreement will be for the sole and exclusive benefit of Customer and Provider and not for the benefit of any other party.

3.36 Document/Information Release. Documents and materials released to Provider, which are identified by Customer as sensitive and confidential, are the Customer's property. The document/material must be issued by and returned to Customer upon completion of the services under this Agreement. Provider's secondary distribution, disclosure, copying, or duplication in any manner is prohibited without Customer's prior written approval. The document/material must be kept secure at all times. This directive applies to all Customer documents, whether in photographic, printed, or electronic data format.

3.37 Non-Discrimination and Anti-Harassment Laws. Provider must comply with all applicable Customer, state, and federal non-discrimination and anti-harassment laws, rules, and regulations.

3.38 Licenses and Permits. Beginning with the Effective Date and for the full term of this Agreement, Provider must maintain all applicable local, state, and federal licenses and permits required to fully perform Provider's services under this Agreement.

3.39 Reserved 3.40 Emergency Purchases. Customer reserves the rights to purchase from other sources those items, which are required on an emergency basis and cannot be supplied immediately by Provider.

3.41 Non-Exclusive Agreement. This Agreement is for the sole convenience of Customer. Customer reserves the right to obtain like goods or services from another source when necessary.

3.42 Budget Approval Into Next Fiscal Year. This Agreement will commence on the Effective Date and continue in full force and effect until it is terminated or expires in accordance with the provisions of this Agreement. The Parties recognize that the continuation of this Agreement after the close of Customer's fiscal year, which ends on June 30 of each year, is subject to the City Council's approval of a budget that includes an appropriation for this item as an expenditure. Customer does not represent that this budget item will be adopted. This determination is solely made by the City Council.

3.43 Forced Labor of Ethnic Uyghurs Prohibited. By entering into this Agreement, Provider certifies and agrees Provider does not currently use and will not use for the term of this Agreement: (i) the forced labor of ethnic Uyghurs in the People's Republic of China; or (ii) any goods or services produced by the forced labor of ethnic Uyghurs in the People's Republic of China; or (iii) any contractors, subcontractors or suppliers that use the forced labor or any goods or services produced by the forced labor of ethnic Uyghurs in the People's Republic of China.

3.44 Intellectual Property.

3.44.1 Customer Ownership of Project Documents. All work products (electronically or manually generated) including, but not limited to: plans, specifications, cost estimates, tracings, studies, design analyses, original drawings, Computer Aided Drafting and Design (CADD) file diskettes which reflect all final drawings, and other related documents which are prepared in the performance of this Agreement (collectively referred to as "Documents") are to be and remain the property of Customer and are to be delivered to the Project Manager subject to Provider's receipt of final payment therefor.

3.44.2 Provider to Retain Copyrights. The copyrights, patents, trade secrets or other intellectual property rights associated with the ideas, concepts, techniques, inventions, processes or works of authorship developed or created by Provider, its subcontractors or personnel, while performing this Agreement or arising out of the Project shall belong to the Provider.

3.44.3 License to Customer for Reasonable Use. With this Agreement, Provider and its subcontractors hereby grant a license to Customer, its agents, employees, and representatives for an indefinite period of time to reasonably use, make copies, and distribute as appropriate the Documents, works or deliverables developed or created as a result of the Project and this Agreement. This license also includes the making of derivative works.

3.44.4 Documents to Bear Seal. Provider and its subcontractors shall endorse by professional seal all plans, works, and deliverables prepared by each for this Agreement as required by state law

3.45 Access To Customer's Facilities.

3.45.1 Contract Worker Access Controls, Badge and Key Access Requirements. Provider's employees, agents, representatives, or subcontractors who provide services under this Agreement or the Project (collectively "Contract Worker") shall not be allowed to begin work in any Customer facility without: (i) prior completion and the Customer's acceptance of the required background screening; and (ii) when required, the Contract Worker's receipt of a City issued badge. A badge will be issued to a Contract Worker solely for access to the Customer's facility(ies) to which the Contract Worker is assigned. Each Contract Worker who enters a Customer facility must use the badge issued to the Contract Worker.

3.45.2 Badges. After receipt of the badge application, the Contract Worker will proceed to the Badging Office for processing of the badge application and issuance of the badge. customer will not process the badge application until the Contract Worker satisfies the required Background Screening (as defined herein). The Contract Worker shall comply with all requirements and furnish all requested information as requested by the Badging Office. Any and all fees associated with security badging will be assessed in compliance with Chandler City Code §4-22.

3.45.3 Key Access Procedures. If the Contract Worker's services require keyed access to enter a Customer facility(ies), a separate key issue/return form must be completed and submitted by Provider for each key issued.

3.45.4 Stolen or Lost Badges or Keys. Provider shall report lost or stolen badges or keys to Customer immediately. A new badge application or key issue form shall be completed and submitted along with payment of the applicable fees prior to issuance of a new badge or key.

3.45.5 Return of Badges or Keys. All badges and keys are the property of Customer and must be returned to Customer at the Badging Office within one (1) business day of when the Contract Worker's access to a Customer facility is no longer required to furnish the services under this Agreement. Provider shall collect a Contract Worker's badge and key(s) upon the termination of the Contract Worker's employment; when the Contract Worker's services are no longer required at the particular Customer facility(s); or upon termination, cancellation or expiration of this Agreement.

3.45.6 Provider's Default. Provider's default under this Section shall include, but is not limited to the following: (1) Contract Worker gains access to a Customer facility(s) without the proper badge or key; (2) Contract Worker uses a badge or key of another to gain access to a Customer facility; (3) Contract Worker commences services under this Agreement without the proper badge, key or Background Screening; (4) Contract Worker or Provider submits false information or negligently submits wrong information to Customer to obtain a badge, key or applicable Background Screening; or (5) Provider fails to collect and timely return Contract Worker's badge or key upon termination of Contract Worker's employment, reassignment of Contract Worker to another Customer facility or upon the expiration, cancellation or termination of this Agreement. Provider acknowledges and agrees that the access control, badge and key requirements in this Section are necessary to preserve and protect public health, safety and welfare. Accordingly, Provider agrees to properly cure any default under this Section within three (3) business days from the date notice of default is sent by the Customer. The Parties agree that Provider's failure to properly cure any default under this Section shall constitute a breach of this Section. In addition to any other remedy available to Customer at law or in equity, Provider shall be liable for and shall pay to Customer the sum of one thousand dollars ($1,000.00) for each breach by Provider of this Section. The Parties further agree that the sum fixed above is reasonable and approximates the actual or anticipated loss to Customer at the time and making of this Agreement in the event that Provider breaches this Section. Further, the Parties expressly acknowledge and agree to the fixed sum set forth above because of the difficulty of proving Customer's actual damages in the event that Provider breaches this Section. The Parties further agree that three (3) breaches by Provider of this Section arising out of any default within a consecutive period of three (3) months or three (3) breaches by Provider of this Section arising out of the same default within a period of twelve (12) consecutive months shall constitute a material breach of this Agreement by Provider and Customer expressly reserves all of its rights, remedies and interests under this Agreement, at law and in equity including, but not limited to, termination of this Agreement.

3.46 Background Screening.

3.46.1 Contract Worker Background Screening. Provider agrees that all Contract Workers (defined above) that Provider furnishes to Customer pursuant to this Agreement shall be subject to background and security checks and screening (collectively Background Screening) at Provider's sole cost and expense as set forth in this Section. The Background Screening provided by Provider shall comply with all applicable laws, rules and regulations. Provider further agrees

that the Background Screening required in this Section is necessary to preserve and protect public health, safety and welfare. The Background Screening requirements set forth in this Section are the minimum requirements for this Agreement. Customer in no way warrants that these minimum requirements are sufficient to protect Provider from any liabilities that may arise out of Provider's services under this Agreement or Provider's failure to comply with this Section. Therefore, in addition to the specific measures set forth below, Provider and its Contract Workers shall take such other reasonable, prudent and necessary measures to further preserve and protect public health, safety and welfare when providing services under this Agreement.

3.46.2 Background Screening Requirements and Criteria. Provider agrees that it will verify legal Arizona worker status as required by Arizona Revised Statutes (A.RS.) §41-4401. Provider further agrees that it will conduct a background check for real identity/legal name on all Contract Workers prior to proposing the Contract Worker to Customer.

3.46.3 Additional Customer Rights Regarding Security Inquiries. In addition to the foregoing, Customer reserves the right but not the obligations to: (1) have a Contract Worker be required to provide fingerprints and execute such other documentation as may be necessary to obtain criminal justice information pursuant to A.R.S. § 41-1750(G) (4) or Chandler City Code § 4-22; (2) act on newly acquired information whether or not such information should have been previously discovered; (3) unilaterally change its standards and criteria relative to the acceptability of Contract Workers; and (4) object, at any time and for any reason, to a Contract Worker performing work (including supervision and oversight) under this Agreement.

3.46.4 Provider Certification. By executing this Agreement, Provider certifies and warrants that Provider has read the Background Screening requirements and criteria in this Section, understands them and that all Background Screening information furnished to Customer is accurate and current. Also, by executing this Agreement, Provider further certifies and warrants that Provider has satisfied all such Background Screening requirements as required. A Contract Worker rejected for work under this Agreement shall not be proposed to perform work under other Customer contracts or engagements without Customer's prior written approval.

3.46.5 Terms of This Section Applicable to all of Provider's Contracts and Subcontracts. Provider shall include the terms of this Section for Contract Worker Background Screening in all contracts and subcontracts for services furnished under this Agreement including, but not limited to, supervision and oversight services.

3.46.6 Materiality of Background Screening Requirements: Indemnity. The Background Screening requirements of this Section are material to Customer's entry into this Agreement and any breach of this Section by Provider shall be deemed a material breach of this Agreement. In addition to the indemnity provisions set forth in Section III, Section 3.6, Indemnification Clause of the General Conditions, Provider shall defend, indemnify and hold harmless Customer for any and all Claims arising out of this Background Screening Section including, but not limited to, the disqualification of a Contract Worker by Provider or the Provider's failure to satisfy this Section.

3.46.7 Continuing Duty: Audit. Provider's obligations and requirements that Contract Workers satisfy this Background Screening Section shall continue throughout the entire term of

this Agreement. Provider shall notify Customer immediately of any change to a Background Screening of a Contract Worker previously approved by Customer. Provider shall maintain all records and documents related to all Background Screenings and Customer reserves the right to audit Provider's compliance with this Section pursuant to Section III, Section 3.2, "Records/Audit" of the General Conditions.

Remainder of page left blank intentionally

Appendix C
Work Order #___
[Project Description]

PURPOSE:
The purpose of this Work Order is to:

1. Authorize Provider to proceed with Work Order #__ noted herein.
2. Direct Provider to contract directly with all subcontractors as necessary.
3. Define the Scope of Work for the ECM.

FULLY FUND THE PROJECT:
The amount of the Work Order #__ ECM Project is $_____ (_____ and no/100 Dollars).

SCOPE OF WORK:
The Scope of Work is defined in Exhibit A, attached hereto.

INCORPORATION OF ALL DOCUMENTS:
The following documents are hereby incorporated, by reference, into this ECM Work Order.

Exhibit A:	Scope of Work that will be provided by Ameresco, Inc. for this Work Order
Exhibit B:	Solar Production Guarantee
Exhibit C:	Operations and Maintenance Plan
Exhibit D:	Measurement and Verification Plan
MESA:	The Ameresco, Inc./City of Chandler Master Energy Services Agreement, dated _____, 2025.

These Exhibits and their attached Schedules apply to the _____ Project to be provided to the City of Chandler under this Work Order and are considered a part of this Work Order.

EXECUTION OF WORK ORDER:

Agreed and accepted.

_____	_____
Ameresco, Inc.	City of Chandler
Executive Vice President	_____

Appendix D
Form Notice to Proceed Work Order No.

[PLACE ON CUSTOMER LETTERHEAD]

Mr. Ron Haxton
Senior Vice President
Ameresco, Inc.
2355 East Camelback Road, Suite 410
Phoenix, AZ 85016

SUBJECT: NOTICE TO PROCEED

Dear Mr. Haxton:

In accordance with Section 5 of the Master Energy Services Agreement (the "MESA") dated as of _____ __, 2025 and the related Work Order dated as of _____, 20___, by and between the City of Chandler ("Customer") and Ameresco, Inc. ("Ameresco"), Customer hereby submits to Ameresco this Notice to Proceed in relation to the Scope of Services as defined in the MESA and the Work Order.

Sincerely,

City of Chandler

By:_____
Duly Authorized Signatory
Name:_____
Title:_____
Date:_____

Appendix E
Form of Substantial Completion Certificate

[Date]

To: City of Chandler

Re: Work Order # ___

Reference – [Note: If a Substantial Completion in part – list the ECMs and related units as an Attachment; If Substantial Completion in whole – list the Applicable ECM or ECMs]

Reference is made to that certain Work Order under Energy Services Agreement, dated as of _____, between City of Chandler ("Customer") and Ameresco, Inc. ("Provider"), including all schedules, attachments, appendices and exhibits thereto (such agreement and any such schedules, attachments, appendices and/or exhibits, as amended, restated modified and/or supplemented from time to time, the "MESA"). Initially-capitalized terms used in this Substantial Completion Certificate and not otherwise defined have the meanings ascribed thereto in the MESA.

This is to certify that on this ____ day of _____, _____, [that certain portion of ECMs set forth on **Attachment A** hereto] [the above referenced ECM] and related Equipment (i) have been installed in accordance with the specifications in the MESA (excepting the punchlist items identified herein), (ii) that such ECM and related Equipment have been commissioned by Provider in accordance with the MESA and is operating as intended and (iii) only certain punchlist items remain to be completed in connection with the implementation of the ECM. Such punchlist items are listed on **Exhibit A** attached to this Substantial Completion Certificate. Provider will complete or correct the punch list items within the timeframes set forth on **Exhibit A** prior to delivering its Substantial Completion Certificate.

AMERESCO, INC.

NOT FOR EXECUTION

By:_____

Name:_____

Title:_____

[ATTACHMENT A: SUBSTANTIALLY COMPLETED IN PART]

ATTACHMENT A: PUNCHLIST

[To be attached – list of punchlist items and times for completion.]

Appendix F
Form of Final Delivery and Acceptance Certificate

[Date]

City of Chandler

To: _____

Work Order No. _____

Reference is made to that certain Work Order under Energy Services Agreement, dated as of _____, between City of Chandler ("Customer") and Ameresco, Inc. ("Provider"), including all schedules, attachments, appendices and exhibits thereto (such agreement and any such schedules, attachments, appendices and/or exhibits, as amended, restated modified and/or supplemented from time to time, the "MESA"). Initially capitalized terms used in this Final Delivery and Acceptance Certificate and not otherwise defined have the meanings ascribed thereto in the MESA.

Pursuant to the MESA, this is to certify that as of this ____ day of _____, _____ (the "Commencement Date") the conditions for final acceptance by Customer of [the ECMs and related Equipment specified in the MESA] have been satisfied and without waiving any of its rights or remedies under the MESA with respect to such Equipment and ECM or otherwise, the Customer accepts such ECM and related Equipment. Customer acknowledges that the Commencement Date stated above shall be the Commencement Date with respect to such ECM (as defined in the MESA).

_____

NOT FOR EXECUTION

By:_____

Name:_____

Title:_____

City Council Memorandum **Government Relations & Transportation**
Policy Memo No.

Date: June 12, 2025
To: Mayor and Council
Thru: Joshua H. Wright, City Manager
Ryan Peters, Strategic Initiatives Director
From: Raslyn Sleet, Grants Program Manager
Subject: Resolution No. 5909 Authorizing Submittal of an Indian Gaming Revenue Sharing Grant Application from St. Joseph The Worker to Ak-Chin Indian Community

---

Proposed Motion:

Move City Council pass and adopt Resolution No. 5909 authorizing the submittal of a $25,000 pass-through Indian Gaming Revenue Sharing Grant Application from St. Joseph The Worker for its Workforce Development Program.

Background:

In 2002, a coalition of Arizona Indian tribes successfully obtained passage of Proposition 202, whereby the state was authorized to enter into gaming compacts with individual tribes. The compacts allowed for expanded tribal use of games and gaming devices as well as pari-mutuel wagering. In exchange, tribes agreed to share a portion of gaming revenues with the state and its counties, cities and towns. The law provides that 12 percent of tribal contributions pursuant to the compacts shall be contributed by Indian tribes to cities, towns and counties for government services that benefit the general public, including public safety, mitigation of gaming impacts and promotion of commerce and economic development. The Indian tribes have some discretion over how these contributions will be made, and each tribe has different application procedures that need to be observed to obtain funding. Additionally, it has become a common practice for cities to submit applications for such contributions on behalf of 501(c)(3) nonprofit organizations that are deemed to be providing government services that benefit the general public.

The City of Chandler for many years has submitted pass-through grant applications for numerous nonprofit organizations based on the interests of the city and its residents. The pass-through grant applicant must be a 501(c)(3) nonprofit organization with some nexus with the City and its residents.

St. Joseph the Worker (The Worker) provides pathways to self-sufficiency for disadvantaged populations with employment as the foundation. This achieve this goal by providing support, resources, and tools necessary for becoming employable. Their Workforce Development Program plays a crucial role in preventing homelessness by addressing a variety of barriers that many individuals experience on their journey to employment. The program focuses on connecting clients to jobs paying at least $17/hour, offering benefits, and providing opportunities for growth within the company. This approach paves a pathway for individuals on the verge of homelessness to personal and financial stability.

The Workforce Development Program directly serves disadvantaged individuals in Chandler and throughout Maricopa County with the tools and resources necessary to secure quality employment opportunities. Last fiscal year (July 1, 2023-June 30, 2024), the organization served 211 Chandler residents and employed 122. These clients earned an average wage of $17.99 per hour through their respective employers, with 86% of individuals receiving benefits. This fiscal year, Chandler residents are averaging wages of $19.45 per hour, with 95% receiving employer-provided benefits. This growth is due to an increased connection with local businesses that offer employees a livable wage and access to benefits.

Should grant funds be awarded, the organization's goal is to increase the average wages earned by their clients through employer partners by 10% and enhance their access to employer-provided benefits by strengthening partnerships with local businesses that offer livable wages and benefits.

Financial Implications:

The City, by virtue of this Resolution, is acting as a financial conduit between the Ak-Chin Indian Community and St. Joseph the Worker, and is in no way agreeing or obligating itself to monitor or report on the expenditure of any grant funding distributed to or on behalf of St. Joseph the Worker, guarantee the accuracy, completeness or truthfulness of the information set forth in the application materials prepared by the St. Joseph the Worker, supervise or take any responsibility regarding the actions or activities undertaken by the St. Joseph the Worker, or represent that St. Joseph the Worker, either has, or does not have, other sources of funding relating to the intended use of grant funding set forth in

this Resolution, including funding from grant applications made on behalf of St. Joseph the Worker, to other Indian tribes. The City has up to 10 days to send the funds once received.

Attachments

St. Joseph the Worker Grant Signed Application 2025

Resolution 5909 - St Joseph the Worker - Ak-Chin Indian Community

Proposition 202 Tribal Gaming
2025 Application Sponsorship/Support Form
Ak-Chin Indian Community

Name of the Tribal Community: Ak-Chin Indian Community

Due date of the application to the Tribal community: July 2025

Name of the Non-profit: St. Joseph the Woker (The Worker)

Contact person/title: Brittany Bunce, Grant Writer

Email address: bbunce@sjwjobs.org

Address: 382 E Palm Lane, Suite 150, Phoenix, AZ 85004

Project name: Workforce Development

Amount being requested: $25,000

Project summary: With a generous $25,000 grant, The Worker could assist up to 500 job seekers in securing full-time employment and promoting a life of self-sufficiency. To secure quality employment, clients require a range of resources tailored to their unique needs and job industries, such as work clothes, shoes, transportation assistance, food handler cards, and MVD vouchers, with an average cost of $50-$150 per person for a full suite of services.

Beneficiaries: Disadvantaged populations – low income, previously incarcerated, unhoused, unemployed, underemployed, homeless, marginalized communities

Supervisor District: Maricopa 2 and Maricopa 3 (office locations)

The undersigns hereby certifies they have read and comply with the responsibilities set forth in the PINAL COUNTY TRIBAL GAMING GRANT PROGRAM

Request for fiscal agent/pass through support documentation.

Carrie Masters

Chief Executive Officer

St. Joseph the Worker



_____

Director name and signature

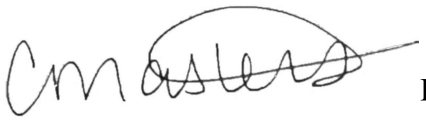
2025 Ak-Chin Indian Community Grant Application Cover Sheet

Name of Applicant: St. Joseph the Worker	Applicant is a: □ City/Town/County (circle) x Other: 501(c)(3)
Mayor/Supervisor/Chairman/President: Carrie Masters, Chief Executive Officer	
Contact Person and Title: Brittany Bunce, Grant Writer	
Applicant Address (administrative office): 382 E Palm Lane, Suite 150	
City: Phoenix, AZ	Zip Code: 85004
Applicant Mailing Address (if different): N/A	
City:	Zip Code:
Phone Number: 602-349-4522	Fax Number: N/A
E-mail Address: bbunce@sjwjobs.org	
Fiscal Agent for any Applicant that is not a City, Town, or County (*Special Taxing Districts/Fire Districts must have a Fiscal Agent)*	
Contact Person: Dawn Lang, Deputy City Manager - CFO	
City/Town/County Mailing Address: Mail Stop 605, P.O. Box 4008	
City: Chandler, AZ	Zip Code: 85244-4008
Phone Number: 480-782-2258	Fax Number: N/A
E-mail Address: dawn.lang@chandleraz.gov	

Program or Project Name: Workforce Development
P urpose (Check all that apply) ☐ education ☐ public safety ☐ health ☐ environment ☐ promotion of commerce ☒ economic and community development
Purpose of Grant: Workforce Development provides pathways to self-sufficiency for disadvantaged populations by providing the support, resources, and tools necessary for becoming employable.
Beginning and Ending Date of Program or Project: 07/01/25 to 06/30/26
Amount Requested: $25,000 Total Cost: $2,172,054.71
Geographic Area Served: Maricopa County (primarily) and Pinal County

By the execution of this Grant Application the undersigned agrees that the information contained in this Application is true, to the best of the Applicant's knowledge. The Applicant shall notify the Community if any information in this Application changes.

Signature:

For the Applicant:  Date: 4/15/2025

Typed/Printed Name and Title: Carrie Masters, Chief Executive Officer

For the Fiscal Agent: _____

Date:_____ (If applicable)

Typed/Printed Name and Title: Dawn Lang, Deputy City Manager - CFO

Ak-Chin Indian Community
2025 Prop 202 Grant Application
St. Joseph the Worker

A. Purpose of Grant.

1. Describe the proposed program, project, or purchase (collectively, the "Project"). This description should identify the needs/issues the Project.

According to Arizona's "Homelessness Trends Report," for every 10 people finding housing, there were 19 new individuals experiencing homelessness (azmag.gov). At St. Joseph the Worker (The Worker), we provide pathways to self-sufficiency for disadvantaged populations, with employment as the foundation of all we do. We do this by providing support, resources, and tools necessary for becoming employable. Our Workforce Development Program plays a crucial role in preventing homelessness by addressing a variety of barriers that many individuals experience on their journey to employment. Workforce Development's focus on connecting clients to jobs paying at least $17+/hour, offering benefits, and providing opportunities for growth within the company paves a pathway for individuals on the verge of homelessness to personal and financial stability.

When a client is looking for a job, a Workforce Expert will provide them with custom job leads in an industry of their choosing, resume writing, mock interviews, transportation assistance, and clothing for interviews. Once a client secures employment, we continue to support them by offering transportation assistance to and from work, uniform assistance and work shoes, and any necessary certifications and tools. By providing comprehensive support at every stage of the employment journey, the Workforce Development Program empowers clients to achieve lasting self-sufficiency.

2. Identify the target population that will be served by the Project. (Who will benefit? How many will be served? Is there a targeted geographic location? Etc.)

The Workforce Development Program provides employment assistance to any resident living in cities and towns located throughout Maricopa and Pinal County, regardless of their background or any other potential barriers they might have. The Worker operates out of two offices: one in central Phoenix and another in Mesa, Arizona, helping any individual needing our assistance.

Last fiscal year (July 1, 2023-June 30, 2024), the Workforce Development Program served 6,984 clients and successfully employed 4,380 individuals in jobs offering an average of $17.88/hour, with 82% receiving benefits from their employers. With this generous funding, we will be able to provide employment services and resources to up to 500 individuals on their journey to quality, long-term employment.

3. Describe the Project goals and objectives and outline a plan to meet these goals.

Achieving a livable wage is essential for financial stability, housing, meeting basic needs, and building a foundation for long-term success. During the upcoming fiscal year, we plan to increase the average wages earned by our clients through employer partners by 10% and enhance their access to employer-provided benefits by strengthening partnerships with local businesses that offer livable wages and benefits. Specifically, we plan to raise the average wage earned by clients through these employer partners from $19.25/hour to $21.18/hour, with 86% of clients receiving benefits. By focusing on increasing wages and access to benefits, we

provide clients with a stable path to long-term financial independence, physical well-being, and economic security, empowering underserved populations to break the cycle of poverty.

A crucial area for connecting clients to livable wages and benefits is our collaboration with local employers. We foster strong relationships with community businesses, who play a vital role in our mission by providing long-term direct-hire employment opportunities for our clients. These employers offer our clients jobs making at least $17+/hour, benefits, and opportunities for growth within the company.

In the long term, The Worker aims to create lasting change by breaking cycles of poverty and homelessness in our community and empowering individuals to achieve self-sufficiency. Through access to stable jobs with livable wages and healthcare benefits, we hope to provide individuals with a life that strengthens their families and establishes a solid foundation for long-term success.

4. Provide a timetable for implementation of the Project.

The Workforce Development Program is an ongoing initiative that started in 1988. The Worker follows a fiscal year (FY) calendar that begins on July 1 and ends on June 30. We will utilize funding by the end of the upcoming FY, spanning July 1, 2025, to June 30, 2026.

B. Resources.

1. Identify current funding sources for the Project and characterize each funding source listed as either a one-time-only or long-term funding source.

Most of our funding sources require an annual application or conversation to secure. The major donors for our Workforce Development for this fiscal year include the following:

DFIU Family Foundation - $150,000; Target Corporation - $75,000; The Moreno Family Foundation - $50,000; PNC Foundation - $25,000; Arizona Private Charitable Foundation - $25,000; Salt River Project (SRP) - $25,000; Power Design, Inc. - $25,000; Google - $25,000; The Burton Family Foundation - $25,000; Nationwide Foundation - $20,000; The Roman Catholic Diocese - $20,000; City of Tempe - $18,097; Donald D. Lynch Family Foundation - $17,000; APS - $15,000; McDowell Mountain Music Festival - $15,000; Maureen and Paul Rubeli Foundation - $10,000; Edward Jones - $18,500; Margaret T. Morris Foundation - $10,000; Pacific Premier Bank - $10,000; The Arizona Republic's Season for Sharing - $7,500; Tempe Diablos Charities - $7,500; Dignity Health - $5,000; Four Peaks Rotary Foundation - $4,000; Snell & Wilmer - $4,000

2. Identify other organizations or partners that are participating in or contributing to the Project, but which are not funding sources, and describe their roles or contributions.

The Worker collaborates with a diverse range of nonprofits to provide holistic support, addressing everything from mental wellness and addiction recovery to housing and ID replacement, ultimately helping individuals prepare for the workforce. The Worker is

committed to working with all agencies that need our employment services. Some of the nonprofits we collaborate with include the Homeless ID Project, Televerde Foundation, Save the Family, Saving Amy, and St. Vincent de Paul. By addressing employment barriers and providing comprehensive support, we ensure that Workforce Development clients have all the resources they need to help break the cycle of poverty, offering a path to long-term stability and self-sufficiency.

3. **Define the Project as a new or continuing project or a purchase. Provide information about how the Project will be sustained or the purchase will be maintained after the grant funding is exhausted.**

Workforce Development is a dynamic, ongoing program that requires annual funding to sustain its impactful initiatives. Our revenue stream is currently a mix of government, corporate, foundation, individual giving, and event revenue. To ensure the program's sustainability, we have developed a comprehensive fundraising plan that includes innovative strategies and community outreach efforts. By raising awareness and engaging with the community, we aim to build a robust support network, fostering long-term financial stability and enhancing the program's reach and effectiveness.

4. **If the Applicant organization has requested funding from any other Arizona tribe, please list:**
    a. **Pending requests made within the last eighteen (18) months, including the name of the tribe to which the request was made and a brief summary of the project for which a grant was requested.**

Requests planned from other Arizona tribes:

The Worker plans to submit a grant request to the Fort McDowell Yavapai Nation in May of 2025 for our Workforce Development Program. We are requesting funding to assist 200 individuals by providing a comprehensive range of resources, including access to job leads offering wages of at least $17+/hour, resume writing assistance, and mock interview preparation. Additionally, this funding will help participants acquire essential client work items such as tools, work uniforms and shoes, and other preemployment items. It will also cover transportation costs to and from interviews, as well as for the initial weeks on the job, helping bridge the financial gap until the first paycheck arrives.

    b. **Funded requests made in the last five (5) years, including the name of the tribe that awarded the funding, a brief summary of the project for which the funding was awarded, and the amount of the funding received.**

Gila River Indian Community – $10,000 in 2020 for our Workforce Development Program (formerly known as Employment Without Barriers). This funding provided our clients with resources such as transportation assistance (bus passes and gas cards) in addition to personnel expenses such as salaries and wages.

c. Reports. Approved grantees must report back to the Community about the use of all grants. Outline how your organization will account for and manage the funding if selected. Describe how Project progress and results will be tracked and documented.

The Worker evaluates success with the Workforce Development Program primarily by the number of individuals who receive job search assistance and, crucially, by the number who successfully secure employment. While this provides a snapshot of progress, we also assess starting wages and benefits offered, which are indicative of economic self-sufficiency and overall well-being. We use the Salesforce platform to track client data. This data is captured through both client self-disclosure and verifying income via offer letters or paystubs. Through this data capture, The Worker can identify areas of opportunity within programs to better assist the client on their job search journey.

d. Budget. Provide a budget, including justification, that supports the request in the Application. Provide an estimated timeline for when funds will be expended.

Workforce Development Budget	Expenses	Amount Requested from Ak-Chin Indian Community
Salaries and Wages	**$1,090,060.19**	
Taxes and Benefits	**$289,670.44**	
Administration	**$109,348.21**	
Direct Client Support	**$206,034.89**	**$2,000.00**
Client Work Essentials	**$280,000.00**	**$23,000.00**
In-Kind Client Goods Expense	**$114,000.00**	
Additional Client Support/Resources	**$82,940.98**	
Total Budget	**$2,172,054.71**	**$25,000**

Direct Client Support includes bus tickets and gas cards for clients. Client Work Essentials include tools, uniforms, shoes/boots, certifications, and other preemployment items. Funds will be expended by the end of our upcoming fiscal year, spanning from July 1, 2025 to June 30, 2026.

e. Additional information. Please provide any additional information about the Project or the Applicant organization that the Ak-Chin Council should know when considering the Application.

On behalf of our team, Board of Directors, and the clients we serve, I sincerely thank you for considering our request.

Sincerely,



Carrie Masters

Chief Executive Officer

St. Joseph the Worker

Internal Revenue Service

Department of the Treasury

District
Director

P.O. Box 2350, Los Angeles, Calif. 90053

Person to Contact: J. Teague

Telephone Number: (213)894-2336

Refer Reply to: EO(0425)96

Date: July 11, 1996

St. Joseph The Worker
213 S. 11th Avenue
Phoenix, AZ. 85007-3132

EIN: 86-0600437

Dear Taxpayer:

This letter is in response to your request for a copy of the determination letter for the above named organization.

Our records indicate this organization was recognized to be exempt from Federal income tax under Internal Revenue Code Section 501(c)(03). Group exemption number 0928 has been assigned to the organization and its subordinates. The determination letter issued in March 1946 continues to be in effect.

If you need further assistance, please contact our office at the above address or telephone number.

Sincerely

J. Teague

J. Teague
Disclosure Assistant

ALABAMA · COLORADO · ARIZONA · MAINE · TEXAS · UTAH · ALASKA · IOWA · LOUISIANA · WISCONSIN · TENNESSEE · IDAHO · NEW HAMPSHIRE · NEW JERSEY · NEW MEXICO · CONNECTICUT · FLORIDA · MASSACHUSETTS · GEORGIA · DELAWARE · ILLINOIS · KANSAS · NORTH CAROLINA · OREGON · NEBRASKA · KENTUCKY · INDIANA · OKLAHOMA · RHODE ISLAND · MONTANA · HAWAII · WASHINGTON · VIRGINIA · VERMONT · WYOMING · OHIO · CALIFORNIA · MICHIGAN · MINNESOTA · MISSISSIPPI · MISSOURI · WEST VIRGINIA · NEW YORK · NEVADA · NORTH DAKOTA · PENNSYLVANIA · SOUTH CAROLINA · SOUTH DAKOTA · MARYLAND · ARKANSAS

1817 2019



The Official Catholic Directory

Anno Domini 2019

Published Annually by
P. J. Kenedy & Sons

Email: jazzeline.perez@gmail.com; Web: www.cscarizona.org. 633 N. 54th St., 85018. Ms. Jazzeline Perez, Pres.; Andrew Theis.

Christ Child Society, 4633 N. 54th St., 85018-1904. Tel: 602-840-5066. Johanna Warner, Pres.; Sharon Casey, Treas.

Cursillo Movement, 4633 N. 54th St., 85018. Tel: 602-840-5066, Ext. 42; Email: info@phoenixcursillo.com; Web: www.phoenixcursillo.com. Dr. Dave Zeman, Dir.; Rev. Msgr. Michael O'Grady, Spiritual Dir., (Retired); Deacons Bob Carey, Assoc. Spiritual Dir.; Marvin Hernandez, Assoc. Spiritual Dir.

**Diocesan Council for the Society of St. Vincent De Paul*, P.O. Box 13600, 85002. Tel: 602-254-3338; Tel: 602-266-4673; Fax: 602-261-6829; Web: www.stvincentdepaul.net. Stephen J. Zabilski, Exec. Dir.

Foundation for Senior Living aka FSL, 1201 E. Thomas Rd., 85014. Tel: 602-285-1800; Email: info@fsl.org. Tom Egan, Pres.

Affordable Services for Seniors, Inc., 1201 E. Thomas Rd., 85014. Tel: 602-285-1800; Email: shastings@fsl.org. Tom Egan, Pres.

Foundation for Senior Adult Living, Inc., Tel: 602-285-1800; Fax: 602-285-1838; Email: info@fsl.org. Sweetwater Gardens (Apartments for the Handicapped), Phoenix; Kingman Heights Apartments, Kingman.

FSL Management, Tel: 602-285-1800; Fax: 602-285-1838; Email: info@fsl.org.

FSL Programs, Tel: 602-285-1800; Fax: 602-285-1838; Email: ainiguez@fsl.org; Email: info@fsl.org. Adult Day Health Care Centers; In-Home Care Services; Home Safety & Repair Program; Community Action Programs/ Senior Centers; Adult Foster Care; Oasis (Older Adult Service & Information System); Pathways Program (Resources and Referral-Care Management).

FSL Real Estate Services, Tel: 602-285-1800; Fax: 602-285-1838; Email: shastings@fsl.org. Mr. Steve Hastings.

FSL Rural Development, Tel: 602-285-1800; Fax: 602-285-1838; Email: jgreene@fsl.org. Becket House Apartments, Lake Havasu City; Vianney Villas Apartments, Avondale; Padua Hills Apartments, Wickenburg; St. Agnes Apartments, Williams, Amy Neal Retirement Center, Kingman.

FSL Home Improvements, 1201 E. Thomas Rd., 85014. Tel: 602-285-1800; Fax: 602-285-1838; Email: kmartin@fsl.org. Katie Martin, Dir.

FSL Pathways, 1201 E. Thomas Rd., 85014. Tel: 602-285-1800; Fax: 602-285-1838; Email: info@fsl.org. Carrie Smith, Contact Person. Assisted Group Living Program (11 Houses), Phoenix.

St. Clair Senior Living, 1201 E. Thomas Rd., 85014. Tel: 602-285-1800; Email: shastings@fsl.org.

FSL Christopher Properties, 1201 E. Thomas Rd., 85014. Tel: 602-285-0505, Ext. 181; Email: ainiguez@fsl.org. Mr. Steve Hastings, Dir.

St. Joseph the Worker (Job Service) 1125 W. Jackson St., 85007. Tel: 602-417-9854; Fax: 602-258-4940; Email: info@sjwjobs.org; Web: www.sjwjobs.org. P.O. Box 13503, 85002. Lieryn Jacobs, Board Chm.; Brent Downs, Exec. Dir.; Karl Johnson, Treas.; Joe McGovern, Brd. Sec. To assist homeless, low-income, and other disadvantaged individuals in their efforts to become self-sufficient through quality employment.

Saint Mary's Scholarship & Benefit Fund, 2525 N. Third St., 85004. Tel: 602-251-2506; Fax: 602-251-2595; Email: pmadigan@smknights.org; Web: www.smknights.org. Amy Lawrence, Dir. Development & Finance; Kevin Muir, Prin.

CHANDLER. *The Catholic Singles Ministry, Inc.*, 4589 W. Ivanhoe St., Chandler, 85226. Tel: 480-298-5158; Email: kmp.email@att.net; Web: www.catholicsinglesministry.org. Karina Penaranda, Contact Person.

GOODYEAR. *St. John Vianney School Development Fund*, 539 La Pasada Blvd., Goodyear, 85338. Tel: 623-932-3313; Fax: 623-932-1896; Email: eesquivel@sjvaz.net; Email: business@sjvaz.net; Web: www.sjvaz.net. Rev. Thomas J. Eckert, C.S.C., Pres.

MESA. **Life Teen, Inc.*, 2222 S. Dobson Rd., Ste. 601, Mesa, 85202. Tel: 480-820-7001; Fax: 480-820-8653; Email: jraus@lifeteen.com; Web: www.catholicyouthministry.com. Randy Raus, Pres. & CEO.

SCOTTSDALE. **Franciscan Friars of Arizona at the Franciscan Renewal Center*, 5802 E. Lincoln Dr., Scottsdale, 85253. Tel: 480-948-7460; Fax: 480-948-2325; Email: casa@thecasa.org. Charles Brown, Gen. Mgr.

SUN CITY. *Magnificat Phoenix Chapter*, 7203 W. Paradise Ln., Peoria, 85383. Tel: 623-979-9780; Email: aa-ok@cox.net; Email: azmtbriwal@gmail.com; Web: aa-ok0.wixsite.com/magnificat-arizona. 13611 N. 98th Ave. "G", Sun City, 85351. Laurie Walsh, Coord.; Mrs. Maureen Kight, Co-Coord.

TEMPE. **City of the Lord*, 711 W. University Dr., Tempe, 85281-3411. Tel: 480-968-5990; Fax: 480-921-9175; Email: phoenixbranch@cityofthelord.org; Web: www.cityofthelord.org. Peter Poppleton, Overall Coord.

**NPH USA*, 8925 E. Pima Center Pkwy., Ste. 145, Scottsdale, 85258-4407. Belinda Roda, Southwest Develop. Mgr. Total Staff 3; Total Assisted 3,471.

RELIGIOUS INSTITUTES OF MEN REPRESENTED IN THE DIOCESE

For further details refer to the corresponding bracketed number in the Religious Institutes of Men or Women section.

[]—*Apostles of Jesus* (Nairobi, Kenya, Africa)—A.J.

[0200]—*Benedictine Monks*—O.S.B.

[0600]—*Brothers of the Congregation of Holy Cross*—C.S.C.

[0400]—*Canons Regular of the Order of the Holy Cross*—O.S.C.

[0270]—*Carmelite Fathers and Brothers* (Prov. of Most Pure Heart of Mary)—O.Carm.

[0340]—*Cistercian Abbey*—O.Cist.

[0360]—*Claretian Missionaries*—C.M.F.

[0650]—*Congregation of the Holy Spirit*—C.S.Sp.

[1330]—*Congregation of the Mission Western Province*—C.M.

[]—*Disciples of Hope*—D.S.

[0520]—*Franciscan Friars* (Prov. of Santa Barbara; USA, Mexico, Venezuela)—O.F.M.

[]—*Franciscan Friars of the Holy Spirit*.

[0685]—*Institute of the Incarnate Word*—I.V.E.

[0690]—*Jesuit Fathers and Brothers* (California Prov.)—S.J.

[0800]—*Mary Knoll Missionaries*—M.M.

[]—*Miles Jesu*—M.J.

[0830]—*Mill Hill Missionaries*—M.H.M.

[0910]—*Oblates of Mary Immaculate*—O.M.I.

[0430]—*Order of Preachers (Dominicans)* (Canada)—O.P.

[1040]—*Piarist Fathers*—Sch.P.

[1065]—*Priestly Fraternity of St. Peter*—F.S.S.P.

[0610]—*Priests of the Congregation of Holy Cross*—C.S.C.

[1260]—*Society of Christ*—S.Ch.

[1200]—*Society of the Divine Savior* (North American Prov.)—S.D.S.

[0420]—*Society of the Divine Word*—S.V.D.

[0975]—*Society of Our Lady of the Most Holy Trinity*—S.O.L.T.

[1060]—*Society of the Precious Blood*—C.PP.S.

[]—*Via Christi* (Nigeria)—V.C.

RELIGIOUS INSTITUTES OF WOMEN REPRESENTED IN THE DIOCESE

[]—*Carmelite Sisters of St. Teresa*—C.S.S.T.

[2715]—*The Congregation of Missionary Sisters of Christ the King for Polish Immigrants* (Poznan, Poland; Chicago, IL)—M.Chr.

[3710]—*Congregation of the Sisters of St. Agnes* (Fond du Lac, WI)—C.S.A.

[1710]—*Congregation of the Third Order of St. Francis of Mary Immaculate* (Joliet, IL)—O.S.F.

[0720]—*Consolata Missionary Sisters* (Belmont, MI)—M.C.

[0760]—*Daughters of Charity* (Los Altos Hills, CA)—D.C.

[1070-13]—*Dominican Sisters* (Adrian, MI)—O.P.

[]—*Dominican Sisters of Mary Mother of the Eucharist* (Ann Arbor, MI)—O.P.

[1070-07]—*Dominican Sisters of St. Cecilia* (Nashville, TN)—O.P.

[1230]—*Franciscan Sisters of Christian Charity* (Manitowoc, WI)—O.S.F.

[2370]—*Institute of the Blessed Virgin Mary (Loretto Sisters)* (Prov. Wheaton, IL)—I.B.V.M.

[]—*La Sierras del Plan de Dios*—S.P.D.

[]—*Lovers of the Cross of Saigon*—L.H.C.

[2740]—*Maryknoll Sisters of St. Dominic* (Maryknoll, NY)—M.M.

[]—*Missionarias Carmelitas de Santa Teresa del Nino Jesus* (Puebla, Mexico)—M.C.S.T.N.J.

[2710]—*Missionaries of Charity* (Calcutta, India; Pacifica, CA)—M.C.

[3160]—*Parish Visitors of Mary Immaculate* (Monroe, NY)—P.V.M.I.

[3210]—*Poor Clares of Perpetual Adoration* (Tonopah, AZ)—P.C.P.A.

[]—*Sisters of the Sacred Heart*—S.H.S.

[2970]—*School Sisters of Notre Dame* (Central Pacific Province)—S.S.N.D.

[1680]—*School Sisters of St. Francis* (Milwaukee, WI)—S.S.S.F.

[3590]—*Servants of Mary Servite Sisters* (Lady Smith, WI)—O.S.M.

[]—*Servants of the Lord and the Virgin of Matura* (New York, NY)—S.S.V.M.

[0570]—*Sisters of Charity of Seton Hill* (Greensburg, PA)—S.C.

[0430]—*Sisters of Charity of the B.V.M.* (Dubuque, IA)—B.V.M.

[2519]—*Sisters of Mercy of Alma Michigan* (Alma, MI)—R.S.M.

[2575]—*Sisters of Mercy of the Americas* (Omaha, NE)—R.S.M.

[3000]—*Sisters of Notre Dame de Namur* (Cincinnati, OH)—S.N.D.deN.

[1540]—*Sisters of St. Francis* (Clinton, IA)—O.S.F.

[1570]—*Sisters of St. Francis of the Holy Family* (Dubuque, IA)—O.S.F.

[3830-15]—*Sisters of St. Joseph* (Concordia, KS)—C.S.J.

[1030]—*Sisters of the Divine Savior* (Milwaukee, WI)—S.D.S.

[]—*Sisters of the Sacred Heart* (Phoenix, AZ)—S.H.S.

[3105]—*Sisters of the Society of Our Lady of the Most Holy Trinity* (Bosque, NM)—S.O.L.T.

NECROLOGY

† O'Brien, Thomas J., Bishop Emeritus of Phoenix, Died Aug. 26, 2018

† Krynen, Joseph G., (Retired), Died Dec. 17, 2018

† O'Carroll, Eugene, (Retired), Died Sep. 1, 2018

An asterisk (*) denotes an organization that has established tax-exempt status directly with the IRS and is not covered by the USCCB Group Ruling.

RESOLUTION NO. 5909

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF CHANDLER, ARIZONA, AUTHORIZING THE SUBMITTAL OF AN APPLICATION FOR AN INDIAN GAMING REVENUE SHARING GRANT TO THE AK-CHIN INDIAN COMMUNITY ON BEHALF OF ST. JOSEPH THE WORKER, AN ARIZONA NONPROFIT CORPORATION, IN THE AMOUNT OF $25,000.

WHEREAS, pursuant to A.R.S. § 5-601.02, Indian tribes entering a tribal-state gaming compact shall contribute monies to "... cities, towns and counties ... for government services that benefit the general public, including public safety, mitigation of impacts of gaming, and promotion of commerce and economic development"; and

WHEREAS, Indian tribes entering a tribal-state gaming compact have various grant application procedures for evaluating which cities, towns, and counties, and which government services, will receive gaming revenue sharing contributions pursuant to A.R.S. § 5-601.02; and

WHEREAS, it is common practice for cities to authorize the submission of grant applications for such Indian gaming revenue sharing grants on behalf of 501(c)(3) nonprofit organizations that are deemed to be providing government related services that benefit the public; and

WHEREAS, St. Joseph the Worker ("The Worker"), an Arizona 501(c)(3) nonprofit corporation, has requested that the City of Chandler authorize the submission of an application for such Indian gaming revenue sharing grant funding to the Ak-Chin Indian Community on its behalf in the amount of $25,000; and

WHEREAS, the funding sought is for the purpose of supporting a Workforce Development Program that prevents homelessness by partnering with local businesses to offer employment at livable wages and with benefits, as further described in the application materials prepared by The Worker, which are incorporated by reference; and

WHEREAS, the City Manager's Office has reviewed the application materials and believes that the funding request described in the application materials qualifies as being for government-related services that benefit the public and is consistent with the City's Administrative Regulation regarding such grant applications.

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Chandler, Arizona, as follows:

Section 1. Authorizing The Worker to submit this Resolution and the grant application materials prepared by The Worker to the Ak-Chin Indian Community.

Section 2. Authorizing the Mayor or his designee to execute the application form or letter in conjunction with the grant application to be submitted to the Ak-Chin Indian Community on behalf of The Worker.

Section 3. Authorizing acceptance of the grant on behalf of The Worker in the amount of $25,000 or any other lesser or greater amount awarded and directing City staff to mail a check to The Worker within ten (10) days of the City's receipt of any grant funds from the Ak-Chin Indian Community pursuant to a grant application submitted on behalf of The Worker, covering one hundred percent (100%) of the funds received.

Section 4. The City, by virtue of this Resolution, is simply acting as a financial conduit between the Ak-Chin Indian Community and The Worker, and is in no way:

a. Agreeing or obligating itself to monitor or report on the expenditure of any grant funding distributed to or on behalf of The Worker; or

b. Guaranteeing or warranting the accuracy, completeness, or truthfulness of the information set forth in the application materials prepared by The Worker; or

c. Supervising or taking any responsibility regarding the actions or activities undertaken by The Worker; or

d. Representing that The Worker, either has, or does not have, other sources of funding relating to the intended use of grant funding set forth in this Resolution, including funding from grant applications made on behalf of The Worker to other Indian tribes.

PASSED AND ADOPTED by the City Council of the City of Chandler, Arizona, this ____ day of June, 2025.

ATTEST:

_____ _____

CITY CLERK MAYOR

CERTIFICATION

I HEREBY CERTIFY that the above and foregoing Resolution No. 5909 was duly passed and adopted by the City Council of the City of Chandler, Arizona, at a regular meeting held on the ____day of June, 2025 and that a quorum was present thereat.

_____

CITY CLERK

APPROVED AS TO FORM:

_____

CITY ATTORNEY

City Council Memorandum **Government Relations & Transportation**
Policy Memo No.

Date: June 12, 2025
To: Mayor and Council
Thru: Joshua H. Wright, City Manager
Ryan Peters, Strategic Initiatives Director
From: Raslyn Sleet, Grants Program Manager
Subject: Resolution No. 5908 Authorizing Submittal of an Indian Gaming Revenue Sharing Grant Application from Dignity Health Foundation - East Valley to Ak-Chin Indian Community

Proposed Motion:

Move City Council pass and adopt Resolution No. 5908 authorizing the submittal of a $146,879 pass-through Indian Gaming Revenue Sharing Grant Application from the Dignity Health Foundation – East Valley to the Ak-Chin Indian Community to purchase four Point of Care Ultrasound Units.

Background:

In 2002, a coalition of Arizona Indian tribes successfully obtained passage of Proposition 202, whereby the state was authorized to enter into gaming compacts with individual tribes. The compacts allowed for expanded tribal use of games and gaming devices as well as pari-mutuel wagering. In exchange, tribes agreed to share a portion of gaming revenues with the state and its counties, cities and towns. The law provides that 12 percent of tribal contributions pursuant to the compacts shall be contributed by Indian tribes to cities, towns and counties for government services that benefit the general public, including public safety, mitigation of gaming impacts and promotion of commerce and economic development. The Indian tribes have some discretion over how these contributions will be made, and each tribe has different application procedures that need to be observed to obtain funding. Additionally, it has become a common practice for cities to submit applications for such contributions on behalf of 501(c)(3) nonprofit organizations that are deemed to be providing government services that benefit the general public.

The City of Chandler for many years has submitted pass-through grant applications for numerous nonprofit organizations based on the interests of the city and its residents. The pass-through grant applicant must be a 501(c)(3) nonprofit organization with some nexus with the City and its residents.

Chandler Regional Medical Center's (CRMC) Emergency Department and Level I Trauma Center provide emergency and lifesaving care to thousands of East Valley residents every year. Hospital staff rely on many types of equipment to provide this excellent care. The request is to purchase four Point of Care Ultrasound (POCUS) units for the emergency services departments. Three of these POCUS units are specifically designed to guide the placement of peripheral IV lines (catheters), small plastic tubes inserted into the vein to deliver fluids, medications or blood products. POCUS helps nurses by providing visual guidance when inserting the tube directly into a peripheral vein.

This technology improves the safety and quality of care that patients receive. It is necessary to replace the aging, end-of-life POCUS units currently at CRMC with newer units equipped with modern technological capabilities.

CRMC Emergency Department serves more than 70,000 people every year from Chandler, Gilbert, Maricopa, Mesa, Queen Creek, Apache Junction, San Tan Valley, and the Ak-Chin and Gila River Indian Communities.

Financial Implications:

The City, by virtue of this Resolution, is acting as a financial conduit between the Ak-Chin Indian Community and Dignity Health Foundation-East Valley, and is in no way agreeing or obligating itself to monitor or report on the expenditure of any grant funding distributed to or on behalf of Dignity Health Foundation-East Valley, guarantee the accuracy, completeness or truthfulness of the information set forth in the application materials prepared by the Dignity Health Foundation-East Valley, supervise or take any responsibility regarding the actions or activities undertaken by the Dignity Health Foundation-East Valley, or represent that Dignity Health Foundation-East Valley, either has, or does not have, other sources of funding relating to the intended use of grant funding set forth in this Resolution, including funding from grant applications made on behalf of Dignity Health Foundation-East Valley, to other Indian tribes. The City has up to 10 days to send the funds once received.

Attachments

Dignity Helath Ak-Chin Signed Application

Resolution 5908 Dignity Health Foundation - Ak-Chin Indian Community

2025 Ak-Chin Indian Community Grant Application Cover Sheet

Name of Applicant: Dignity Health Foundation – East Valley	Applicant is a: □ City/Town/County (circle) X Other _Non-profit_____
Mayor/Supervisor/Chairman/President: Kevin Hartke, Mayor	
Contact Person and Title: Laurel Vetsch, Director, Grants	
Applicant Address (administrative office): Dignity Health: 1727 W. Frye Road, Suite 230	
City: Chandler, AZ	Zip Code: 85224
Applicant Mailing Address (if different): N/A	
City:	Zip Code:
Phone Number: 480-728-3130	Fax Number: 480-728-3945
E-mail Address: laurel.vetsch@commonspirit.org	
Fiscal Agent for any Applicant that is not a City, Town, or County (*Special Taxing Districts/Fire Districts must have a Fiscal Agent)*	
Contact Person: Dawn Lang, Deputy City Manager/CFO	
City/Town/County Mailing Address: City of Chandler, Communications and Public Affairs, 175 S. Arizona Ave., 5th Floor	
City: Chandler, AZ	Zip Code: 85225
Phone Number: 480-782-2000	Fax Number:
E-mail Address: dawn.lang@chandleraz.gov	

Program or Project Point of Care Ultrasound Equipment Purchase
Purpose (Check all that apply) ☐ education ☐ public safety X health ☐ environment ☐ promotion of commerce ☐ economic and community development
Purpose of Grant (brief statement): Our request is to purchase four Point of Care Ultrasound (POCUS) units
For Chandler Regional's Emergency Room and Trauma Center. Three of the units are to guide placement of
Peripheral IV lines in emergency patients and one is for general diagnostics for emergency patients.
Beginning and Ending Date of Program or Project: October 1, 2025 – September 30, 2026
Amount Requested: $146,879 Total Cost: $146,879
Geographic Area Served: East Valley (Chandler, Gilbert, Maricopa, GRIC, Ak-Chin, Mesa, Queen Creek)
Target Audience: Chandler Regional Medical Center Emergency Room and Trauma Center patients.

By the execution of this Grant Application the undersigned agrees that the information contained in this Application is true, to the best of the Applicant's knowledge. The Applicant shall notify the Community if any information in this Application changes.

Signature:
For the Applicant: _____ Date: 4/14/2025

Typed/Printed Name and Title: Laurel Vetsch, Grant Director

For the Fiscal Agent: _____ Date:_____
(If applicable)
Typed/Printed Name and Title: Dawn Lang, Deputy City Manager, CFO

Dignity Health Foundation – East Valley
Point of Care Ultrasound Grant Narrative

Describe the proposed program, project or purchase



Chandler Regional Medical Center's (CRMC) Emergency Department and Level I Trauma Center provide emergency and lifesaving care to thousands of East Valley residents every year. Hospital staff rely on many types of equipment to provide this excellent care. Constantly upgrading and replacing old equipment with new innovations that feature increased capability is very expensive; even with careful budgeting, the costs can quickly reach beyond the hospital's capabilities.

We are requesting $146,879 From Ak-Chin Indian Community to purchase four Point of Care Ultrasound (POCUS) units for our emergency services departments. Three of these POCUS units are specifically designed to guide placement of peripheral IV lines (catheters), small plastic tubes inserted into the vein to deliver fluids, medications or blood products. POCUS helps our nurses by providing visual guidance when inserting the tube directly into a peripheral vein.

The fourth POCUS unit is more generalized. Commonly referred to as the modern day stethoscope, POCUS is a tool to evaluate patients and provide appropriate care with speed and efficiency. Its use improves clinical outcomes, procedural safety, and reduces delays in care.



This technology improves the safety and quality of care our patients receive. We must replace the aging, end-of-life POCUS units that we currently have at CRMC with newer units equipped with modern technological capabilities. These particular models are the least expensive options that have features in place to ensure our patients are safe while ensuring ease of use throughout our fast-paced environment.

In July 2024, our first class of Graduate Medical Education (GME) Emergency Medicine residents began their rotations in CRMC Emergency Department and Trauma Center. POCUS technology is a core part of our resident physicians' training and is required by the GME accrediting body. Our ultrasound leaders are committed to providing robust opportunities for our current faculty and residents to grow their skills and bring this technology to our patients' bedsides, and to train tomorrow's physicians with this technology during their 3- to 5-year residency with Dignity Health East Valley.

Bringing this vision to reality, in partnership with the Ak-Chin Indian Community, will most notably increase the speed and efficiency with which we are able to evaluate patients and provide appropriate care in the hospital.

Identify the target population that will be served by the Project. (Who will benefit? How many will be served? Is there a targeted geographic location?

CRMC Emergency Department serves more than 70,000 people every year from Chandler, Gilbert, Maricopa, Mesa, Queen Creek, Apache Junction, San Tan Valley, and the Ak-Chin and Gila River Indian Communities. Our Level I Trauma Center is one of thirteen in Arizona and has the ability and resources to care for the most severely injured who are transported here from throughout the state. We have specialized surgeons and teams of support staff to ensure any injured person can be cared for. As the East Valley's busiest Trauma Center, we take pride in our capability and dedication to healing and helping the community.

At least 90% of patients to the Emergency Room (100-150 patients per day) require IV fluids for stabilization. Twenty percent of those (30-50 patients per day) receive peripheral IV lines requiring POCUS visualization. All of our current POCUS units that are used specifically for IV placement are no longer usable so we currently use other POCUS units meant to be used for diagnostic exams. This has led to much longer wait times for patients and inhibits the ability of staff to act quickly when needed.

Our Physician Training program trains residents at Dignity Health hospitals in the East Valley that benefit the general public in the surrounding areas. Adding our emergency residents this year increased our staff, enhancing response times, but our equipment needs have not kept pace with these increases. We need to keep up with the growth and capacity of these learners and provide the current technology they will need to use in their own practices in the future.

Describe the Project goals and objectives and outline a plan to meet these goals.

Project Goal. To provide the East Valley community with state-of-the-art emergency intravenous imaging and diagnostic services.

Objectives. Our objectives are the following:

1. Purchase POCUS equipment necessary to provide efficient emergency services.
2. Offer compassionate, expedited care to complex, high acuity patients with comfort and kindness when it is needed without delay.
3. Provide learning opportunities for our Graduate Medical Education Emergency Medicine residents.

Implementation Plan

Activity	**Roles Responsible**
Purchase equipment, including the POCUS units, accompanying probes, and wheeled delivery carts	VP Operations, Manager of Nursing, Emergency Services
Install equipment	IT Installation
Coordinate staff training	Manager of Nursing, Emergency Services
Develop policies and procedures for use of the new equipment	Manager of Nursing, Emergency Services
Begin patient treatment	Emergency Room staff
Continue physician education	Emergency Medicine faculty leaders and mentors

Provide a timetable for implementation of the Project.

As soon as funding is received, we will commit to begin the purchase process of these four POCUS devices, along with the required accessories. Devices may be delivered up to two months after order and purchase and then go through the installation and testing phase within the hospital.

Identify current funding sources for the Project and characterize each funding source listed as either a one-time-only or long-term funding source.

Limited capital funds made available by CommonSpirit Health for replacement equipment were not sufficient due to the financial strains being experienced by our organization currently, and therefore no funds were available for POCUS upgrades. Our foundation continues to raise funds for these items, but currently have no other funders.

Identify other organizations or partners that are participating in or contributing to the Project, but which are not funding sources, and describe their roles or contributions.

There are no additional partners on this project other than GE Healthcare, the company we will purchase the units from.

Define the Project as a new or continuing project or a purchase. Provide information about how the Project will be sustained or the purchase will be maintained after the grant funding is exhausted.

This is a purchase. Each of the units will have a regular maintenance schedule as prescribed by the vendor and hospital regulations. Each device will have a usable lifespan of at least 7-10 years.

Pending requests made within the last eighteen (18) months and funded requests made in the last five (5) years.

Pending and unsuccessful requests within the last eighteen months include:

- Gila River Indian Community - $268,264 for Graduate Medical Education equipment (pending)

Funded requests in the last five years include:

- Ak-Chin Indian Community - $120,505 awarded for point of care ultrasound equipment in 2023-2024.
- Ak-Chin Indian Community - $199,782 awarded for GME construction in 2022-2023.
- Ak-Chin Indian Community - $242,283 awarded for tower construction at Chandler Regional Medical Center in 2020-2021.
- Salt River Pima-Maricopa Indian Community - $200,000 awarded for children’s dental services and $150,000 for medications for the uninsured in 2021-2024.

BUDGET

Equipment		
3 GE Healthcare Venue Fit Ultrasound units	$91,902	3 Venue Fit R5 Standard ($65,427) 3 L420t-RS Probe Collector ($22,500) 3 Venue Fit Carts ($3,975)
GE Healthcare Venue Go	$54,977	1 Venue Go Premier ($36,271) 3 Probes ($16,873) 1 Venue Go Cart ($1,833)
TOTAL REQUESTED	**$146,879**	

IRS Department of the Treasury
Internal Revenue Service

CINCINNATI OH 45999-0038

In reply refer to: 0248344558
Sep. 22, 2017 LTR 4168C 0
74-2418514 000000 00
00018398
BODC: TE

DIGNITY HEALTH FOUNDATION-EAST
VALLEY
% RANDY BRADLEY
1955 W FRYE RD
CHANDLER AZ 85224

017548

Employer ID Number: 74-2418514
Form 990 required: Yes

Dear Taxpayer:

This is in response to your request dated Sep. 14, 2017, regarding your tax-exempt status.

We issued you a determination letter in July 1986, recognizing you as tax-exempt under Internal Revenue Code (IRC) Section 501(c)(3).

Our records also indicate you're not a private foundation as defined under IRC Section 509(a) because you're described in IRC Section 509(a)(3) as a Type I supporting organization. A Type I supporting organization is operated, supervised, or controlled by one or more publicly supported charities.

Donors can deduct contributions they make to you as provided in IRC Section 170. You're also qualified to receive tax deductible bequests, legacies, devises, transfers, or gifts under IRC Sections 2055, 2106, and 2522.

In the heading of this letter, we indicated whether you must file an annual information return. If a return is required, you must file Form 990, 990-EZ, 990-N, or 990-PF by the 15th day of the fifth month after the end of your annual accounting period. IRC Section 6033(j) provides that, if you don't file a required annual information return or notice for three consecutive years, your exempt status will be automatically revoked on the filing due date of the third required return or notice.

For tax forms, instructions, and publications, visit www.irs.gov or call 1-800-TAX-FORM (1-800-829-3676).

If you have questions, call 1-877-829-5500 between 8 a.m. and 5 p.m., local time, Monday through Friday (Alaska and Hawaii follow Pacific Time).

0248344558
Sep. 22, 2017 LTR 4168C 0
74-2418514 000000 00
00018399

DIGNITY HEALTH FOUNDATION-EAST
VALLEY
% RANDY BRADLEY
1955 W FRYE RD
CHANDLER AZ 85224

Sincerely yours,



Kim A. Billups, Operations Manager
Accounts Management Operations 1

GE HealthCare

February 28, 2025
Quote Number: **2010885474.7**
Customer ID: **1-23NNL5**
Quotation Expiration Date: **05/29/2025**

ENSURE REQUISITION/PURCHASE ORDER IS ISSUED TO:
GE Medical Systems, Ultrasound & Primary Care Diagnostics, LLC
Tax ID (92-0192942)

Dignity Community Care dba Chandler Regional Medical Center
1955 W Frye Rd
Chandler, AZ 85224-6282

This Agreement (as defined below) is by and between the Customer and the GE HealthCare business ("GE HealthCare"), each as identified below for the sale and purchase of the Products and/or Services identified in this Quotation, together with any applicable schedules referred to herein ("Quotation"). "Agreement" is this Quotation (including line/catalog details included herein) and either: (i) the Governing Agreement identified below; or (ii) if no Governing Agreement is identified, the GE HealthCare Terms and Conditions and Warranties that apply to the Products and/or Services identified in this Quotation.

GE HealthCare can withdraw this Quotation at any time before Customer: (i) signs and returns this Quotation or (ii) provides evidence of Quotation acceptance satisfactory to GE HealthCare ("Quotation Acceptance"). On Quotation Acceptance, this Agreement is the complete and final agreement of the parties relating to the Products and/or Services identified in Quotation. There is no reliance on any terms other than those expressly stated or incorporated by reference in this Agreement and, except as permitted this in this Agreement, no attempt to modify will be binding unless agreed to in writing by the parties. Modifications may result in additional fees and cannot be made without GE HealthCare's prior written consent.

Handwritten or electronic modifications on this Agreement (except an indication of the form of payment, Customer purchase order number and signatures on the signature blocks below) are void.

Governing Agreement:	CommonSpirit DH-CE-136 - PoC U/S
Discount Tier	
Terms of Delivery	FOB Destination
Billing Terms	0% Down, 40% Delivery, 40% Installation, 20% Clinical Acceptance
Payment Terms	Net Due in 45 Days
Sales and Use Tax Exemption	Certificate on File
Total Quote Net Selling Price	$91,902.00

IMPORTANT CUSTOMER ACTIONS:
Please select your planned source of funds. Source of funds is assumed to be cash unless you choose another option. Once equipment has been shipped, source of funds changes cannot be allowed.

___ Cash

___ GE HFS Loan ___ GE HFS Lease

___ Other Financing Loan ___ Other Financing Lease Provide Finance Company Name _____

The parties have caused this Agreement to be executed by their authorized representative as of the last signature date below.

Dignity Community Care dba Chandler Regional Medical Center

Signature: _____

Print Name: _____

Title: _____

Date: _____

_____
Purchase Order Number, if applicable

GE HealthCare

Signature: Jen Yost

Title: Lead Sales Specialist - Sales

Date: February 28, 2025

GE HealthCare Confidential and Proprietary

GE HealthCare

February 28, 2025
Quote Number: **2010885474.7**
Customer ID: **1-23NNL5**
Quotation Expiration Date: **05/29/2025**

Document Instructions

Please sign and return this quotation together with any Purchase Order(s) to:

Name: Jen Yost
Email: jennifer.yost@gehealthcare.com
Phone: 480-228-0593
Fax:

Payment Instructions

Please **remit** payment for invoices associated with this quotation to:

GE Medical Systems
Ultrasound Primary Care Diagnostics, LLC
P.O. Box 74008831
Chicago, IL 60674-8831

FEIN –92-0192942

Dignity Community Care dba Chandler Regional Medical Center

Addresses:

Bill To:	CHANDLER REGIONAL MEDICAL CENTER	CHANDLER REGIONAL HOSPITAL, 1955 W FRYE RD CHANDLER,AZ,85224-6282
Ship To:	CHANDLER REGIONAL MEDICAL CENTER	CHANDLER REGIONAL HOSPITAL, 1955 W FRYE RD CHANDLER,AZ,85224-6282

To Accept This Quotation

- Please sign the quote and any included attachments (where requested).
- Source of Funds (choice of Cash/Third Party Loan or GE HFS Lease Loan or Third Party Lease through _____), must be indicated, which may be done on the Quote Signature Page (for signed quotes), or the Purchase Order (where quotes are not signed) or via a separate written source of funds statement (if provided by GE HealthCare).
- If your purchasing process requires a purchase order, please make sure it includes:
  - The correct Quote number and Version number above
  - The correct Remit To information as indicated in "Payment Instructions" above
  - Your correct SHIP TO and BILL TO site name and address
  - The correct Total Price as indicated above

Evidence of the agreement to contract terms. Either: (a) the quotation signature filled out with signature and P.O. number; or (b) Verbiage on the purchase order stating one of the following:
(i) "Per the terms of Quotation # _____";
(ii) "Per the terms of GPO # _____";
(iii) "Per the terms of MPA# _____"; or
(iv) "Per the terms of SAA # _____.

Catalog Item Details

Line	Qty.	Catalog		
1.	3.00	H8044VS	Venue Fit R5 Standard	
List Price		Discount	Extended List Price	Net Price
$43,618.00		50.00%	$130,854.00	$65,427.00

Line	Qty.	Catalog		
2.	3.00	H48062AJ	L4-20t-RS	
List Price		Discount	Extended List Price	Net Price
$15,000.00		50.00%	$45,000.00	$22,500.00

Line	Qty.	Catalog		
3.	3.00	H45303VFC	Venue Fit Cart (basic Cart BOU)	
List Price		Discount	Extended List Price	Net Price
$2,650.00		50.00%	$7,950.00	$3,975.00

Total Quote List Price:	***$183,804.00***
Total Quote Discount:	***50.00%***
Total Quote Subtotal:	***$91,902.00***

Total Quote Net Selling Price:	***$91,902.00***

ENSURE REQUISITION/PURCHASE ORDER IS ISSUED TO:

GE Medical Systems, Ultrasound & Primary Care Diagnostics, LLC

Tax ID (92-0192942)

If applicable, for more information on this devices' operating system, please visit GE HealthCare's product security portal at: https://securityupdate.gehealthcare.com/en/products

Governing Agreement Reference Information

Customer:	Dignity Community Care dba Chandler Regional Medical Center
Contract Number:	CommonSpirit DH-CE-136 - PoC U/S
Billing Terms:	0% Down, 40% Delivery, 40% Installation, 20% Clinical Acceptance
Payment Terms:	Net Due in 45 Days
Shipping Terms	FOB DESTINATION

Offer subject to the Terms and Conditions of the applicable Governing Agreement currently in effect between GE HealthCare and CommonSpirit DH-CE-136 - PoC U/S

If applicable, for more information on this devices' operating system, please visit GE HealthCare's product security portal at: https://securityupdate.gehealthcare.com/en/products

GE HealthCare

April 3, 2025
Quote Number: **2011718211.2**
Customer ID: **1-23NNL5**
Quotation Expiration Date: **07/02/2025**

ENSURE REQUISITION/PURCHASE ORDER IS ISSUED TO:
GE Medical Systems, Ultrasound & Primary Care Diagnostics, LLC
Tax ID (92-0192942)

Dignity Community Care dba Chandler Regional Medical Center
1955 W Frye Rd
Chandler, AZ 85224-6282

This Agreement (as defined below) is by and between the Customer and the GE HealthCare business ("GE HealthCare"), each as identified below for the sale and purchase of the Products and/or Services identified in this Quotation, together with any applicable schedules referred to herein ("Quotation"). "Agreement" is this Quotation (including line/catalog details included herein) and either: (i) the Governing Agreement identified below; or (ii) if no Governing Agreement is identified, the GE HealthCare Terms and Conditions and Warranties that apply to the Products and/or Services identified in this Quotation.

GE HealthCare can withdraw this Quotation at any time before Customer: (i) signs and returns this Quotation or (ii) provides evidence of Quotation acceptance satisfactory to GE HealthCare ("Quotation Acceptance"). On Quotation Acceptance, this Agreement is the complete and final agreement of the parties relating to the Products and/or Services identified in Quotation. There is no reliance on any terms other than those expressly stated or incorporated by reference in this Agreement and, except as permitted this in this Agreement, no attempt to modify will be binding unless agreed to in writing by the parties. Modifications may result in additional fees and cannot be made without GE HealthCare's prior written consent.

Handwritten or electronic modifications on this Agreement (except an indication of the form of payment, Customer purchase order number and signatures on the signature blocks below) are void.

Governing Agreement:	CommonSpirit DH-CE-136 - PoC U/S
Discount Tier	
Terms of Delivery	FOB Destination
Billing Terms	0% Down, 40% Delivery, 40% Installation, 20% Clinical Acceptance
Payment Terms	Net Due in 45 Days
Sales and Use Tax Exemption	Certificate on File
Total Quote Net Selling Price	$54,977.31

IMPORTANT CUSTOMER ACTIONS:
Please select your planned source of funds. Source of funds is assumed to be cash unless you choose another option. Once equipment has been shipped, source of funds changes cannot be allowed.

___ Cash

___ GE HFS Loan ___ GE HFS Lease

___ Other Financing Loan ___ Other Financing Lease Provide Finance Company Name _____

The parties have caused this Agreement to be executed by their authorized representative as of the last signature date below.

Dignity Community Care dba Chandler Regional Medical Center

Signature: _____

Print Name: _____

Title: _____

Date: _____

_____
Purchase Order Number, if applicable

GE HealthCare

Signature: Brandon Jainarine

Title: Commercial Leadership Program - CLP

Date: April 3, 2025

April 3, 2025
Quote Number: **2011718211.2**
Customer ID: **1-23NNL5**
Quotation Expiration Date: **07/02/2025**

Document Instructions

Please sign and return this quotation together with any Purchase Order(s) to:

Name: Brandon Jainarine
Email: brandon.jainarine@gehealthcare.com
Phone:
Fax:

Name: Jen Yost
Email: jennifer.yost@gehealthcare.com
Phone: 480-228-0593
Fax:

Payment Instructions

Please **remit** payment for invoices associated with this quotation to:

GE Medical Systems
Ultrasound Primary Care Diagnostics, LLC
P.O. Box 74008831
Chicago, IL 60674-8831

FEIN –92-0192942

Dignity Community Care dba Chandler Regional Medical Center

Addresses:

Bill To:	CHANDLER REGIONAL MEDICAL CENTER	CHANDLER REGIONAL HOSPITAL, 1955 W FRYE RD CHANDLER,AZ,85224-6282
Ship To:	CHANDLER REGIONAL MEDICAL CENTER	CHANDLER REGIONAL HOSPITAL, 1955 W FRYE RD CHANDLER,AZ,85224-6282

To Accept This Quotation

- Please sign the quote and any included attachments (where requested).
- Source of Funds (choice of Cash/Third Party Loan or GE HFS Lease Loan or Third Party Lease through _____), must be indicated, which may be done on the Quote Signature Page (for signed quotes), or the Purchase Order (where quotes are not signed) or via a separate written source of funds statement (if provided by GE HealthCare).
- If your purchasing process requires a purchase order, please make sure it includes:
  - The correct Quote number and Version number above
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  - The correct Total Price as indicated above

Evidence of the agreement to contract terms. Either: (a) the quotation signature filled out with signature and P.O. number; or (b) Verbiage on the purchase order stating one of the following:
(i) "Per the terms of Quotation # _____";
(ii) "Per the terms of GPO # _____";
(iii) "Per the terms of MPA# _____"; or
(iv) "Per the terms of SAA # _____.

GE HealthCare Confidential and Proprietary

GE HealthCare

April 3, 2025
Quote Number: **2011718211.2**
Customer ID: **1-23NNL5**
Quotation Expiration Date: **07/02/2025**

Catalog Item Details

Line	Qty.	Catalog		
1.	1.00	H45134VGCT	Venue Go Cart	
List Price		Discount	Extended List Price	Net Price
$3,900.00		53.00%	$3,900.00	$1,833.00

Line	Qty.	Catalog		
2.	1.00	H8044PG	Venue Go R5 Premier	
List Price		Discount	Extended List Price	Net Price
$77,173.00		53.00%	$77,173.00	$36,271.31

Line	Qty.	Catalog		
3.	1.00	H45041DL	3SC-RS Phased Array Probe	
List Price		Discount	Extended List Price	Net Price
$9,500.00		53.00%	$9,500.00	$4,465.00

Line	Qty.	Catalog		
4.	1.00	H48062AB	L4-12t-RS Linear Array Probe	
List Price		Discount	Extended List Price	Net Price
$13,900.00		53.00%	$13,900.00	$6,533.00

Line	Qty.	Catalog		
5.	1.00	H40482LJ	C1-5-RS Wideband Convex Array Probe (USA PoC Only)	
List Price		Discount	Extended List Price	Net Price
$12,500.00		53.00%	$12,500.00	$5,875.00

Total Quote List Price:	***$116,973.00***
Total Quote Discount:	***53.00%***
Total Quote Subtotal:	***$54,977.31***

Total Quote Net Selling Price: ***$54,977.31***

ENSURE REQUISITION/PURCHASE ORDER IS ISSUED TO:

GE Medical Systems, Ultrasound & Primary Care Diagnostics, LLC

Tax ID (92-0192942)

GE HealthCare Confidential and Proprietary

RESOLUTION NO. 5908

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF CHANDLER, ARIZONA, AUTHORIZING THE SUBMITTAL OF AN APPLICATION FOR AN INDIAN GAMING REVENUE SHARING GRANT TO THE AK-CHIN INDIAN COMMUNITY ON BEHALF OF DIGNITY HEALTH FOUNDATION – EAST VALLEY, AN ARIZONA NONPROFIT CORPORATION, IN THE AMOUNT OF $146,879.

WHEREAS, pursuant to A.R.S. § 5-601.02, Indian tribes entering a tribal-state gaming compact shall contribute monies to "... cities, towns and counties ... for government services that benefit the general public, including public safety, mitigation of impacts of gaming, and promotion of commerce and economic development"; and

WHEREAS, Indian tribes entering a tribal-state gaming compact have various grant application procedures for evaluating which cities, towns, and counties, and which government services, will receive gaming revenue sharing contributions pursuant to A.R.S. § 5-601.02; and

WHEREAS, it is common practice for cities to authorize the submission of grant applications for such Indian gaming revenue sharing grants on behalf of 501(c)(3) nonprofit organizations that are deemed to be providing government related services that benefit the public; and

WHEREAS, Dignity Health Foundation – East Valley ("Dignity Health"), an Arizona 501(c)(3) nonprofit corporation, has requested that the City of Chandler authorize the submission of an application for such Indian gaming revenue sharing grant funding to the Ak-Chin Indian Community on its behalf in the amount of $146,879; and

WHEREAS, the funding sought is for the purpose of supporting the purchase of four Point of Care Ultrasound units for Chandler Regional Hospital's Emergency Room and Trauma Center, as further described in the application materials prepared by Dignity Health, which are incorporated by reference; and

WHEREAS, the City Manager's Office has reviewed the application materials and believes that the funding request described in the application materials qualifies as being for government-related services that benefit the public and is consistent with the City's Administrative Regulation regarding such grant applications.

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Chandler, Arizona, as follows:

Section 1. Authorizing Dignity Health to submit this Resolution and the grant application materials prepared by Dignity Health to the Ak-Chin Indian Community.

Section 2. Authorizing the Mayor or his designee to execute the application form or letter in conjunction with the grant application to be submitted to the Ak-Chin Indian Community on behalf of Dignity Health.

Section 3. Authorizing acceptance of the grant on behalf of Dignity Health in the amount of $146,879 or any other lesser or greater amount awarded and directing City staff to mail a check to Dignity Health within ten (10) days of the City's receipt of any grant funds from the Ak-Chin Indian Community pursuant to a grant application submitted on behalf of Dignity Health, covering one hundred percent (100%) of the funds received.

Section 4. The City, by virtue of this Resolution, is simply acting as a financial conduit between the Ak-Chin Indian Community and Dignity Health, and is in no way:

a. Agreeing or obligating itself to monitor or report on the expenditure of any grant funding distributed to or on behalf of Dignity Health; or

b. Guaranteeing or warranting the accuracy, completeness, or truthfulness of the information set forth in the application materials prepared by Dignity Health; or

c. Supervising or taking any responsibility regarding the actions or activities undertaken by Dignity Health; or

d. Representing that Dignity Health either has, or does not have, other sources of funding relating to the intended use of grant funding set forth in this Resolution, including funding from grant applications made on behalf of Dignity Health to other Indian tribes.

PASSED AND ADOPTED by the City Council of the City of Chandler, Arizona, this _____ day of June, 2025.

ATTEST:

_____ _____

CITY CLERK MAYOR

CERTIFICATION

I HEREBY CERTIFY that the above and foregoing Resolution No. 5908 was duly passed and adopted by the City Council of the City of Chandler, Arizona, at a regular meeting held on the _____ day of June, 2025 and that a quorum was present thereat.

_____

CITY CLERK

APPROVED AS TO FORM:

_____

CITY ATTORNEY

CHANDLER arizona
Community of Innovation

City Council Memorandum **Government Relations & Transportation**
Policy Memo No. TP25-21

Date: June 12, 2025
To: Mayor and Council
Thru: Joshua H. Wright, City Manager
Ryan Peters, Strategic Initiatives Director
From: Jason Crampton, Transportation Planning Manager
Subject: Resolution No. 5904, Authorizing a Grant Application for, and Acceptance of Grant Funds from, the Arterial Rehabilitation and Reconstruction Program for Improvements to Chandler Boulevard from Dobson Road to Price Road

---

Proposed Motion:

Move City Council pass and adopt Resolution No. 5904, authorizing a grant application for, and acceptance of grant funds from, the Arterial Rehabilitation and Reconstruction Program to fund the repaving of and other improvements to Chandler Boulevard from Dobson Road to Price Road.

Background:

In preparation for new funding programs associated with Proposition 479, the Maricopa Association of Governments has issued a federally-funded call for projects for the rehabilitation and reconstruction of arterial roadways in fiscal years 2025-26, 2026-27, and 2027-28. The program funds repaving and other improvements made on arterial streets.

Chandler Boulevard from Dobson Road to Price Road is in need of repaving. Additionally, a safety assessment will be performed on this road segment to determine if any other improvements would be feasible to enhance safety.

Resolution No. 5904 will authorize the city to apply for and accept a $4.42 million federal grant, which would pay for up to 70% of design and construction costs to repave the roadway and make other improvements, such as Americans with Disabilities Act enhancements.

Financial Implications:

If awarded, up to $4.42 million in federal grant funds would supplant local street maintenance funding that would otherwise need to be spent on this road segment, allowing local street maintenance funding to be allocated to repaving other roadways in need of maintenance. This grant requires a 30% local match ($1.9 million).

Attachments

Resolution No. 5904

Project Area Map

Grant Application

RESOLUTION NO. 5904

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF CHANDLER, ARIZONA, AUTHORIZING A GRANT APPLICATION FOR, AND ACCEPTANCE OF FEDERAL GRANT FUNDS FROM, THE ARTERIAL REHABILITATION AND RECONSTRUCTION PROGRAM COORDINATED THROUGH THE MARICOPA ASSOCIATION OF GOVERNMENTS (MAG) IN THE AMOUNT OF $4.42 MILLION.

WHEREAS, the City of Chandler provides regular street maintenance; and

WHEREAS, Chandler Boulevard from Dobson Road to Price Road is in need of street rehabilitation; and

WHEREAS, MAG's Arterial Rehabilitation and Reconstruction Program can provide federal funding to pay for up to 70 percent of street rehabilitation costs and other improvements; and

WHEREAS, City of Chandler's Transportation Planning staff submitted an Arterial Rehabilitation and Reconstruction Program grant application, requesting $4.42 million in federal funding to repave and make other improvements to Chandler Boulevard from Dobson Road to Price Road, as more specifically described in the application materials, which are incorporated herein by reference; and

WHEREAS, if the grant is awarded in the full amount requested, a local match of $1.9 million will be required.

NOW, THEREFORE BE IT RESOLVED by the City Council of the City of Chandler, Arizona, as follows:

Section 1. Authorizing City of Chandler's Transportation Planning staff to submit the Arterial Rehabilitation and Reconstruction grant application materials to MAG.

Section 2. Authorizing the City Manager or his designee(s) to execute the grant application, grant disclosure forms, and grant agreement, and take such actions necessary to comply with the terms of the grant and perform all acts necessary to give effect to this Resolution.

Section 3. Authorizing the acceptance of the Arterial Rehabilitation and Reconstruction grant funds up to the maximum amount awarded, and authorizing the contribution of City of Chandler funds in the amount of $1.9 million.

PASSED AND ADOPTED by the Council of the City of Chandler, Arizona, this ____ day of June, 2025.

ATTEST:

CITY CLERK MAYOR

CERTIFICATION

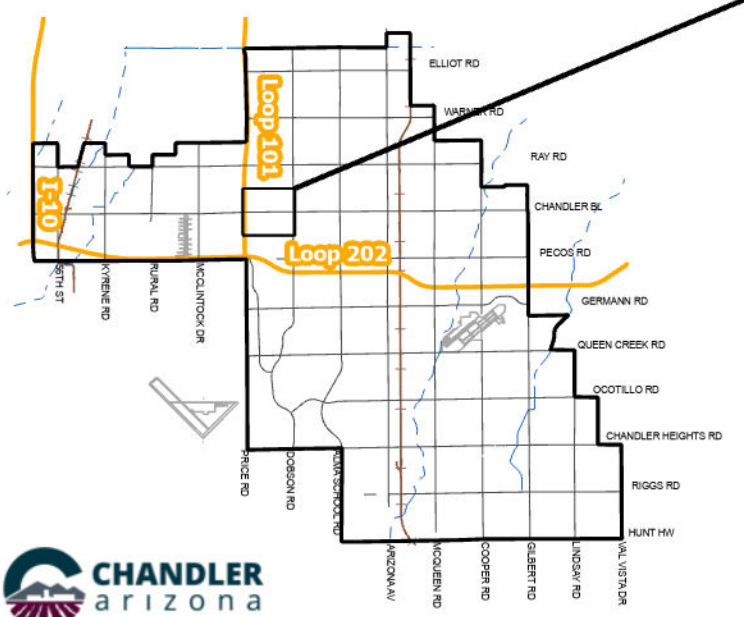
I HEREBY CERTIFY that the foregoing Resolution No. 5904 was duly passed and adopted by the Council of the City of Chandler, Arizona, at a regular meeting held on the ___ day of June, 2025 and that a quorum was present thereat.

CITY CLERK

APPROVED AS TO FORM:

CITY ATTORNEY





Arterial Rehabilitation and Reconstruction Program

Project Area

CHANDLER arizona

NTS

ChanGIS

Application: CHN-26-ARRP-002, Chandler Boulevard: Price Rd. to Dobson Rd.

Project Overview

Project Description	This project will repave (mill and overlay) 1 mile of Chandler Boulevard between Price Road and Dobson Road. Additionally, the City will make ADA improvements on sidewalks, curb ramps and driveways. The City will conduct a Roadway Safety Assessment and will implement feasible recommendations.
Project Type	RoadwayRehabilitation
Project Phases	Scoping|Design|Construction
Project Location	

Project Details

Project Limits	Chandler Boulevard: Price Road to Dobson Road
Project Length (in miles)	1
Posted Speed Limit (MPH)	45
Number of Travel Lanes	3
Roadway surface condition	This roadway surface is in poor condition. Approximately 18 months ago, it had a PQI rating of 54.9 and an SDI rating of 62.8, and has only gotten worse since then. The segment between Ellis St. and Coronado St. is in particularly bad condition with a December 2023 PQI score of 50.1 and SDI of 56.7. Additionally, the RCI rating for this corridor was 56.1 in 2023, indicating a rough surface. Pavement cracking and potholes throughout the corridor not only make for a rough ride, but they also diminish lane visibility and decrease roadway safety.

Scoping

Project Scoping	The City has done an ADA analysis on the corridor to determine ADA improvements required. More scoping will be conducted after the RSA is completed.

Design

Project Design	This will be conducted prior to construction.

Application: CHN-26-ARRP-002, Chandler Boulevard: Price Rd. to Dobson Rd.

Design

Road Safety Assessment (RSA)	An RSA will be conducted prior to finalizing design. In preparing for this project, we have analyzed crash data and found that crashes, particularly crashes with injuries and fatalities have been increasing over the past five years. This data and other factors will be analyzed in more detail in developing the RSA for this corridor.

Environmental

Environmental Impact	None
Environmental Clearance Process or Issues	

Right of Way

Right of Way Status	AgencyOwnsAllROWneeded
Right of Way Acquisition Plan or Issues	

Utilities

Utilities Impact	None
Utilities Relocation Plan or Issues	

Construction Phase Only

Safety Considerations	An RSA will be conducted and will identify recommendations for safety improvements that will be incorporated into the project design as feasible.

Pavement Conditions

Agency Provided Pavement Rating	54.9

Application: CHN-26-ARRP-002, Chandler Boulevard: Price Rd. to Dobson Rd.

Pavement Conditions

Name or Description of Rating System Used - e.g. PCI, PSR, etc..	PQI
Rating system scale - please describe the scale used in the rating system - e.g. it ranges from 1 to 100 with 100 being the best condition.	1 to 100 with 100 being the best condition
Date of Rating	12/01/2023
Rating	54.9
Pavement Roughness	RCI rating of 56.1 in December 2023.

Qualitative Factors

Alignment with ARRP Goals	This project will greatly enhance roadway safety by providing a well-maintained roadway surface. The pavement condition is among the worst in Chandler with a PQI score as low as 50 in some segments and an overall average of 54.9. Additionally, an RSA will be conducted to help determine any other safety measures that can be incorporated. As with any Chandler mill and overlay project, the city will make ADA improvements to curb ramps, driveways and sidewalks in the corridor to enhance accessibility and improve pedestrian infrastructure in general. Additionally, Chandler has a robust streets maintenance program that will help to ensure that this important regional asset will be kept in great condition over time. Chandler performs regular crack seals and slurry seals on its streets, which help stretch the lifespan of the street and drastically increase the time between roadway reconstructions. Finally, Chandler is a Certified Agency, and, if awarded federal funding, will be able to manage this project in house, resulting in quicker delivery of design and construction.
Unique Attributes	With an average daily traffic count near 40,000 (39,800 in February 2025), this is a highly-trafficked roadway that provides an important connection to Loop 101. There is a significant amount of commercial traffic in addition to through traffic accessing the freeway. It also has a high normalized serious and fatal crash rate of 3.9. Chandler Boulevard is also an important transit corridor, with high-frequency bus service in peak hours and standard 30-minute service throughout the rest of the day. Chandler Boulevard is one of three corridors that the city designates as a high-capacity transit corridor for planning purposes.

Application: CHN-26-ARRP-002, Chandler Boulevard: Price Rd. to Dobson Rd.

Qualitative Factors

Safety Data and Considerations	Accompanying this project will be an educational campaign for bicycle safety. The City has 8 bus stops in this corridor and can use bus stop advertising to promote awareness and respect for bicyclists in the corridor, which can accompany other outreach methods like social media. Additionally, green pavement markings can be added to create more visual awareness of the space designated for bicyclists. Furthermore, the RSA will identify additional safety improvements that may be able to be implemented.
Community Outreach	The city's 2025-26 budget survey asked residents to priority rank various Chandler programs. Residents rated additional street maintenance activities as the fifth most important city program to fund. This particular corridor has received repaving requests from Chandler residents. Additionally, the Chandler Mayor has provided a letter of support for the project.
Community Outreach Plans	

Signature

Signature	Ryan Peters
Signed Date	5/1/2025 2:40:46 PM
Signed User	ryan.peters@chandleraz.gov, Ryan Peters

Application: CHN-26-ARRP-002, Chandler Boulevard: Price Rd. to Dobson Rd.

Cost Estimate

Total: ($4,421,060.00 Federal / Local)

Design

$250,000.00 ($175,000.00 Federal / $75,000.00 Local)

Preliminary Engineering/Scoping

Description	Quantity	Unit	Cost	Total Cost	Fed?	Federal	Local
Design Concept Report (DCR)	1	LS	$15,000.00	$15,000.00	Yes	$10,500.00	$4,500.00
Federal Project Environmental Determination	1	LS	$20,000.00	$20,000.00	Yes	$14,000.00	$6,000.00
HAZMAT Assessment	1	LS	$10,000.00	$10,000.00	Yes	$7,000.00	$3,000.00
Topographic Survey	1	LS	$20,000.00	$20,000.00	Yes	$14,000.00	$6,000.00
				$65,000.00		**$45,500.00**	**$19,500.00**

Final Design

Description	Quantity	Unit	Cost	Total Cost	Fed?	Federal	Local
Drainage Report	1	LS	$10,000.00	$10,000.00	Yes	$7,000.00	$3,000.00
Geotechnical Report	1	LS	$15,000.00	$15,000.00	Yes	$10,500.00	$4,500.00
Plans, Specifications, Cost Estimates, Bidding	1	LS	$150,000.00	$150,000.00	Yes	$105,000.00	$45,000.00
SWPPP	1	LS	$10,000.00	$10,000.00	Yes	$7,000.00	$3,000.00
				$185,000.00		**$129,500.00**	**$55,500.00**

Construction

$6,065,800.00 ($4,246,060.00 Federal / $1,819,740.00 Local)

Construction

Description	Quantity	Unit	Cost	Total Cost	Fed?	Federal	Local
Base and Surface Treatment - Aggregate Base	4,000	SY	$120.00	$480,000.00	Yes	$336,000.00	$144,000.00
Base and Surface Treatment - Pavement Surface	53,000	SY	$32.00	$1,696,000.00	Yes	$1,187,200.00	$508,800.00

Application: CHN-26-ARRP-002, Chandler Boulevard: Price Rd. to Dobson Rd.

Cost Estimate

Total: ($4,421,060.00 Federal / Local)

Construction

$6,065,800.00 ($4,246,060.00 Federal / $1,819,740.00 Local)

Drainage	1	LS	$100,000.00	$100,000.00	Yes	$70,000.00	$30,000.00
Earthwork - Clearing and Removal	1	LS	$150,000.00	$150,000.00	Yes	$105,000.00	$45,000.00
Earthwork - Ecavation	800	CY	$150.00	$120,000.00	Yes	$84,000.00	$36,000.00
Incidentals - ADA Improvements	1	LS	$150,000.00	$150,000.00	Yes	$105,000.00	$45,000.00
Incidentals - Roadway Appurtenances	1	LS	$100,000.00	$100,000.00	Yes	$70,000.00	$30,000.00
Incidentals - Sidewalks	1,500	SY	$120.00	$180,000.00	Yes	$126,000.00	$54,000.00
Other	1	LS	$175,000.00	$175,000.00	Yes	$122,500.00	$52,500.00
Roadside Development	1	LS	$150,000.00	$150,000.00	Yes	$105,000.00	$45,000.00
Traffic Engineering - ITS	1	MILE	$80,000.00	$80,000.00	Yes	$56,000.00	$24,000.00
Traffic Engineering - Lighting	1	MILE	$750,000.00	$750,000.00	Yes	$525,000.00	$225,000.00
Traffic Engineering - Pavement Markings	6	LANE-MILE	$20,000.00	$120,000.00	Yes	$84,000.00	$36,000.00
Traffic Engineering - Signage	1	MILE	$40,000.00	$40,000.00	Yes	$28,000.00	$12,000.00
				$4,291,000.00		**$3,003,700.00**	**$1,287,300.00**

Mobilization and Administration Costs

Description	Quantity	Unit	Cost	Total Cost	Fed?	Federal	Local
Construction Administration	1	%	$788,800.00	$788,800.00	Yes	$552,160.00	$236,640.00
Construction Contingencies	1	%	$394,400.00	$394,400.00	Yes	$276,080.00	$118,320.00
Mobilization	1	%	$197,200.00	$197,200.00	Yes	$138,040.00	$59,160.00

Application: CHN-26-ARRP-002, Chandler Boulevard: Price Rd. to Dobson Rd.

Cost Estimate

Total: ($4,421,060.00 Federal / Local)

Construction

$6,065,800.00 ($4,246,060.00 Federal / $1,819,740.00 Local)

Post-Design Services	1	%	$78,880.00	$78,880.00	Yes	$55,216.00	$23,664.00
Traffic Control	1	%	$315,520.00	$315,520.00	Yes	$220,864.00	$94,656.00
				$1,774,800.00		**$1,242,360.00**	**$532,440.00**

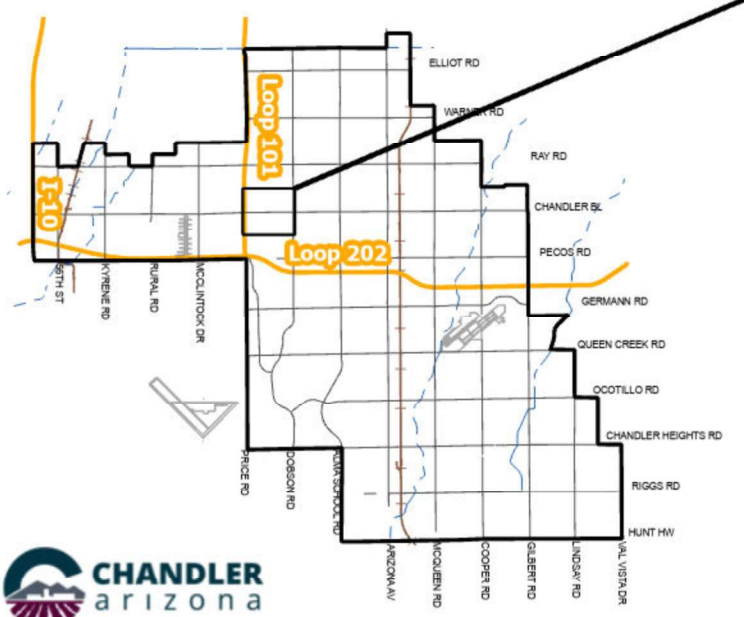
ADOT Review Fee

(not eligible for federal aid)

Certified accepted by ADOT for construction: No

Line Item	Agency Type	Rate	Hours	Total





Arterial Rehabilitation and Reconstruction Program

Project Area

CHANDLER arizona

NTS

ChanGIS

CHANDLER arizona
Community of Innovation

City Council Memorandum Cultural Development Memo No. CP25-128

Date: June 12, 2025
To: Mayor and Council
Thru: Joshua H. Wright, City Manager
Andy Bass, Deputy City Manager
Kim Moyers, Cultural Development Director
Daniel Haskins, Capital Projects Division Manager
From: Hafiz Noor, Construction/Design Project Manager
Subject: Job Order Project Agreement No. CA2206.402 with Achen-Gardner Construction, LLC, Pursuant to Job Order Master Agreement No. JOC2404.401, for Downtown Alley Improvements from California Street to San Marcos Alleyway

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Proposed Motion:

Move City Council award Job Order Project Agreement No. CA2206.402 to Achen-Gardner Construction, LLC, Pursuant to Job Order Master Agreement No. JOC2404.401, for Downtown Alley Improvements from California Street to San Marcos Alleyway, in an amount not to exceed $373,634.88.

Background/Discussion:

The Downtown Alley Improvements Project encompasses the alleyway located between California Street and San Marcos Place, bounded by Boston Street to the south and Commonwealth Avenue to the north.

The purpose of the project is to repair and enhance vehicle and pedestrian access, improve safety, and support a range of alleyway functions. The alley is frequently used for pedestrian circulation, service vehicle operations, general vehicular access, and other public uses.

The scope of work includes surface improvements, including stamped asphalt, valley gutters, vertical curbs, signage, and lighting upgrades. The project is scheduled for completion within 90 calendar days following the issuance of the Notice to Proceed.

Evaluation:

The selection process was conducted in accordance with city policy and procedure and state law. The costs proposed for this project have been evaluated by staff and determined to be reasonable.

Fiscal Impact

Account No.	Fund Name	Program Name	Dollar Amount	CIP Funded Y/N
411.4320.5219.0.6CA671.0	Streets General Obligation Bonds	Downtown Alley Projects	$373,634.88	Y

Attachments

Agreement - CA2206.402

Location Map

Docusign Envelope ID: 9EC46727-5B91-4B91-8768-8D7161961AE2

CITY OF CHANDLER
JOB ORDER PROJECT AGREEMENT

DOWNTOWN ALLEY IMPROVEMENTS
(CALIFORNIA STREET TO SAN MARCOS ALLEYWAY)
Project No. CA2206.402
Council Date: June 12, 2025

This JOB ORDER PROJECT AGREEMENT ("Job Order") is made this _____ day of _____ 2025 ("Effective Date"), by and between the City of Chandler, an Arizona municipal corporation, ("City") and Achen-Gardner Construction, LLC, an Arizona limited liability company, ("JOC Contractor") and is entered into pursuant to Job Order Master Agreement No. JOC2404.401 ("JOC Master Agreement"). City and JOC Contractor may be referred to individually as "Party" or collectively as "Parties").

City and JOC Contractor, in consideration of the mutual covenants herein set forth, agree as follows:

RECITALS

A. On or about February 7, 2024, the Parties entered into the JOC Master Agreement, which terms and conditions are made a part of and incorporated into this Job Order Project Agreement by this reference.

B. City proposes to engage JOC Contractor for construction services as more fully described in Article 1 and **Exhibit "A"**, which is attached to and made a part of this Job Order by this reference.

C. JOC Contractor is ready, willing, and able to provide the services described in **Exhibit "A"** for the compensation and fees set forth and as described in **Exhibit "B"**, which is attached to and made a part of this Agreement by this reference.

ARTICLE 1. DESCRIPTION OF WORK

The Parties enter into this Job Order Project Agreement for the Downtown Alley Improvements (California Street to San Marcos Alleyway), Project Number CA2206.402. The Downtown Alley Improvements consist of surface enhancements, stamp asphalt, valley gutter, vertical curbs, signs, and lighting improvements, all as more particularly set forth in **Exhibit "A"** attached hereto and incorporated herein by reference.

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The JOC Contractor will not accept any change of scope, or change in Agreement provisions, unless issued in writing, as a Agreement amendment or change order and signed by the authorized signatories for each party.

Performance and Payment Bonds, as set forth in **Exhibit "C"** and **Exhibit "D"** respectively attached hereto and incorporated herein by reference, will be due prior to execution of each Job Order Project Agreement in the full amount of each Job Order.

At project completion, JOC Contractor must complete Contractor's Affidavit Regarding Settlement of Claims and Certificate of Completion, as set forth in **Exhibit "E"** and **Exhibit "F"** respectively attached hereto and incorporated herein by reference.

ARTICLE 2. PROJECT PRICE

City will pay JOC Contractor for completion of the Work in accordance with the JOC Master Agreement a fee not to exceed the Guaranteed Maximum Price of $373,634.88 Dollars determined and payable as set forth in JOC Master Agreement and **Exhibit "B"** attached hereto and made a part hereof by reference.

ARTICLE 3. AGREEMENT TIME & SCHEDULE

JOC Contractor agrees to complete all Construction within 90 calendar days from the Notice to Proceed (NTP) Date.

ARTICLE 4. JOB ORDER CONTACTS

The following parties serve in the capacity below for this Job Order Project.

CITY:	Construction Project Manager: Scott Riter	
	Phone:	480-782-3328
	Email:	Scott.Riter@chandleraz.gov
JOC CONTRACTOR:	Achen-Gardner Construction, LLC	
	2195 West Chandler Boulevard, Suite 200, Chandler, AZ 85224	
	JOC Contractor Representative: Bryan Mueller	
	Phone:	480-940-1300
	Email:	bmueller@achen.com

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ARTICLE 5. FORCED LABOR OF ETHNIC UYGHURS PROHIBITED

By entering into this Agreement, Contractor certifies and agrees Contractor does not currently use and will not use for the term of this Agreement: (i) the forced labor of ethnic Uyghurs in the People's Republic of China; or (ii) any goods or services produced by the forced labor of ethnic Uyghurs in the People's Republic of China; or (iii) any contractors, subcontractors or suppliers that use the forced labor or any goods or services produced by the forced labor of ethnic Uyghurs in the People's Republic of China

SIGNATURE PAGE TO FOLLOW

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IN WITNESS WHEREOF, the Parties have executed this Job Order as of the Effective Date.

"CITY"
CITY OF CHANDLER

Mayor

RECOMMENDED BY:

Daniel Haskins May 20, 2025
Daniel Haskins, P.E.
CIP City Engineer

APPROVED AS TO FORM:

City Attorney JWB

ATTEST:

City Clerk Seal

"JOC CONTRACTOR"
ACHEN-GARDNER CONSTRUCTION, LLC

Bryan Mueller May 20, 2025
Signature Date

Bryan Mueller
Print Name

Vice President
Title

bmueller@achen.com
Signer Email Address

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EXHIBIT A
SCOPE OF WORK

Docusign Envelope ID: 9EC46727-5B91-4B91-8768-8D7161961AE2

Hallway Alley Improvements California St. to San Marcos Alley Construction Proposal

May 15, 2025

City of Chandler | Public Works & Utilities Department
Mr. Scott Riter
215 E. Buffalo Street
Chandler, Arizona 85224

City of Chandler Project No.: CA2206.402
Achen-Gardner Construction, LLC Project No.: 4105101

Dear Mr. Riter:
Attached please find Achen-Gardner Construction, LLC's ("Achen-Gardner") initial proposal for the Hallway Alley Improvements California St. to San Marcos Alley construction scope of work as noted on Exhibit "A" attached. The breakdown of the project costs is as follows:

1) Project Total = **$373,634.88**

The completed Proposal totals $333,634.88 for construction activities on the Chandler Alley Way Improvements project. See Exhibit "B" for the Job Order Cost Proposal – Summary Sheet.

Should you have any questions and/or comments, please feel free to contact me via cell phone at (480) 403-9399 or e-mail dbroderick@achen.com.

Sincerely,
ACHEN-GARDNER CONSTRUCTION, LLC

Dan Broderick, Sr. Project Manager

Attachments:
Exhibit A - SCOPE OF WORK, PROJECT-SPECIFIC CONDITIONS
Exhibit A.2 - PROJECT BASELINE SCHEDULE
Exhibit B - JOB ORDER COST PROPOSAL SHEET
Exhibit B.2 – GENERAL CONDITIONS AND SCHEDULE OF VALUES
Exhibit B.3 - LIST OF GMP DOCUMENTS
Exhibit G – SUBCONTRACTOR AND SUPPLIER QUOTATIONS

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EXHIBIT A: SCOPE OF WORK, PROJECT-SPECIFIC CONDITIONS

MAY 15, 2025

CITY OF CHANDLER – Hallway Alley Improvements California St. to San Marcos Alley

PROJECT NO: CA2206.402

Achen-Gardner Construction proposes to perform construction as noted in the following Exhibits and Scope of Work narrative:

- This project scope includes subgrade preparation for approximately 513 square yards, followed by installing 3-inch asphalt concrete (AC) pavement over 6 inches of aggregate base course (ABC). It also includes 511 square yards of AC pavement and 300 linear feet of AC thickened edge. The scope further covers the construction of approximately 1,079 square feet of concrete valley gutter. Demolition and removals include existing asphalt pavement, water meter box, concrete valley gutter, and signage. Additional work items include installation of a traffic sign support system, removal and replacement of water meter boxes to traffic-rated utility box and cover, concrete equipment pad, void filling and compaction, pavement marking arrows, and placement of 740 square feet of 3 inches of decomposed granite for landscape or ground cover treatment.
- Additional add for asphalt stamping and painting is itemized and included in Exhibit B.2.
- The quantities for this project (Project No. CA2206.402) are as per Exhibit B.2 – Schedule of Values.
- Schedule Assumptions: Project duration is 4 weeks
- Work hours shall be regular daytime work hours, Monday through Friday. This does not include the cost of any work to be done during unscheduled overtime or weekends. Any necessary weekend work will be an additional cost to the contract.
- The proposal is based on the attached vendor's and subcontractor's proposals, including their inclusions and exclusions.
- Owner's (City) Allowance: Additional services may be required during the course of design and/or construction due to unforeseen circumstances/conditions. This allowance is intended for additional services (detailed description to be defined later) that will be provided upon written authorization from the city.
- This Proposal excludes:
  - SWPPP plan, manual, and NOI (Achen Gardner is disturbing less than one acre)
  - City permit and plan review fees, Quality Assurance (QA), City inspection and testing costs, impact fees, and utility company fees
  - Handling/disposing of hazardous materials
  - Acquisition of temporary/permanent easements and/or rights-of-way
  - Night, weekend, and overtime hours
  - Off-duty police officers
  - The city is allowing full closure of the alley, and work will be continuous without interruption.
  - Relocation of the existing Guy wire and foundation

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EXHIBIT A.1 - PROJECT BASELINE SCHEDULE
MAY 15, 2025
CITY OF CHANDLER - Hallway Alley Improvements California St. to San Marcos Alley
Project NO. CA2206.402

PROJECT SCHEDULE - CHANDLER ALLEYWAY IMPROVEMENTS

ACHEN-GARDNER CONSTRUCTION
2195 W. Chandler Boulevard, Suite 200
Chandler. AZ 85224
PHONE: (480) 940-1300 FAX: (480) 940-4576

PROJECT: Chandler Downtown Alley Improvements
Date : 5/15/25

Project Schedule

AGC Job #: 4105101

July

ACTIVITY	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	NOTES X = Day Time Work N = Night Time Work
	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	
Mobilize and Yard Setup	X	X																								
Remove Meter Boxes, Bollards, Signs		X	X	X																						
Remove Sidewalk and Ramp		X	X	X																						
Subgrade Prep and Scarify					X			X																		
FPS Concrete Slab									X	X		X			X	X										
Place Concrete Curb									X	X																
Sawcut AC and Concrete											X															
Concrete Valley Gutter and Tie-in												X			X	X										
Install Meter Boxes															X											
Place ABC																X	X									
Remove AC																	X									
Place Decomposed Granite																	X									
Place Asphalt and Thickened Edge																		X	X							
Stamp and Paint Asphalt																						X	X			
Install Traffic Signage																						X				
Adjust Valves																						X				
Cleanup and Punchlist																							X	X	X	

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EXHIBIT B
FEE SCHEDULE

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5/15/2025

ACHEN GARDNER

EXHIBIT "B"

JOB ORDER COST PROPOSAL
SUMMARY SHEET

Negotiated Prices			
Price of Subcontractor(s)		$	53,645.00
Price of Subconsultant(s)		$	-
General Conditions		$	55,077.00
Preconstruction Labor (if applicable)		$	-
Construction Labor (if applicable)		$	171,783.00
SUBTOTAL (NEGOTIATED PRICES):		**$**	**280,505.00**
Overhead and Profit (Coefficient per Job Order Master Agreement)	**9.00%**	**$**	**25,245.45**
TOTAL (NEGOTIATED PRICES + OVERHEAD & PROFIT):		**$**	**305,750.45**
Insurance, Bonds, & Taxes			
Sales Tax Percentage (Current Tax Rate) **ENTER TAX % HERE:**	**5.07%**	$	15,501.55
General Liability Insurance Percentage (Actual Cost per Job Order)		$	5,962.13
Builder's Risk Insurance Percentage (Actual Cost per Job Order)		$	1,528.75
Payment Bond (Actual Cost per Job Order)		$	2,446.00
Performance Bond (Actual Cost per Job Order)		$	2,446.00
SUBTOTAL (INSURANCE, BONDS, & TAXES):		**$**	**27,884.43**
COMBINED TOTAL (TOTAL + INSURANCE, BONDS, & TAXES):		**$**	**333,634.88**
City's Allowance		**$**	**40,000.00**
TOTAL JOB ORDER:		**$**	**373,634.88**

Per the Job Order Master Agreement - This Fee Table includes all fees, costs, insurance and bond premiums, allowances, construction contingency, and taxes of any type necessary to fully, properly and timely perform and construct the Work. Also per the Job Order Master Agreement - For any portion of the Work which, either through this Contract, Change Order or otherwise, is performed and paid for on a cost, or time and materials basis, the costs may be reimbursed to JOC Contractor and chargeable against the Contract Price will be determined as set forth in MAG 109.5.

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CITY OF CHANDLER - Alley way Improvements **5/15/2025**
PROJECT NO.: CA2206.402

EXHIBIT B.2 - GENERAL CONDITIONS

ACHEN-GARDNER CONSTRUCTION, LLC
550 S. 79th STREET
CHANDLER, AZ 85226
PROJECT NO.: **4105101**

PAY ITEM	DESCRIPTION	QUANTITY	UM	UNIT PRICE	TOTAL
188.01	PROJECT SUPERINTENDENT/VEHICLE	176.00	HR	150.93	26,563.68
188.02	PROJECT MANAGER/VEHICLE	44.00	HR	150.92	6,640.48
188.03	PROJECT ENGINEER/VEHICLE	44.00	HR	122.11	5,372.84
188.04	ICE AND WATER	20.00	DY	10.00	200.00
188.05	YARD RENTAL (CITY OWNED ON PROJECT SITE - NC)	1.00	LS	-	0.00
188.06	YARD FENCING	2.00	MO	650.00	1,300.00
188.07	YARD / FIELD TOILET (2)($150 EA / MO)	2.00	MO	500.00	1,000.00
188.08	BUY CONSTRUCTION WATER	1.00	LS	2,500.00	2,500.00
188.09	SWEEPING	1.00	LS	2,500.00	2,500.00
188.10	DUMP FEES	1.00	LS	2,500.00	2,500.00
188.16	END OF PROJECT CLEANUP	1.00	LS	5,000.00	5,000.00
188.17	SMALL TOOLS AND SUPPLIES	1.00	LS	1,500.00	1,500.00
	GENERAL CONDITIONS (DIRECT COSTS)				**55,077.00**
188	**MONTHLY GENERAL CONDITIONS**	**1**	**MO**	**55,077.00**	

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EXHIBIT B.2 - SCHEDULE OF VALUES
MAY 15, 2025
CITY OF CHANDLER - Hallway Alley Improvements California St. to San Marcos Alley
Project NO. CA2206.402

CHANDLER arizona

HALL WAY ALLEY

City of Chandler Project No. CA2206.401 April 15, 2025

QUANTITIES (100% SUBMITTAL)

ACHEN GARDNER

	REMOVALS & RELOCATIONS				
					$ 055.00
2	Mobilization/Demobilization	LS	1	$ 26,548.00	$ 26,548.00
3	Subgrade Preparation	SY	513	$ 67.00	$ 34,371.00
4	Pavement Section No.1 (3" AC on 6" ABC)	SY	511	$ 37.00	$ 18,907.00
5	AC Thickened Edge (MAG STD DET 201, Type A)	LF	300	$ 21.00	$ 6,300.00
6	Single Curb (MAG Std Det 222, Type A)	LF	275	$ 32.00	$ 8,800.00
7	Concrete Valley Gutter (MAG Std Det 240) (MODIFIED)	SF	1,079	$ 14.00	$ 15,106.00
8	Adjust Valve Box Frame & Cover w/ Concrete Collar (MAG Std Det 391-1, Type A)	EA	3	$ 1,128.00	$ 3,384.00
9	Remove Asphaltic Concrete Pavement	SY	50	$ 67.00	$ 3,350.00
10	Remove Concrete Driveway	SF	33	$ 45.00	$ 1,485.00
11	Remove Concrete Valley Gutter	SF	10	$ 152.00	$ 1,520.00
12	Remove Water Meter Box	EA	6	$ 720.00	$ 4,320.00
13	Remove Sign	EA	1	$ 926.00	$ 926.00
14	Install Traffic Sign System	EA	6	$ 162.00	$ 972.00
15	Traffic Control	LS	1	$ 9,568.00	$ 9,568.00
16	Traffic Rated Box & Cover (MAG Std Det 319 Box Number 1324 w/ Circular Antennae)	EA	5	$ 1,460.00	$ 7,300.00
17	Concrete Pad	SF	16	$ 419.00	$ 6,704.00
18	Relocate Guy Wire and Foundation	EA	1	na	na
19	Fill & Compact Voids	EA	1	$ 9,665.00	$ 9,665.00
20	3" Decomposed Granite, 1/2" Minus (Desert Gold)	SF	740	$ 24.00	$ 17,760.00
21	Preformed Pavement Marking Arrows	EA	3	$ 432.00	$ 1,296.00
22	Permits	LS	1	$ 4,365.00	$ 4,365.00
	TOTAL CONSTRUCTION				**$ 191,702.00**
ALT	Asphalt Stamping & Painting	SY	511	66	$ 33,726.00
	TOTAL CONSTRUCTION WITH ALTERNATE				**$ 225,428.00**
	IMPROVEMENTS BY APS				
1	Install Streetlight	EA	2	na	na

Proposal for construction services - 5/15/25
General Conditions included in Exhibit B:
Price of Subcontractors $53,645.00
Price of AGC Self Performance: $171,783.00
Sub total = $225,428.00
General Conditions = $55,077.00
Project Subtotal = $280,505.00

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EXHIBIT B.3: LIST OF JOC DOCUMENTS

MAY 15, 2025

CITY OF CHANDLER – Hallway Alley Improvements California St. to San Marcos Alley

PROJECT NO: CA2206.401

- Dibble - 100% plan set *Downtown Alley Improvements (California, Boston & Commonwealth)* – Dated April 15, 2025.
- City of Chandler via Andrew Sprea, PE. – 100% Technical Specifications, *Hallway Alley Improvements California St. to San Marcos Alley City of Chandler Project No. CA2206.401* – Dated April 15, 2025.
- Dibble – Hallway Alley Quantities (100% Submittal) – Dated April 15, 2025.

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EXHIBIT C

PERFORMANCE BOND

ARIZONA STATUTORY PERFORMANCE BOND
PURSUANT TO TITLES 28, 34, AND 41, ARIZONA REVISED STATUTES
(Penalty of this bond must be 100% of the Agreement amount)

KNOW ALL MEN BY THESE PRESENTS THAT:_____

(hereinafter "Principal"), and _____ (hereinafter "Surety"), a corporation organized and existing under the laws of the State of _____ with its principal office in the City of _____, holding a certificate of authority to transact surety business in Arizona issued by the Director of Insurance pursuant to Title 20, Chapter 2, Article 1, as Surety, are held and firmly bound unto _____(hereinafter "Obligee") in the amount of _____ (Dollars) ($_____), for the payment whereof, Principal and Surety bind themselves, and their heirs, administrators, executors, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has entered into a certain written Agreement with the Obligee, dated

the _____ day of _____, 20___ for construction of Downtown Alley Improvements (California Street to San Marcos Alleyway)**,** CA2206.402 which Agreement is hereby referred to and made a part hereof as fully and to the same extent as if copies at length herein.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that if the Principal faithfully performs and fulfills all the undertakings, covenants, terms, conditions and agreements of the Agreement during the original term of the Agreement and any extension of the Agreement, with or without notice of the Surety, and during the life of any guaranty required under the Agreement, and also performs and fulfills all the undertakings, covenants, terms, conditions, and agreements of all duly authorized modifications of the Agreement that may hereafter be made, notice of which modifications to the Surety being hereby waived, the above obligation is void. Otherwise it remains in full force and effect.

PROVIDED, HOWEVER that this bond is executed pursuant to the provisions of Title 34, Chapter 2, Article 2, Arizona Revised Statutes, and all liabilities on this bond will be determined in accordance with the provisions of Title 34, Chapter 2, Article 2, Arizona Revised Statutes, to the same extent as if it were copied at length in this Agreement.

The prevailing party in a suit on this bond may recover as part of the judgment reasonable attorney fees that may be fixed by a judge of the court.

Witness our hands this _____ day of _____, 20__.

_____
PRINCIPAL SEAL

_____
AGENT OF RECORD

By _____

_____
SURETY SEAL

Docusign Envelope ID: 9EC46727-5B91-4B91-8768-8D7161961AE2

EXHIBIT D

PAYMENT BOND

ARIZONA STATUTORY PAYMENT BOND
PURSUANT TO TITLES 28, 34, AND 41, OF THE ARIZONA REVISED STATUTES
(Penalty of this Bond must be 100% of the Agreement amount)

KNOW ALL MEN BY THESE PRESENTS THAT:_____

(hereinafter "Principal"), as Principal, and _____(hereinafter "Surety"), a corporation organized and existing under the laws of the State of _____ with its principal office in the City of _____, holding a certificate of authority to transact surety business in Arizona issued by the Director of the Department of Insurance pursuant to Title 20, Chapter 2, Article 1, as Surety, are held and firmly bound unto _____ (hereinafter "Obligee") in the amount of _____ (Dollars) ($_____), for the payment whereof, the Principal and Surety bind themselves, and their heirs, administrators, executors, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has entered into a certain written Agreement with the Obligee, dated the _____ day of _____, 20___ for construction of Downtown Alley Improvements (California Street to San Marcos Alleyway)**,** CA2206.402 which Amendment is hereby referred to and made a part hereof as fully and to the same extent as if copied at length herein.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that if the Principal promptly pays all moneys due to all persons supplying labor or materials to the Principal or the Principal's subcontractors in the prosecution of the work provided for in said Agreement, this obligation is void. Otherwise it remains in full force and effect.

PROVIDED, HOWEVER that this bond is executed pursuant to the provisions of Title 34, Chapter 2, Article 2 Arizona Revised Statutes, and all liabilities on this bond will be determined in accordance with the provisions, conditions and limitations of Title 34, Chapter 2, Article 2, Arizona Revised Statutes, to the same extent as if it were copied at length in this Agreement.

The prevailing party in a suit on this bond may recover as part of the judgment reasonable attorney fees that may be fixed by a judge of the court.

Witness our hands this _____ day of _____, 20__.

_____
PRINCIPAL SEAL

_____
AGENT OF RECORD

By _____

_____
SURETY SEAL

_____
AGENT ADDRESS

Docusign Envelope ID: 9EC46727-5B91-4B91-8768-8D7161961AE2

EXHIBIT E

CONTRACTOR'S AFFIDAVIT REGARDING SETTLEMENT OF CLAIMS

_____, Arizona

Date _____

Project: **DOWNTOWN ALLEY IMPROVEMENTS (CALIFORNIA STREET TO SAN MARCOS ALLEYWAY)**
Project No.: **CA2206.402**

To the City of Chandler, Arizona

Gentlemen:

This is to certify that all lawful claims for materials, rental of equipment and labor used in connection with the construction of the above project, whether by subcontractor or claimant in person, have been duly discharged.

The undersigned, for the consideration of $_____, as set out in the final pay estimate, as full and complete payment under the terms of the Agreement, hereby waives and relinquishes any and all further claims or right of lien under, in connection with, or as a result of the above described project. The undersigned further agrees to indemnify and save harmless the City of Chandler against any and all liens, claims or liens, suits, actions, damages, charges and expenses whatsoever, which said City may suffer arising out of the failure of the undersigned to pay for all labor performances and materials furnished for the performance of said installation.

Signed and dated at _____, this _____ day of _____ 20____.

_____
CONTRACTOR

By _____

STATE OF ARIZONA)
) SS
COUNTY OF MARICOPA)

The foregoing instrument was subscribed and sworn to before me this _____ day of _____ 20 _____.

_____
Notary Public

_____
My Commission Expires

Docusign Envelope ID: 9EC46727-5B91-4B91-8768-8D7161961AE2

EXHIBIT F

CERTIFICATE OF COMPLETION

Project: **DOWNTOWN ALLEY IMPROVEMENTS (CALIFORNIA STREET TO SAN MARCOS ALLEYWAY)**

Project No.: **CA2206.402**

(TO BE COMPLETED BY CONTRACTOR)

I HEREBY CERTIFY THAT ALL GOODS AND/OR SERVICES REQUIRED BY CITY OF CHANDLER PROJECT NO. CA2206.402 HAVE BEEN DELIVERED IN ACCORDANCE WITH THE AGREEMENT DOCUMENTS AND BID SPECIFICATIONS AND ALL ACTIVITIES REQUIRED BY THE CONTRACTOR UNDER THE AGREEMENT HAVE BEEN COMPLETED AS OF _____.
(Date)

FIRM NAME: _____

PRINCIPAL: _____
(Name)

_____
(Signature)

_____ DATE: _____
(Title)

CERTIFIED BY ENGINEER/CONSULTANT (*IF APPLICABLE*):

_____ DATE: _____
(Signature)

_____
(Firm Name)

PROJECT ACCEPTED BY USER DEPARTMENT

_____ DATE: _____
(Signature)

_____
(Dept. /Div.)

_____ Date of Final Walk-Through

_____ Date As-Built Received

_____ City As-Built Number

Docusign Envelope ID: 9EC46727-5B91-4B91-8768-8D7161961AE2

EXHIBIT G

SUBCONTRACTOR DOCUMENTS WITH JOC CONTRACTOR

Any subcontractor assumptions, clarifications, exclusions, terms & conditions, signature blocks, etc. included are strictly between the JOC Contractor and their subcontractors, and do not apply to the Agreement between the JOC Contractor and the City.

Docusign Envelope ID: 9EC46727-5B91-4B91-8768-8D7161961AE2

QUOTATION

Vulcan Materials Company and Subsidiaries

Date: 05/01/2025
Quote #: 2008899320
Account: 213235

ACCOUNT : ACHEN-GARDNER CONSTRUCTION LLC

QUOTE NAME : CHANDLER HALL WAY ALLEY / 179 W COMMONWEALTH AVE / CHANDLER

Bill-To Address: 2195 W. CHANDLER BLVD, Suite 200
CHANDLER AZ 85224

Attn: Carson Bryce

Ship-To Address: 179 W COMMONWEALTH AVE AZ051099
CHANDLER AZ 85225

Effective Date: 05/01/2025
Expiration Date: 05/31/2025
Upon Acceptance Price Valid Until: 09/30/2025

Sales Representative: Lyndsay Ervine
Phone: +1 (480) 647-5404
Email: ervinel@vmcmail.com

100 - Aggregates

Plant	Product ID	Product Name	Qty	U/M	Unit Price	Haul Rate	Total Delivered Price
VAL VISTA SAND & GRAVEL	16272	MAG SPEC ABC LIME TREATED	169	TON	$14.25	$9.20	$23.45

200 - Asphalt

Plant	Product ID	Product Name	Qty	U/M	Unit Price	Haul Rate	Total Delivered Price
SAN TAN HMA	331517T	1/2" EVAC PG 70-10	100	TON	$81.00	$9.00	$90.00

ADDITIONAL CHARGES

Product ID	Product Name	Price/%	Per UOM
ENVFEE	Environmental Fee -Agg & Asphalt	$4.00	LOAD

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ADDITIONAL INFORMATION

HMA ORDER VOLUME: All daily orders under 100 tons of asphalt will incur Gomez Price plus the haul charge.
MATERIAL PRICING: Quoted material prices are valid only until the quote/sales order expiration date, regardless of quote acknowledgment or PO status. Prices for materials provided after the expiration date are subject to increase.
PRODUCTION AND AVAILABILITY: Vulcan Materials plants serve multiple customers and strive to meet all production timelines. However, Vulcan is not responsible for project or trucking delays due to material or production availability. Quotes are subject to product/material availability, and production is scheduled on a first-come, first-served basis.
MATERIAL SPECIFICATIONS: Quoted materials are based on specifications not reviewed. Any required changes or substitutions from what is on this quote are subject to price adjustment.

Logistics / Hauling:
Trucking is based on availability and Vulcan Materials will not be held responsible for schedule impacts due to trucking shortages. The delivered price is based on 23.50 tons (full load); a short load fee will apply if under 23.50 tons. Truck stand-by will be charged on-site after the first 20 minutes at the rate of $100 per hour or $1.67 per minute. All night work will be subject to an 8-hour minimum hourly haul charge and subject to additional charges pending the hauler charging an additional 8 hrs due to days' worth of work that is lost. Any cancellation of night work needs to be done 24 hours ahead of schedule. All weekend work will be subject to a 4-hour minimum hourly haul charge.

Product Availability:
Prices quoted are for regular business hours: Monday - Friday, 6 AM to 5 PM. Plant premiums will apply for nightwork and/or weekends. Overtime will be subject to a charge of $350.00 per hour.

The quote is subject to product or material availability due to current aggregate demand.

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Prices quoted above do not include any state or local sales and use tax, if any applies for this project.
Prices quoted are for shipments during normal daytime working hours unless other shipping hours are mutually agreed upon in writing by both parties.

All prices are FOB point of shipment from the designated location unless a delivered price is stated. Terms are Net 15 prox. Please note standard terms and conditions apply. (Subject to credit approval).

This quote is limited to acceptance within 30 days from the date of this quotation after which time quotation is subject to review/revision. Please contact Sales prior to placing the order.

Accepted by: _____ **Date:** _____

Sales Representative: _____ **Date:** _____

We appreciate the opportunity to provide you this quote and trust that Vulcan will have the pleasure of serving your needs for this and future projects.

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GENERAL TERMS AND CONDITIONS

Prices are based on the terms and conditions set forth on page 1 of this Quotation, of which these General Terms and Conditions form a part, the terms and conditions stated in Customer's Application for Business Credit, and, if applicable, any terms and conditions relating to the delivery or shipment of materials by truck, barge, vessel, rail or other means which are provided by Vulcan to Customer in addition to this Quotation (each, a "Vulcan Sales Document", and collectively, the "Vulcan Sales Documents"). Prices are available only to the customer specifically named therein, and are only for the quantities mentioned in such Quotation or Sales Order plus or minus 10% of such quantities. A charge of 1.5% per month, (18% annum), will accrue on a daily basis from the date of invoice and will continue to accrue on a daily basis on any unpaid balance, both before and after judgment, until the date the balance is paid in full, or at the maximum amount permitted by law in which the sale occurred, whichever is less. However, the assessment of a finance charge on invoices paid in full by the payment due date will be waived. Quotation is offered for furnishing the total aggregate requirements for the project only. Customer's contract with Vulcan regarding the sale by Vulcan to Customer of the materials listed in this Quotation is subject to the terms and conditions set forth in the Vulcan Sales Documents. Prices reflect Customer's acceptance of materials at the quoted plant based upon gradation analysis performed and reported by Vulcan's certified plant quality control personnel. Any penalties that result from in place sampling shall be the full responsibility of Customer.

THE TERMS AND CONDITIONS OF THE VULCAN SALES DOCUMENTS GOVERN THE RIGHTS AND OBLIGATIONS OF THE PARTIES
If Customer has issued a purchase order for the materials quoted by Vulcan in this Quotation, this Quotation is not an acceptance of said purchase order, or any of its terms or conditions, which are hereby rejected. Any sale by Vulcan to Customer of the materials listed in this Quotation shall be subject to the terms and conditions set forth in the Vulcan Sales Documents, and Customer's receipt or acceptance of said materials shall constitute acceptance of the offer that this Quotation constitutes. Any terms or conditions of a subsequent purchase order issued by Customer that are inconsistent with the terms and conditions of the Vulcan Sales Documents shall be null and void.

SHIPMENT AND DELIVERY
Unless a "delivered" price is quoted by Vulcan in the Vulcan Sales Documents, all prices are F.O.B. point of shipment from the locations designated. All taxes applicable to the sale or delivery of materials that are not paid directly by Customer will be added to the sales price, invoiced to and paid by Customer, unless Customer provides Vulcan with satisfactory evidence of exemption from same. Shipment will be in accordance with Customer's reasonable instructions or, if none, then by whatever means Vulcan shall deem practicable. The quantities of material delivered to Customer shall be conclusively presumed to be the quantities shown on the tickets produced from a certified weigh scale at Vulcan's quarry or sales yard.

CREDIT AND DEFAULT
Vulcan shall have no obligation to ship or deliver except upon its determination prior to each shipment or delivery that Customer is worthy of the credit to be extended and is not in default upon any obligation to Vulcan. Upon default, Customer agrees to pay all of Vulcan's collection expenses, including attorneys' fees.

INSURANCE
A Memorandum of Insurance containing current information regarding Vulcan's insurance program is available at
https://marshdigital.marsh.com/marshconnect/viewMOI.action?clientId=632529479

EXCULPATORY PROVISIONS
Vulcan shall have no liability for delay or failure to make shipments, or delivery, as a result of strikes, labor problems, severe weather conditions, casualty, mechanical breakdown or other conditions beyond Vulcan's reasonable control. In no event shall Vulcan be liable for any incidental or consequential damages. Vulcan's liability and Customer's exclusive remedy for any cause of action arising out of the provision of material quoted herein shall be the replacement of, or payment of the purchase price for, the materials which are the subject of this Quotation

CHANGE OF TERMS
Vulcan may change the price and/or quantity upon 30 days' notice to Customer. Vulcan shall also have right to change, modify or amend any other terms and conditions upon written notice of such change to customer. The effect of the change shall be as stated in the written notice and accepted by Customer upon placing of orders with seller following receipt of such notice.

APPLICABLE LAW
All orders are subject to acceptance by Vulcan at the headquarters of its Mountain West Division in Phoenix, Arizona, and the laws of the state in which the materials was shipped from shall apply to the sale of all materials subject hereto. In the event material is imported into the U.S., the law in the state in which the material was sold to the customer will prevail. All disputes regarding finance charges shall be governed by Alabama law

LIMITED WARRANTY AND WARRANTY DISCLAIMER
Vulcan warrants for a period of one (1) year from date of delivery only that the material sold hereunder substantially complies with Vulcan's specifications for said material or the specifications set forth in Vulcan's quotation. **VULCAN HEREBY EXCLUDES ALL WARRANTIES OF MERCHANTABILITY AND FITNESS FOR ANY PURPOSE, AND ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, OF THE MATERIAL SOLD HEREUNDER, OTHER THAN THE EXPRESS WARRANTY STATED ABOVE.** In addition, except to the extent otherwise set forth in the specifications described above, Vulcan makes no warranty whatsoever with respect to specific gravity, absorption, whether the material is innocuous, non-deleterious, or non-reactive, or whether the material is in conformance with any plans, other specifications, regulations, ordinances, statutes, or other standards applicable to Customer's job or to said material as used by Customer. VULCAN SHALL IN NO EVENT BE RESPONSIBLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGE CAUSED BY NON-COMPLIANCE OF THE MATERIAL WITH SPECIFICATIONS, OR FOR ANY DEFECTS IN THE MATERIAL SOLD HEREUNDER

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CREATIVE PAVING SOLUTIONS

"THE EVOLUTION OF PAVING TECHNOLOGY"

Dba Creative Paving Coating Solutions
Proposal

Achen-Gardener Construction
Bryon Lively
(602) 741-1054
2195 W Chandler Blvd #200, Chandler, AZ 85224
Via e-mail to: blively@achen.com
May 7, 2025

Job Number: 250150
City of Chandler Alleyway
Chandler, AZ

Creative Paving Solutions proposes furnishing the materials and performing the labor necessary to complete the line items listed below:

Line Item 1 – Stamped Asphalt– We will prep, layout, stamp, coat, and seal approximately 4,557 square feet of existing new asphalt using Decocoat Polymer Systems DP-200 and Decocoat Polymer Systems Sealer Concentrate. The pattern and color will determined by the owner. We will do this work for $6.75 per square foot for a total of $30,759.75 plus applicable sales taxes.

THIS PRICE DOES NOT INCLUDE MULTICOLOR STAMPED ASPHALT, ASPHALT/CONCRETE REPAIR, TRAFFIC CONTROL, ASPHALT/CONCRETE PAVING, WEEKEND WORK, DAVIS BACON WAGES, UNION WAGES AND/OR PREMIUM PAY NOT CAUSED BY CREATIVE PAVING.
CREATIVE PAVING IS NOT RESPONSIBLE FOR CURRENT AND/OR FUTURE CRACKS OR BELOW GRADE MOISTURE.
THE SCHEDULE CAN CHANGE DUE TO INCLEMENT WEATHER.

- Any additional square footage will be charged at the same rates as shown above per square foot plus applicable sales taxes.
- Prices are valid for sixty days from the date of this proposal.
- Payment will be made as follows:
  - Payments will be due 30 days after invoicing. We offer a 2% discount on any full invoice (without retention deducted) paid within 7 days of invoice date. Invoices not paid within 45 days of invoice date will be subject to a 1.8% finance charge per month.
  - **FINAL BILLING WILL BE BASED ON FIELD MEASUREMENTS OF ACTUAL WORK COMPLETED. IF ACTUAL FIELD MEASUREMENTS ARE 10% OR GREATER LESS THAN INITIALLY PROPOSED AN INCREASE IN THE PRICE PER SQUARE FOOT MAY BE REQUIRED.**
- Creative Paving Solutions is not responsible for and will not warranty any damage caused by anyone other than Creative Paving Solutions.
- Creative Paving Solutions will warranty all labor and material supplied by Creative Paving Solutions for one year from the date of substantial completion of this project.
- Exclusions:
  - Surveying and/or engineering
  - Bonds and permits
  - Cleaning prior to commencement of work (Heavy Duty)

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FERGUSON WATERWORKS

FERGUSON WATERWORKS #1821
1800 NORTH ARIZONA AVENUE
CHANDLER, AZ 85225-7014

Phone: 602-495-8420
Fax: 602-262-4276

Deliver To: **EXP 12/21 EM ECMS**
From: **Hector Flores**
hector.flores@ferguson.com
Comments:

FERGUSON WATERWORKS #3083
Price Quotation
Phone: 602-495-8420
Fax: 602-262-4276

Bid No: B451989
Bid Date: 05/07/25
Quoted By: HBF

Cust Phone: 480-940-1300
Terms: NET 10TH PROX

Customer: ACHEN GARDNER CONSTRUCTIO
2195 W CHANDLER BLVD STE 200
CHANDLER, AZ 85224

Ship To: ACHEN GARDNER CONSTRUCTIO
2195 W CHANDLER BLVD STE 200
CHANDLER, AZ 85224

Cust PO#: CHANDLER, AZ

Job Name: HALL WAY ALLY IMPROV

Item	Description	Quantity	Net Price	UM	Total
OB132451JH	B1324 #2 TRFC RATED LID	5	406.740	EA	2033.70
OB1324BOX	B1324 #2 TRFC RATED BX W /BLTS	5	259.440	EA	1297.20
BGRE5LHVTSK4WCL35	5-1/4 VLV BX LID WTR W/ 4 SKT CL35	3	67.490	EA	202.47
IVBATS16	16 SLIP VLV BX TOP SECT	3	73.260	EA	219.78
IVBABS24	24 SLIP VLV BX BOT SECT	3	85.180	EA	255.54
IVBABS36	36 SLIP VLV BX BOT SECT	3	120.950	EA	362.85
SDC457BL	DEBRIS CAP F/ 461S TOP BLUE	3	91.250	EA	273.75

Net Total:	$4645.29
Tax:	$0.00
Freight:	$0.00
Total:	$4645.29

Quoted prices are based upon receipt of the total quantity for immediate shipment (48 hours). SHIPMENTS BEYOND 48 HOURS SHALL BE AT THE PRICE IN EFFECT AT TIME OF SHIPMENT UNLESS NOTED OTHERWISE. QUOTES FOR PRODUCTS SHIPPED FOR RESALE ARE NOT FIRM UNLESS NOTED OTHERWISE.

Due to the uncertain impact of potential tariffs, Ferguson's quotation/proposal has not included any provision or contingency for future tariffs or increase of existing tariffs. Ferguson reserves the right to adjust prices to reflect the impact of any new or increased tariffs that affect our costs at the time of shipment. Ferguson will provide notice of any such adjustments along with documentation supporting the changes.

CONTRACTOR CUSTOMERS: IF YOU HAVE DBE/MBE/WBE//VBE/SDVBE/SBE GOOD FAITH EFFORTS DIVERSITY GOALS/ REQUIREMENTS ON A FEDERAL, STATE, LOCAL GOVERNMENT, PRIVATE SECTOR PROJECT, PLEASE CONTACT YOUR BRANCH SALES REPRESENATIVE IMMEDIATELY PRIOR TO RECEIVING A QUOTE/ORDER.

Seller not responsible for delays, lack of product or increase of pricing due to causes beyond our control, and/or based upon Local, State and Federal laws governing type of products that can be sold or put into commerce. This Quote is offered contingent upon the Buyer's acceptance of Seller's terms and conditions, which are incorporated by reference and found either following this document, or on the web at https://www.ferguson.com/content/website-info/terms-of-sale
Govt Buyers: All items are open market unless noted otherwise.

LEAD LAW WARNING: It is illegal to install products that are not "lead free" in accordance with US Federal or other applicable law in potable water systems anticipated for human consumption. Products with *NP in the description are NOT lead free and can only be installed in non-potable applications. Buyer is solely responsible for product selection.
Buyer shall accept delivery of products within 60 days of Seller receiving the products at Seller's warehouse. If Buyer causes or requests a delay in delivery of the products, Buyer may be subject to storage fees and additional costs caused by such delay. Seller reserves the right to requote the products and reschedule the delivery date, subject to manufacturer's lead times and price increases, if Buyer is unable to accept delivery within 60 days.

HOW ARE WE DOING? WE WANT YOUR FEEDBACK!
Scan the QR code or use the link below to complete a survey about your bids:
https://survey.medallia.com/?bidsorder&fc=3083&on=11045

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FERGUSON WATERWORKS

FERGUSON WATERWORKS #3083
Price Quotation

Fax: 602-262-4276

16:51:51 MAY 07 2025
Reference No: B451989

HOW ARE WE DOING? WE WANT YOUR FEEDBACK!
Scan the QR code or use the link below to
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https://survey.medallia.com/?bidsorder&fc=3083&on=11045

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Arizona Materials

Quote Number: **Q10023676-0**
Created On: 4/30/2025
Quote Expires On: 5/30/2025

Project: **City of Chandler Hall Way Alley**
Project Address: 179 W Commonwealth Ave
Chandler, AZ 85225
Estimated Start Date: 5/26/2025
Project End Date: 11/30/2025

Account: **Achen Gardner Construction LLC**
Account Number: 40005
Contact: Carson Bryce
E-mail: cbryce@achen.com
Phone: 480-940-1300

Customer Service:
Sales Office Address: PO Box 741805 Kilgore Companies
Los Angeles, CA 90074-1805

MATERIAL PRICING

Item Code	Description	Quantity	Unit Price
12504	**MAG-B 2500 PSI 1" ROCK**	10 CY	$134.00
	Escalator of $8.00 effective 6/1/2025 recurring every 12 months		
13004	**3000 PSI MAG-A**	10 CY	$136.00
	Escalator of $8.00 effective 6/1/2025 recurring every 12 months		
14004	**MAG-AA 4000 PSI, 1" ROCK**	40 CY	$140.00
	Escalator of $8.00 effective 6/1/2025 recurring every 12 months		
12506	**MAG-B CURB 2500 1" SLIPFORM**	20 CY	$136.00
	Escalator of $8.00 effective 6/1/2025 recurring every 12 months		

SUNDRIES AND SURCHARGES

Item	Comments	Price	Unit
Fuel Surcharge RMX		$35.00	EA
WEEKEND TRUCK TIME		$50.00	HRS
ENVIRONMENTAL CHARGE		$25.00	EA
Load Size: 0.00 > 6.00		$200.00	CY
Additional Products & Services			
Hot Water		$2.50	PCY
Recover per 1/2 hour		$4.00	OZ
Micro Fiber		$7.50	PCY
Color Wash Out		$25.00	EA
Nitrogen Cooling		$9.50	GAL
Non-Chloride Accerator (per 1%)		$0.00	GAL
Macro Fiber (Structural)		$7.00	PCY
Color Seal		$0.00	PCY
Chilled Water		$2.50	PCY

Respectfully,

Arizona Materials

Sales Rep: Randy Schmolke
Phone: 602-342-6595
Email: Randy.Schmolke@azmatl.com

Customer Acceptance

Signed by:

Date:

__*Taxable* __*Tax Exempt (Attach Certificate)*

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Arizona Materials

Quote Number:	**Q10023676-0**
Created On:	4/30/2025
Quote Expires On:	5/30/2025

CLAUSES

Delivery availability

The seller is not responsible for delays in delivery due to conditions or circumstances beyond his control.

To insure quality, the minimum order size will be two cubic yards.

The seller accepts no responsibility for damages to any curb and beyond the curb line.

It is the intent of the Seller to have ready mixed concrete arrive at Purchaser's site at the time and rate ordered by Purchaser, but cooperation and 24-hour advance notice are necessary to facilitate timely delivery. Seller agrees to use its best ability and dispatch in meeting requested delivery schedules, but cannot guarantee same. Special arrangements must be made for deliveries of over 100 cubic yard per hour.

Customer must notify dispatch of quoted project, when orders are placed.

Buyer is responsible to provide access for the delivery of products under the delivery vehicle's own power. Our delivery vehicle(s) carry chains that can be used for an additional fee. The use of heavy equipment to propel delivery vehicle(s) in any way through inaccessible areas will not be permitted. In the event a tow truck is needed to retrieve delivery vehicle(s) due to poor access, the Buyer will be billed for the towing cost and delivery vehicle's time related to the recovery and delivery.

Seller is not responsible for failure to make delivery when prevented by strikes; D.O.T. drivers' hour of service; by accidents or necessary repairs to machines or equipment; by fire, flood, power failure, water supply failure, or adverse weather conditions; by inability to procure materials or fuel; by Government regulations, requirements or orders; or by any other causes beyond the Seller control.

Prior to unloading concrete, Purchaser shall inspect delivery tickets for conformity with order. The seller reserves the right to take test cylinders from the concrete as delivered.

The seller will not be responsible for any concrete pumping overtime charges.

When deliveries are made to places other than on paved streets, Purchaser must provide suitable roadways or approaches, permitting safe access of trucks to the point of delivery under their own power. Seller reserves the right to refuse deliveries in the event such roadways are not provided. If Purchaser orders deliveries beyond the curb line, Purchaser shall be responsible for removal of mud from trucks wheels and tires, and Purchaser assumes all liability for, and agrees to hold Seller harmless from, damage to trucks, sidewalks, driveways, roads, or other property, resulting from truck weight or inadequate roadways or approaches to discharge points.

Payment terms

All credit sales are subject to the terms and conditions of a separate credit agreement between Seller and Purchaser, including but not limited to the express agreement that, in addition

Accounts that are 60 days past due will be closed until balance is paid.

The seller strictly follows State Lien Law, issuing construction notice, notice to owner, preliminarynotice or notice to contractor, and/or intent to lien filings, accordingly, without incident.

As to any matter wherein Purchaser intends to make a claim against Seller, written notice must be given to Seller promptly upon discovery of facts upon which the claim may be based, the Seller shall be given full opportunity to investigate them. Otherwise said claim shall be deemed waived.

All Charge Accounts are due and payable 30 days after the date of the invoice. Any account not following the aforementioned payment terms are deemed to be past due. All Past Due Accounts are subject to interest at the rate of 1 ½ percent per month (18% Per Annum) applied to the principal monthly, plus any cost of collection, including, but not limited to, reasonable attorney's fees. NO RETENTION ALLOWED.

Pricing conditions

Purchase order numbers, if required by customer, must be provided prior to purchase.

Materials are quoted based on most recent information and specifications given to us by our customer.

Seller will accept no responsibility for final color, or variations in color, due to the many variables that affect it.

When orders are placed for this project it constitutes acceptance of the prices, terms and conditions of this quotation.

Since Seller has no control over the placing, curing, or handling of concrete after unloading, Seller cannot and does not guarantee the finished work for which its concrete is used.

Prices are subject to change if data or specifications change.

Prices quoted are for the above referenced project only. Prices are good for thirty (30) calendar days from the quote date and through Expiration Date, if the quote is accepted. After 30 days, customer will need to request a new quotation.

Price quote and customer account is subject to cancellation for an overdue account.

Concrete Pricing subject to change based on market conditions

This quotation is subject to credit approval. We reserve the right to cancel this quotation if credit terms are not met.

Subject to cement supply and availability, price increases, and supply of diesel fuel.

All order backs/split loads under 11 yds on one order are subject to Short Load Charges.

Arizona Materials will not be responsible for any concrete pumping overtime charges.

Applicable sales, excise, or use taxes are not included in the prices on the quote. Sales Tax can only be provided as an estimate, if needed. Customers are responsible for paying any such taxes, which are, or may become applicable.

___Taxable ____Tax Exempt (Attach Certificate)

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Arizona Materials

Quote Number:	**Q10023676-0**
Created On:	4/30/2025
Quote Expires On:	5/30/2025

Customer must provide a copy of the tax exempt certificate before ordering any materials to not charge sales tax, otherwise taxes are due and payable within credit terms.

Product performance

It is Contractors responsibility to contact Arizona Materials Quality Control Department with any concrete issues/concerns no later than 48 Hours after placement.

All materials are produced in conformance with ACI / ASTM Standards. Contractor is responsible to provide safe access to the point of delivery.

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PMI
Pavement Marking, LLC
1001 S. 54th Avenue • Phoenix, AZ 85043 • (480) 598-0872
Pavement Marking, LLC is an Equal Opportunity Employer

To:	Estimating Dept.	**Contact:**	Frank Church
Address:	Phoenix, AZ	**Phone:**	
		Fax:	
Project Name:	City Of Chandler - Alley Improvements	**Bid Number:**	250258
Project Location:	California St & Hall Way Alley, Chandler, AZ	**Bid Date:**	5/9/2025

Item #	Item Description	Estimated Quantity	Unit	Unit Price	Total Price
01	Preformed Pavement Arrow	3.00	EACH	$400.00	$1,200.00
02	Mobilization	1.00	EACH	$1,800.00	$1,800.00

Total Bid Price: $3,000.00

Notes:

- Our Quotation Excludes the Following: Survey, Sweeping, Stripe Obliteration, Sealer for Obliteration/ Rumble Strips, Traffic Control, Sales Tax, Permits, Bond, As-Built Drawings, Removal/ Disposal of Lead or Asbestos Based Striping. Contractor to supply water and debris dump location on jobsite.
- Striping survey is required per ADOT Specification 925-3. Payment Terms Net 30 Days (Retainage to match Owner's holding)/ A minimum of 14 days notice required prior to starting work.
- 1 Final markings mobilization included. Adjust mobilizations to fit your project schedule; Any Additional mobilizations will be billed at unit rate above.
- This quote excludes any project management/ billing website fees (i.e. Textura)
- All railroad and/ or specialty insurance is excluded. A standard C.O.I. extension to match Owner's requirements.
- Bond Rate: $15.00/ $1000.00 (Minimum $100.00)
  NAICS Code: 237310
- Pavement Marking License Number: 280635
  This Estimate is Valid for 45 Days. PMI must receive up-to-date plans and specifications prior to mobilization
- Quantities shown are estimates only. Actual quantities installed will be used for billing. Quote to be used as part of our subcontract.

ACCEPTED: The above prices, specifications and conditions are satisfactory and hereby accepted. **Buyer:** _____ **Signature:** _____ **Date of Acceptance:** _____	**CONFIRMED:** **PMI AZ** **Authorized Signature:** _____ **Estimator:** Frank Church 602-717-5388 frank.church@pmiaz.com

Docusign Envelope ID: 9EC46727-5B91-4B91-8768-8D7161961AE2

PROPOSAL
FOR
PROFESSIONAL SERVICES

CLIENT	Achen Gardner	**DATE OF ORDER**	05/07/2025
CONTACT	Andy Mortensen	**PROPOSAL NO.**	P25004331
ADDRESS	2195 W Chandler Blvd, Suite 200 Chandler AZ 85224	**TELEPHONE NO.** **EMAIL NO.**	480-940-1300 Amortensen@achen.com

PROPOSAL NAME Chandler Hall Way Alley Improvements

SITE LOCATION Chandler, AZ

PROPOSAL SUMMARY

Dear Andy:

Attached is our proposal for providing professional surveying services as requested for the Chandler Hall Way Alley Improvement project located at Frye Road and Arizona Avenue in Chandler, Arizona

We appreciate the opportunity to submit our Scope of Understanding to you and look forward to being part of your team on a great project.

Feel free to contact me with any comments or questions you may have for us or if there is anything else we need to provide to you to complete this bid. I can be reached at 623-262-1581.

Please keep Atwell in mind for your future survey needs and any of your upcoming projects.

Thank you,

Randall R. Hager, PLS

Survey Director

Docusign Envelope ID: 9EC46727-5B91-4B91-8768-8D7161961AE2

THE ATWELL CLIENT PROMISE

The Atwell Client Promise serves as a set of guideposts to demonstrate the company's commitment to our clients and partners. In an effort to better understand our clients' perceptions, satisfaction and expectations of Atwell and our leaders, we launched a national initiative to gather client feedback. The Atwell Promise is a direct result of our clients' feedback and prioritized from our clients' perspective. The Atwell Promise is our commitment to you as we strive to develop a long-term relationship and support your project needs.

WE WILL BUILD STRONG RELATIONSHIPS

We will develop long-term, trusting relationships with our clients and maintain genuine interest in their success by understanding their drivers, goals and expectations.

WE WILL PROVIDE INDUSTRY EXPERTISE AND MAINTAIN PROJECT KNOWLEDGE

We will provide dedicated thought leaders and technical professionals who will deliver industry specific knowledge and project experience to every project.

WE WILL BE RESPONSIVE AND EXECUTE ON EVERY TASK

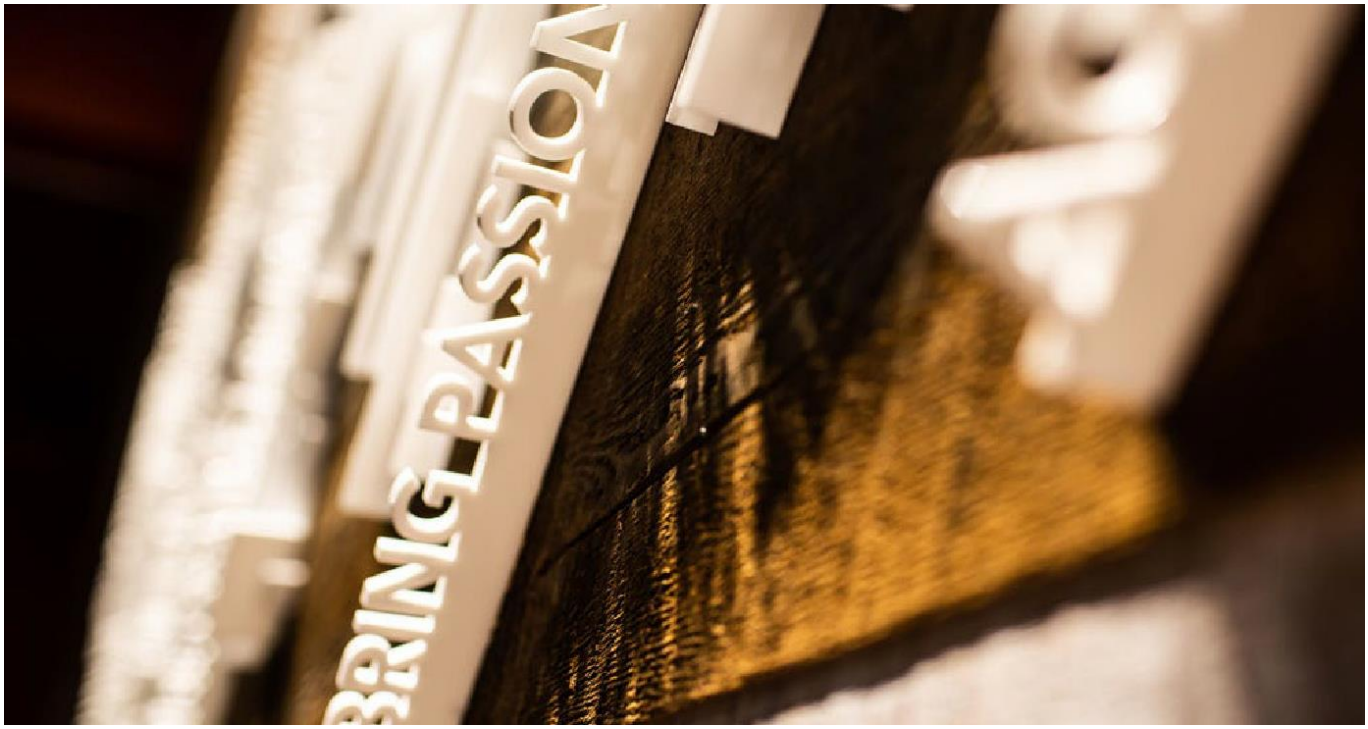
We will maintain a nimble organizational structure for maximum flexibility to better serve the needs of our Clients and respond immediately to a Client's urgent requests and project deadlines.

WE WILL CONTINUE TO HIRE AND DEVELOP TECHNICALLY SOUND PROFESSIONALS

We will continue to recruit, develop and retain team members that have the technical expertise, passion and commitment to health and safety to serve our Client's project needs.

WE WILL PROVIDE QUALITY DELIVERABLES AND MAINTAIN A CULTURE OF EXCELLENCE

We will maintain a culture of excellence focused on Client service and industry best practices to ensure accuracy, consistency and constructability for each project.



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EXHIBIT A

SCOPE OF WORK FOR CHANDLER HALL WAY ALLEY IMPROVEMENTS

Based upon our understanding of project requirements and discussions with you we have developed the following scope of services:

1.Control:

a. Establish horizontal control and vertical control points for site staking.

b. Set control points for contractor use.

c. Asbuilt existing surface utilities for future readjustments.

d. Provide demo limits

2.Staking

a. Stake new curb at 25' intervals

b. Stake Valley Gutter at 25' intervals

c. Stake existing utility rims for re-adjustment after paving.

d. Provide layout for new signs.

3.As-Builts:

a. Complete asbuilts on Civil plans for submittal to city jurisdiction.

NOTE: Atwell will work closely with the client\contractor to insure As-built data is obtained and provided to the Atwell survey (office) team to quickly review and complete the As-built analysis. It is the Client\Contractors responsibility to contact the Atwell Survey Project Manager in a timely manner when the improvements are ready to be As-built in order to provide sufficient time to schedule the Atwell survey team for collection of As-built data. If the underground utility has been backfilled prior to As-built data collection, it may require the Contractor to expose said utility at Contractor's expense, till field as-built has been completed.

CLARIFICATIONS

PROJECT UNDERSTANDINGS

- Anything not specifically stated is excluded from this Scope of Services.

ASSUMPTIONS:

In preparing the proposal, we have assumed the following:

- Atwell has access to the site.
- Proposal based on the unapproved City of Phoenix, Plans by Hilgart Wilson dated 10-31-24.

INFORMATION TO BE PROVIDED BY THE CLIENT:

In preparing the proposal, it is understood the following be provided by the Client:

Client to provide current set of approved construction plans,
Client to provide CADD files of the current plans to assist in setting up the staking calculations for field crews.

ADDITIONAL SERVICES

We have the capability to provide services outside of the agreed upon Scope of Services. These services would be considered Additional Services and would be provided on a Time and Material basis and billed in accordance with the attached Professional Services Fee Schedule. Additional Services will only be provided at the written request of the client.

EXHIBIT B

Scope & Fee Proposal Work Authorization – Services

Task	Task Description	Original Fee	Type	Initial
1	Site Control/Demo Limits	$2,000	FF	
2	Rough Grade	$4,000	FF	
3	As-Builts	$2,390		
4	Calcs/Coordination	Included in Fees Above	FF	
	Total:	**$8,390**		

FF=Fixed Fee

TME = Time & Materials

Upon receipt of this signed proposal and work authorization, Atwell will commit the staff and resources necessary to begin work on the project.

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Invoices will be submitted monthly for work completed and payment is expected within thirty (30) days of the date of the invoice. In the event of non-payment, services may be suspended.

All project related reimbursable expenses, including vehicle mileage, lodging, travel, travel time, computer time, outside data reports, postage, shipping, reproductions will be billed separately at cost under Task 98.

All fees and hourly rates quoted within this contract may increase annually after the beginning of each year. The original Atwell Agreement is enforceable for all subsequent work orders. The client shall pay all fees and permit charges

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Exhibit C

2024 PROFESSIONAL SERVICES FEE SCHEDULE
REAL ESTATE & LAND DEVELOPMENT

PROJECT MANAGEMENT SERVICES	
Senior Project Manager	$255/hour
Project Manager I-III	$212 to $240/hour
Associate Project Manager I-II	$178 to $195/hour
Project Coordinator I-III	$105 to $137/hour
ENGINEERING & PLANNING SERVICES	
Senior Technical Advisor	$325/hour
Senior Project Engineer	$223/hour
Engineer/Designer I-V	$141 to $212/hour
Planner/Designer I-V	$141 to $212/hour
Technician I-V	$65 to $126/hour
SURVEYING & MAPPING SERVICES	
Senior Project Surveyor	$223/hour
Project Surveyor I-V	$141 to $212/hour
Senior Crew Chief	$164/hour
Crew Chief I-III	$109 to $146/hour
Crew Member I-II	$80 to $95/hour
Certified sUAS Pilot	$190/hour
Technician I-V	$65 to $126/hour
GIS Services	$113 to $170/hour
ENVIRONMENTAL & ECOLOGICAL SERVICES	
Senior Environmental/Ecological Consultant	$223/hour
Environmental Consultant I-V	$141 to $212/hour
Technician I-V	$65 to $126/hour
PROGRAM MANAGEMENT & CONSTRUCTION ADVISORY SERVICES	
Program Manager I-II	$270 to $282/hour
Senior Construction Manager	$225/hour
Construction Manager I-II	$195 to $212/hour
Construction Engineer I-II	$138 to $175/hour
Construction Coordinator	$128/hour
Estimating Services	$178 to $212/hour
Safety Coordinator	$142/hour
MISCELLANEOUS	
Project Controller Services	$102 to $124/hour
Project Executive	$325/hour
Expert Witness	$250/hour

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PROFESSIONAL SERVICES AGREEMENT

Chandler Hall Way Alley Improvements

P25004331

These terms and conditions and the documents set forth in this Professional Services Agreement (the "Agreement") are entered into between Atwell, LLC, a Michigan limited liability company ("Atwell") and Achen Gardner ("Client") as of the date set forth in this Agreement.

1. **Authorization for Work to Proceed:** Upon execution of the Agreement, receipt of specified retainer fees, and completion of all other preliminary requirements set forth herein, Atwell shall proceed with the work (also referred to herein as the "services"), unless stated otherwise in the Agreement.
2. **Scope of Services:** The Scope of Work is set forth in the Proposal.
3. **Standard of Practice:** Services performed by Atwell under the Agreement will be conducted in a manner consistent with the level of care and skill ordinarily exercised by members of the profession currently practicing in the same locality under similar conditions. No other representation expressed or implied and no warranty or guarantee is included or intended in the Agreement or in any report, opinion, document, or otherwise. Client acknowledges that Atwell has made no implied or express representation, warranty or condition with respect to the services, findings, recommendations or advice to be provided by Atwell, except as expressly set forth herein.
4. **Billing and Payment:** Client shall pay Atwell for services performed in accordance with the rates and charges set forth in the Proposal. All fees and hourly rates quoted in the Proposal may be increased annually and as otherwise agreed by Atwell and Client. Invoices will be submitted by Atwell on a monthly basis and shall be due and payable within thirty (30) calendar days of the invoice date.
5. **Billing Dispute:** In the event any bill or portion thereof is disputed by Client, Client shall notify Atwell in writing within fourteen (14) days of receipt of the bill in dispute. In the event a portion of a bill is in dispute, Client hereby agrees to pay the undisputed portion of the bill in accordance with the terms set forth herein. Client and Atwell shall work together to resolve the dispute, but in the event Atwell and Client do not resolve such dispute within sixty (60) days of notice of dispute, Atwell may terminate the Agreement.
6. **Failure to Pay:** If Client for any reason fails to pay any undisputed portion of Atwell's invoices within thirty (30) days of receipt, Atwell may suspend services to Client. Client shall waive any claim against Atwell and shall defend, hold harmless, and indemnify Atwell from and against any damages or claims for injury or loss stemming from Atwell's suspension of services. Client shall also pay Atwell's reasonable demobilization costs resulting from the suspension of services. In the event the project is remobilized, Client shall also pay the cost of remobilization and the parties may renegotiate certain contract terms and conditions including, but not limited to, those associated with budget, schedule, or scope of services.
7. **Termination:** The Agreement may be terminated with cause by either party upon at least seven (7) calendar day's written notice. For purposes of this section, "Cause" shall be defined as failure by the other party to perform in accordance with the terms of the Agreement. In the event of such termination for cause, Atwell specifically retains and reserves, to the fullest extent permitted by law, all causes of action, claims, and remedies, in contract and in tort, in connection with or relating to Client's duties set forth in this Agreement. Atwell may terminate the Agreement without cause and without written notice in the event that (1) site conditions become unsafe for the performance of the services by Atwell; or (2) if Client fails to pay any invoice in accordance with the Agreement. In no event shall Atwell be

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responsible for Client's lost profits or other damages arising out of Atwell's decision to terminate performance of services. In the event the Agreement is terminated with or without cause, Atwell shall be paid for services performed up to the termination date plus all incurred and documented termination expenses. For purposes of this Agreement, "termination expenses" shall include personnel and equipment rescheduling and reassignment adjustments and all other related costs incurred directly attributable to termination of the Agreement.

8. **Additional Services:** Any services to be provided by Atwell to Client not included or contemplated by this Agreement shall be specifically identified and agreed in writing.

9. **Work Product:** All documents produced or created by Atwell including, but not limited to, memoranda, internal reports, boring logs, field data, field notes, laboratory data, calculations and estimates, are instruments of service, and such instruments of service shall remain property of Atwell. Atwell is deemed the author and owner of the instruments of service, regardless of whether or not the services are completed, and Atwell shall retain all common law, statutory and other reserved rights, including copyrights. Upon receipt by Atwell of payment in full for its services, Client shall receive a fully paid license to use Atwell's Work Product for this Project. In the event Client uses, re-uses, or modifies Atwell's Work Product for any other use or purpose, Client shall defend, indemnify, and hold harmless Atwell from all claims arising or in any way related to such use, re-use, or modification. Any and all environmental and material samples obtained by Atwell pursuant to this Agreement may, at the sole discretion of Atwell, be discarded thirty (30) days following completion of the services unless otherwise mutually agreed in writing by Atwell and Client.

10. **Electronic Data:** If Client is provided copies in electronic format of deliverables prepared by Atwell ("Electronic Data"), for use in connection with preparation by Client of drawings or other submittals, as-built or record drawings, or for any other purpose, Client's use of such Electronic Data shall be at the sole risk of Client. Client agrees that the Electronic Data shall not be used for any purpose other than the project contemplated under this Agreement. Client acknowledges that the information contained in the Electronic Data may not be complete, may not be to scale, and may be subject to subsequent changes by Atwell. Client acknowledges that anomalies and errors can be introduced into the Electronic Data when it is transferred or used in an incompatible computer environment and that Atwell shall not be held liable for any such anomalies or errors. Further, Client accepts the risks associated with and the responsibility for any damage to hardware, software or computer systems or networks related to any use of the Electronic Data. The Electronic Data is being furnished on an "as-is" basis.

11. **Excuse of Performance (Force Majeure):** Atwell shall not be liable for delays in performance or for non-performance due to acts of God, war, riot, fire, acts or threats of terrorism, labor trouble, unavailability of materials or components, explosion, accident, compliance with governmental requests, laws, regulations, order or actions, unforeseen circumstances, or causes beyond Atwell's reasonable control.

12. **No Setoff:** Client is prohibited from and shall not setoff against or recoup from any invoiced amounts due or to become due from Client or its subsidiaries or affiliates any amounts due or to become due to Atwell or its subsidiaries or affiliates, whether arising under the Agreement or otherwise.

13. **Assigns:** Client may not delegate, assign, subcontract or transfer its duties or interest in the Agreement without the written consent of Atwell.

14. **Waiver:** The failure of either party to enforce any right or remedy provided in the Agreement or by law on a particular occasion will not be deemed a waiver of that right or remedy on a subsequent occasion or a waiver of any other right or remedy.

15. **Limitation of Liability:** The Parties acknowledge that the project pricing provided is based upon Atwell's willingness to accept a reasonable and fair level of risk and Client's willingness to cap such risk at a level reflective of such compensation. Accordingly, it is expressly agreed

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that Client's sole and maximum recovery against Atwell for any claim arising out of this Agreement, whether in contract, tort or otherwise, is the lesser of three (3) times the amount of money paid by Client to Atwell under this Agreement or $250,000, and that an award of damages not to exceed such amount is Client's sole and exclusive remedy against Atwell. Under no circumstance shall Atwell be liable to Client for any loss or damage of any nature not arising from the work to be provided by Atwell herein. Notwithstanding anything else in this Agreement to the contrary, neither party shall be liable to the other for any incidental, special, consequential, punitive, exemplary, “benefit of the bargain”, or lost profit damages.

16. **Indemnification; Limitation on Time Period to Bring Claims:** Client agrees, to the fullest extent permitted by law, to indemnify and hold harmless Atwell, its managers, members, employees, officers, agents and affiliates, against all damages, liabilities or costs, including reasonable attorneys' fees and all costs of legal defense, arising out of or in any way connected with the project or services under the Agreement, excepting only those damages, liabilities or costs solely and directly caused by the negligent performance or willful misconduct by Atwell. Client agrees, to the fullest extent permitted by law, to indemnify and hold harmless Atwell, its managers, members, employees, officers, agents and affiliates, against all damages, liabilities or costs, including reasonable attorneys' fees and all costs of legal defense, arising out of or attributable to the negligence of Client, its successors, employees, agents or invitees. Client agrees to indemnify Atwell from claims arising out of any certifications which are required to be signed on behalf of Client during the course of the work contemplated by this Agreement. No action, suit or other proceeding shall be instituted against Atwell in connection with the work contemplated by this Agreement more than one (1) year after the last date of service under this Agreement. Atwell agrees to indemnify and hold harmless Client, its managers, employees and officers against damages, liabilities, or costs, including reasonable attorneys’ fees where recoverable by law to the extent caused by the negligent performance or willful misconduct by Atwell.

17. **Notice of Lien:** Atwell hereby notifies Client that Atwell may utilize all available lien rights in connection with its provision of services under the Agreement. In order to perfect any construction lien in favor of Atwell, Client agrees to provide, if applicable, any Notice of Commencement or any other notice required by the applicable Lien Laws.

18. **Job Site Safety:** Client assumes sole and complete responsibility for the safety of all persons and property where the work to be performed is at Client's site. In the event that Atwell provides a health and safety officer at Client's site, Atwell shall be authorized to take any and all measures on behalf of Client that in Atwell's opinion will maintain generally accepted health and safety standards for personnel at the site. Atwell will inform Client of such deficiencies relating to the specifications and applicable regulations known to Atwell, but Atwell shall not be responsible for the failure of Client or its agents to follow the recommendations of Atwell personnel. Client waives any claim and all damages against Atwell for, and agrees to indemnify and hold Atwell harmless from, any claim for liability for injury or loss to Client or others stemming from such measures, except to the extent such claim for injury or loss results from the direct negligence of Atwell.

19. **Disclosure of Hazardous Substances and/or Conditions:** Client hereby acknowledges that it shall be the duty of Client to notify Atwell of any known or suspected hazardous substances which have or may have been used, stored or disposed of on the work site. This duty shall also apply to any hazardous substance with which Atwell may be provided or which exists or may exist on or near any premises upon which services are to be performed by Atwell employees, agents or subcontractors. Disclosure and notification to Atwell shall be required immediately upon discovery of any other hazardous substances or upon discovery of increased concentrations of previously disclosed substances. All decisions related to the disposal of hazardous substances shall be made solely by Client, and Atwell shall not select the disposal site nor shall Atwell

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arrange in any other way for the disposal of any hazardous substances found on or removed from the work site.

To the extent that the Agreement between Atwell and Client includes subsurface activities (including, but not limited to, soil borings, well installation or test pit excavation), Client shall furnish Atwell with diagrams clearly identifying the location and boundaries of the site's subsurface structures (including, but not limited to, pipes, tanks, cables, sewers, and utilities). Atwell shall not be liable for any damage to any subsurface structures or injury or loss arising from damage to subsurface structures which are incorrectly located or not identified on the diagrams provided by Client.

20. **Estimates for Proposed Construction:** Construction cost estimates, quantity estimates, schedules and any earthwork quantity calculations are estimates only and are calculated and provided in good faith by Atwell. Atwell has no control over external factors, including, but not limited to, market conditions and construction procedures. Atwell and Client each acknowledge and agree that such estimates may vary from final proposals, bids, schedules or actual construction costs.

21. **Stamp on Drawings:** Atwell shall not be liable for any plans or specifications produced under this Agreement until such drawings are stamped as "approved" by all relevant government/municipal agencies and/or building department officials.

22. **Dispute Resolution:** Other than as to a dispute arising from alleged non-payment, such Dispute shall first be submitted to designated authorized representatives of the Parties to attempt to reach a negotiated resolution. In the event such a resolution cannot be reached within a reasonable time, at the demand of either Party the matter shall be submitted to non-binding mediation using a single mediator selected by mutual agreement of the parties. In the event the parties cannot agree on a mediator, or in the event the Dispute is not resolved within a reasonable time, at the demand of either Party the matter shall be submitted to binding arbitration in accordance with the Commercial Arbitration Rules of the American Arbitration Association then in effect (the "Expedited Procedures"); provided, that the arbitration shall not be conducted by the American Arbitration Association. The Parties shall select a single arbitrator by mutual agreement or, failing such agreement, the arbitrator shall be appointed by a court of competent jurisdiction sitting in Oakland County, Michigan, to which jurisdiction and venue the Parties hereby consent. The arbitration shall be held in Oakland County, Michigan, and the laws applicable to the arbitration proceeding shall be the laws of Michigan without regard to principles of conflict of laws. The parties agree that the arbitrator shall have all powers provided by law and the terms and conditions of this Agreement. However, the arbitrator shall have no power to vary or modify any of the provisions of this Agreement. Any party to this Agreement may bring an action in any court having jurisdiction, including a summary or expedited proceeding, to specifically enforce this Agreement, and an action or motion to compel arbitration may be brought at any time, even after a Dispute has been raised in a court of law, or after this Agreement has been completed, terminated, or paid in full.

Judgment. The arbitration award rendered by the arbitrator shall be final and non-appealable and judgment may be entered upon it in accordance with the applicable law in any court having jurisdiction thereof.

Costs and Expenses. Each Party shall bear its own costs of Arbitration and shall pay one-half of the Arbitrator's fees and costs. The prevailing party shall be entitled to payment by the other Party of its actual costs and reasonable attorney fees.

23. **Severability:** If any portions of this Agreement shall be, for any reason, invalid or unenforceable, the remaining portion or portions shall nevertheless be valid, enforceable and carried into effect, and this Agreement shall be construed in all respects as if such invalid, void or unenforceable provisions were omitted.

24. **Entire Agreement:** The Agreement, including all attached Exhibits, constitutes the entire agreement between the parties with respect to their subject matter, and supersedes all prior oral or written representations or agreements by the

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parties with respect to the proposed subject matter of the Agreement, including Client's request for proposal or any purchase order or terms and conditions. No subsequent terms, conditions, understandings, or agreements purporting to modify the terms of the Agreement will be binding unless in writing and signed by both parties.

25. **Governing Law:** The Agreement shall be governed by the laws of the State of Michigan without regard to principles of conflict of laws.
26. **Agreement Construction:** Both Parties having had an equal opportunity to negotiate the terms of this Agreement and to consult with counsel prior to execution, neither Party shall be considered the drafter of the Agreement and it shall not be construed against one Party more than the other.
27. **Notices:** Any notice required or permitted to be given under this Agreement shall be in writing, and either personally delivered to the other party or mailed to the last known current address of the other party by certified mail, return receipt requested.
28. **Miscellaneous: Notwithstanding Section 25 above, the parties agree that if the services are performed in a state which limits liability, including but not limited to, Fla. Stat.§ 558.0035, the laws of that state shall govern with respect to limiting liability and the Client agrees and waives all claims the Client or anyone claiming by through or under them, may have against an individual design professional employed by Atwell for negligence arising out of the rendering of services under this Agreement.** Projects in North Carolina are deemed contracted through and performed by Atwell, LLC, a Michigan limited liability company d/b/a Atwell, PLLC pursuant to an Amended Certificate of Authority issued by the North Carolina Department of State on July 30, 2021 under NC COA# P-2380.

ACCEPTED BY:
ATWELL, LLC

By: _____

Signature

Randall R. Hager, PLS

Director

Achen Gardner

By: _____

Signature

Name: _____

ITS: _____

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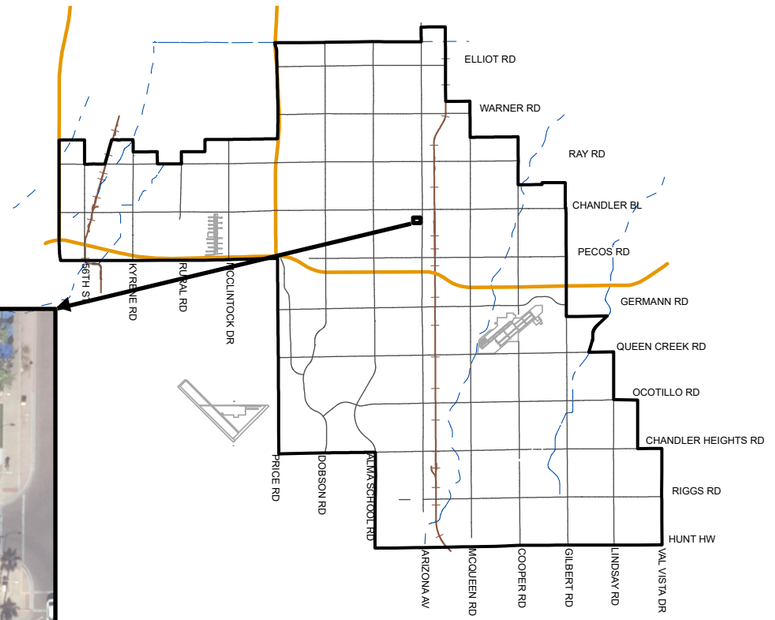
EXHIBIT H

BUILDERS RISK INSURANCE

CHANDLER arizona

DOWNTOWN ALLEYWAY IMPROVEMENTS (CALIFORNIA STREET BETWEEN BOSTON STREET AND COMMONWEALTH AVENUE) PROJECT NO. CA2206.402





MEMO NO. CP25-128

PROJECT LOCATION

NTS

ChanGIS

F:\ENGINEER\GENSERV_ArcGISPro_Shared\Map Requests\Capital Projects\2025\CP25-128\CP25-128\CP25-128.aprx 4/30/2025 CameronK

CHANDLER arizona
Community of Innovation

City Council Memorandum Development Services Memo No. 25-014

Date: June 12, 2025
To: Mayor and Council
Thru: Joshua H. Wright, City Manager
Andy Bass, Deputy City Manager
Kevin Snyder, Development Services Director
From: Mikayela Liburd, City Planner
Subject: PLH24-0035 California Duplex
Introduction and Tentative Adoption of Ordinance No. 5131

Request: Rezoning from Planned Area Development (PAD) for Single-Family Residential to PAD for a Duplex and Preliminary Development Plan for site layout and architecture.
Location: South of the southwest corner of California and Chicago Streets, generally located 1/2 mile south of the southwest corner of Chandler Boulevard and Arizona Avenue.
Applicant: Todd Thompson, ETodd Design, Inc.

Proposed Motion:

Rezoning
Move City Council introduce and tentatively adopt Ordinance No. 5131, approving PLH24-0035 California Duplex, Rezoning from Planned Area Development (PAD) for Single-Family Residential to PAD for a Duplex, subject to the conditions as recommended by Planning and Zoning Commission.

Preliminary Development Plan
Move City Council approve Preliminary Development Plan PLH24-0035 California Duplex for site layout and building architecture, subject to the conditions as recommended by Planning and Zoning Commission.

Background Data:

- Approximately 0.16 Acres
- Site is currently vacant
- The proposed duplex is consistent with the city's goals to provide more missing middle housing, which includes duplexes, triplexes, fourplexes and townhomes
- The parcel located across the alley to the west received zoning approval for a similar duplex in June 2023 and is currently under construction
- Part of the original Chandler Townsite
- The property was rezoned from Multiple-Family Residential District (MF-2) to Planned Area Development in 2021 for a Single-Family home
- While most of the neighborhood currently consists of single-family homes, all the lots are zoned MF-2 (Multiple-Family Residential) or MF-3 (High Density Residential), making the duplex a compatible addition
- The proposed duplex would allow a Duplex or a Single-Family home to be consistent with MF-2 and MF-3 zoning districts that allow the development of a Single-Family home on parcels that are less than 12,000 square feet
- The request to rezone to PAD includes a requests for a reduced front yard setback and increased lot coverage

Surrounding Land Use Data:

North	MF-2, used for Single-Family Residential	South	MF-2, used for Single-Family Residential
East	California Street, then MF-2, used for Single-Family Residential	West	Alley, then a vacant MF-2 parcel

General Plan and Area Plan Designations:

	Existing	Proposed
General Plan	Neighborhoods	No Change
South Arizona Avenue Corridor Area Plan	Low Density Residential with a Future Growth Area Designation	No Change

Proposed Development

Number of Units	2
Lot Size	7,200 SF
Unit 1	2,610 SF
Unit 2	3,247 SF

Density	12.1 units per acre
Setbacks	East: 20 ft. North Side: 10 ft. South Side: 5 ft. West: 20 ft.
Proposed Lot Coverage	46.8%
Maximum Lot Coverage	50%
Height	28'-6"
Parking	4 Parking Spaces (2 per unit)

Review and Recommendation

The subject property is surrounded by Multiple-Family Residential District (MF-2) properties on all sides. It was also previously zoned MF-2 before being rezoned in 2021 to its current zoning designation of Planned Area Development for Single-Family Residential. The applicant is requesting a rezone to PAD for a Duplex rather than reverting to the previous MF-2 zoning. This allows the applicant to request an increased lot coverage and a reduced front yard (east setback). The maximum lot coverage permitted in MF-2 zoning is 45%. The proposed development has a lot coverage of approximately 46.8%. A maximum of 50% lot coverage is proposed to allow the potential future addition of a roof structure over the outdoor patio located at the northeast corner of the duplex.

The front yard setback is dependent on the width of the abutting public right-of-way. Typically, single-family lots abut 50-foot wide right-of-ways, which require 20-foot front yard setbacks. In this instance, the right-of-way is 70 feet, which requires a 25-foot front yard setback. The reduction of the front yard setback from 25 feet to 20 feet is consistent with developments on similar-sized lots and allows for a more pedestrian-oriented main entry to the residence.

With respect to the height, the proposed 28.5-foot building height is permitted in the MF-2 district as well as in all single-family zoning districts, which permit a maximum height of 25 feet at the building setback line and increases at a ratio of one foot in height by one foot in distance from the setback line up to a maximum of 35 feet at the center of the property.

The alley access garages allow for four (4) vehicles to have covered parking, with two (2) vehicles having a traditional two-car garage and the other two having a two-car tandem garage that works with the limited lot size.

The style of architecture proposed is a modern farmhouse that utilizes different

materials such as siding, stone veneer, stucco and wainscot.

Staff is proposing that the requested PAD allow either a Duplex or a Single-Family home to be consistent with current MF-2 and MF-3 zoning that allow for the construction of Single-Family homes.

In 2024, the Arizona State Legislature approved House Bill 2721, requiring cities with a population of 75,000 or more to allow the development of "Missing Middle Housing" inclusive of duplexes, triplexes, fourplexes and townhomes on all lots zoned for single-family residential within one (1) mile of the city's central business district. Cities were given a deadline to comply with this bill by January 1, 2026. To this end, staff is currently drafting language to bring to the City Council before the end of this year. This mandate will likely impact future development in this neighborhood.

Staff finds the proposal to be consistent with the General Plan, the South Arizona Avenue Area Plan, and the City's goal to provide missing middle housing. The Planning and Zoning Commission recommends approval subject to conditions.

Public / Neighborhood Notification

- This request was noticed in accordance with the requirements of the Chandler Zoning Code.
- A neighborhood meeting was held on February 28, 2025. No one attended other than the applicant.
- Staff has received emails from two residents, both of whom are opposed to the development. They have expressed concerns about the proposed building height, traffic impacts, privacy issues, and whether the proposal aligns with the character of the neighborhood.

Planning and Zoning Commission Vote Report

Planning and Zoning Commission meeting May 21, 2025
Motion to Approve

In Favor: 5 Opposed: 0 Absent: 2 (Koshiol, Quinn)

At the Planning and Zoning Commission meeting, one resident expressed opposition to the request, citing concerns about building height and the future development of structures of similar scale in the neighborhood.

Chair Heumann acknowledged the neighborhood is zoned for multi-family residential, the proposed building height is below the maximum building height

permitted in multi-family and single-family zoning districts, and apprehension with the increase in lot coverage regarding the potential cumulative impact of incremental increases in lot coverage over time. Moving forward, the Commission requested staff examine lot coverage percentages to avoid increasing them over 45%, which is the maximum permitted in MF-2 zoning districts.

Recommended Conditions of Approval

Rezoning

Planning and Zoning Commission recommends City Council approve the Rezoning from Planned Area Development (PAD) for Single-Family Residential to PAD for a Duplex, subject to the following conditions:

1. Development of the site shall be in substantial conformance with the exhibits titled PLH24-0035 California Duplex, kept on file in the City of Chandler Planning Division in the file PLH24-0035, except as modified by conditions herein.

2. The home builder/lot developer shall provide a written disclosure statement for the signature of any potential buyer, acknowledging that the property is located adjacent to or nearby the "Entertainment District", which may contain land uses that create adverse noise and other externalities. The "Purchase Contracts" and the property deed shall include a disclosure statement outlining that the site is adjacent to the Entertainment District. The responsibility for notice rests with the home builder/ lot developer, and shall not be construed as an absolute guarantee by the City of Chandler for receiving such notice.

3. Developer shall provide all required right-of-way dedications and/or easements as determined by the Development Services Director at the time of construction plan review.

4. Developer shall complete construction of all required off-site street improvements, including but not limited to paving, landscaping, curb, gutter and sidewalks, median improvements and street lighting to achieve conformance with City Codes, standard details, and design manuals.

5. Landscaping in all right-of-way shall be maintained by the adjacent property owner. Additionally, hardscape improvements located behind the sidewalk and within the right-of-way shall be maintained by the adjacent property owner.

6. Minimum setbacks shall be as provided below:

Setback	Distance
Front Yard (East)	20 Feet
Side Yard (North)	10 Feet
Side Yard (South)	5 Feet
Rear Yard (West)	20 Feet

7. Maximum lot coverage shall be 50%.

8. Covered parking shall consist of a 2-car garage (side by side) and a tandem 2-car garage.

9. In addition to a duplex, a single-family residence is also permitted and shall be subject to setbacks and lot coverage established within the ordinance. Parking and all other development standards shall be subject to Single-Family District (SF-8.5) requirements set forth in the City of Chandler Zoning Code. Administrative Design Review approval shall be required prior to building permit issuance of any single-family home.

Preliminary Development Plan
Planning and Zoning Commission recommends the City Council approve the Preliminary Development Plan, subject to the following conditions:

1. Development of the site shall be substantial conformance with the exhibits, titled PLH24-0035 California Duplex Development Booklet.

2. All mechanical equipment shall be located in the side or rear yards and screened entirely from view by material(s) that are architecturally consistent with the proposed duplex.

3. Preliminary Development Plan approval does not constitute Final Development Plan approval; compliance with the details required by all applicable codes and conditions of the City of Chandler and this Preliminary Development Plan shall apply.

Attachments

Ordinance No. 5131
Vicinity Maps
PLH24-0035 California Duplex Exhibits
Letters of Opposition

ORDINANCE NO. 5131

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF CHANDLER, ARIZONA, AMENDING THE ZONING CODE AND MAP ATTACHED THERETO, BY REZONING A PARCEL FROM PLANNED AREA DEVELOPMENT (PAD) FOR SINGLE-FAMILY RESIDENTIAL TO PAD FOR A DUPLEX IN CASE PLH24-0035 (CALIFORNIA DUPLEX), LOCATED SOUTH OF THE SOUTHWEST CORNER OF CHANDLER BOULEVARD AND ARIZONA AVENUE WITHIN THE CORPORATE LIMITS OF THE CITY OF CHANDLER, ARIZONA; PROVIDING FOR THE REPEAL OF CONFLICTING ORDINANCES; AND PROVIDING FOR PENALTIES.

WHEREAS, an application for rezoning certain property within the corporate limits of Chandler, Arizona, has been filed in accordance with Article XXVI of the Chandler Zoning Code; and

WHEREAS, the application has been published in a local newspaper with general circulation in the City of Chandler, giving fifteen (15) days' notice of the time, place, and date of public hearing; and

WHEREAS, a notice of such hearing was posted on the property at least seven (7) days prior to the public hearing; and

WHEREAS, the City Council has considered the probable impact of this ordinance on the cost to construct housing for sale or rent; and

WHEREAS, a public hearing was held by the Planning and Zoning Commission as required by the Zoning Code.

NOW, THEREFORE, BE IT ORDAINED by the City Council of the City of Chandler, Arizona, as follows:

Section 1. Legal Description of Property:

EXHIBIT 'A'

Said parcel is hereby rezoned from PAD for Single-Family Residential to PAD for a Duplex, subject to the following conditions:

1. Development of the site shall be in substantial conformance with the exhibits titled "PLH24-0035 California Duplex" kept on file in the City of Chandler Planning Division, in the file in PLH24-0035, except as modified by conditions herein.

2. The home builder/lot developer shall provide a written disclosure statement for the signature of any potential buyer, acknowledging that the property is located

adjacent to or nearby the "Entertainment District", which may contain land uses that create adverse noise and other externalities. The "Purchase Contracts" and the property deed shall include a disclosure statement outlining that the site is adjacent to the Entertainment District. The responsibility for notice rests with the home builder/ lot developer and shall not be construed as an absolute guarantee by the City of Chandler for receiving such notice.

3. Developer shall provide all required right-of-way dedications and/or easements at the time of construction plan review.

4. Developer shall complete construction of all required off-site street improvements, including but not limited to paving, landscaping, curb, gutter and sidewalks, median improvements and street lighting to achieve conformance with City Codes, standard details, and design manuals.

5. Landscaping in all rights-of-ways shall be maintained by the adjacent property owner. Additionally, hardscape improvements located behind the sidewalk and within the right-of-way shall be maintained by the adjacent property owner.

6. Minimum setbacks shall be as provided below.

Setback	Distance
Front Yard (East)	20 Feet
Side Yard (North)	10 Feet
Side Yard (South)	5 Feet
Rear Yard (West)	20 Feet

7. Maximum lot coverage shall be 50%.

8. Covered parking shall consist of a 2-car garage (side-by-side parking) and a tandem 2-car garage.

9. In addition to a duplex, a single-family residence is also permitted and shall be subject to the setbacks and lot coverage established within this ordinance. Parking and all other development standards shall be subject to Single-Family District (SF-8.5) requirements set forth in the City of Chandler Zoning Code. Administrative Design Review approval shall be required prior to building permit issuance of any single-family home.

Section 2. The Planning Division of the City of Chandler is hereby directed to enter such changes and amendments as may be necessary upon the Zoning Map of said Zoning Code in compliance with this Ordinance.

Section 3. All ordinances or parts of ordinances in conflict with the provisions of this Ordinance, or any parts hereof, are hereby repealed.

Section 4. In any case, where any building, structure, or land is used in violation of this Ordinance, the Planning Division of the City of Chandler may institute an injunction or any other appropriate action in proceeding to prevent the use of such building, structure, or land.

Section 5. If any section, subsection, sentence, clause, phrase or portion of this Ordinance is for any reason held to be invalid or unconstitutional by the decision of any court of competent jurisdiction, then this entire ordinance is invalid and shall have no force or effect.

Section 6. A violation of this Ordinance shall be a Class 1 misdemeanor subject to the enforcement and penalty provisions set forth in Section 1-8.3 of the Chandler City Code. Each day a violation continues, or the failure to perform any act or duty required by this Ordinance or the Zoning Code, shall constitute a separate offense.

INTRODUCED AND TENTATIVELY APPROVED by the City Council of the City of Chandler, Arizona, this ____ day of _____, 2025.

ATTEST:

_____ _____
CITY CLERK MAYOR

PASSED AND ADOPTED by the City Council of the City of Chandler, Arizona, this _____ day of _____, 2025.

ATTEST:

_____ _____
CITY CLERK MAYOR

CERTIFICATION

I HEREBY CERTIFY that the above and foregoing Ordinance No. 5131 was duly passed and adopted by the City Council of the City of Chandler, Arizona, at a regular meeting held on the ____ day of _____, 2025, and that a quorum was present thereat.

_____
CITY CLERK

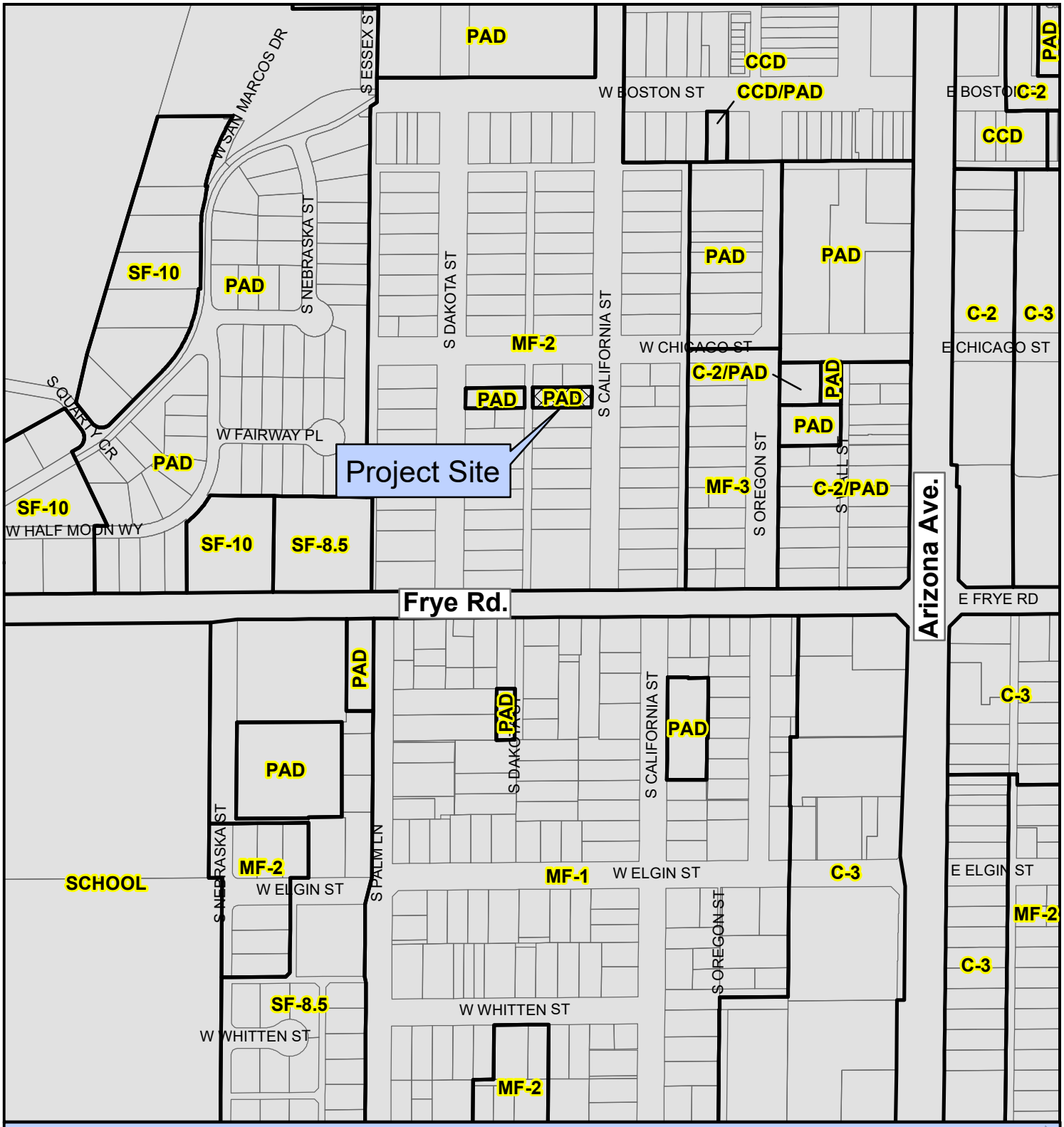
APPROVED AS TO FORM:

_____
CITY ATTORNEY TA

Published:

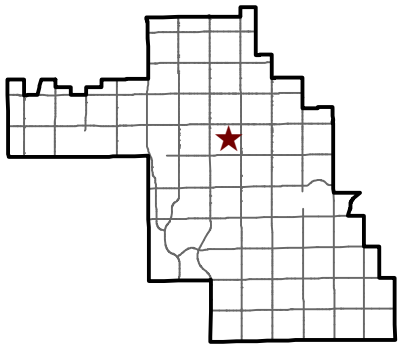
Exhibit A

Lot 938, Block 1, of THE TOWNSHIP OF CHANDLER, according to Book 9 Maps, page 2, records of Maricopa County, Arizona.



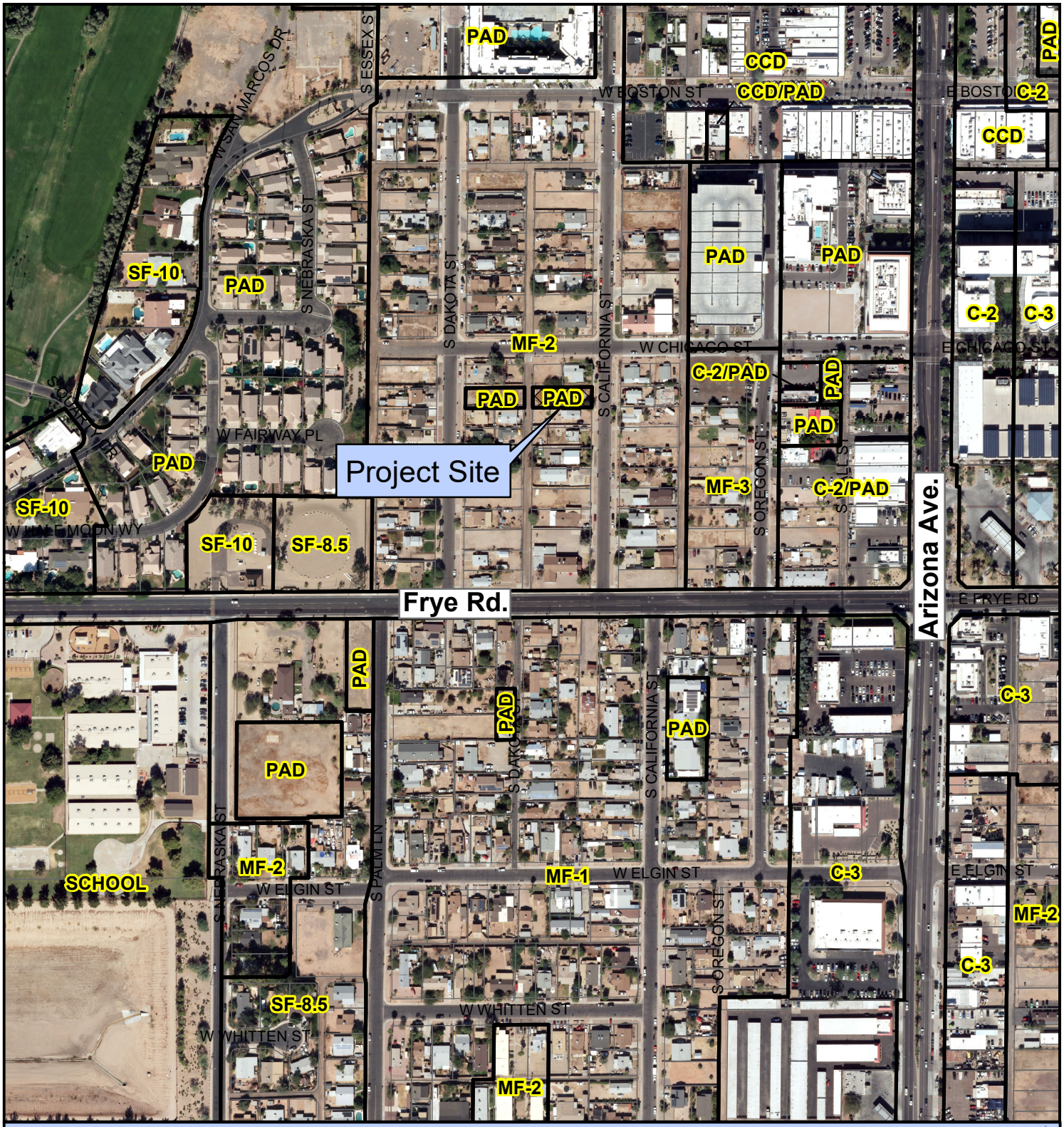
PLH24-0035 S California Duplex

Proposed Project Details
Rezone from PAD for Single -Family Residential to PAD for a Duplex and Preliminary Development Plan for site layout and building architecture



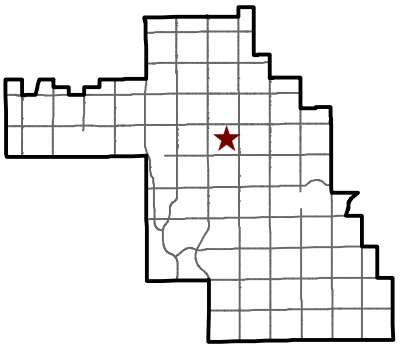
CHANDLER arizona

City of Chandler Planning Division
chandleraz.gov/planning
For more information visit:
https://gis.chandleraz.gov/planning



PLH24-0035 S California Duplex

Proposed Project Details
Rezone from PAD for Single -Family Residential to PAD for a Duplex and Preliminary Development Plan for site layout and building architecture



CHANDLER arizona

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PLH24-0035

California Duplex

Exhibits

02/12/2025

MCCANCE DUPLEX

To whom it concerns:

We're proposing to rezone for a new duplex on a vacant lot located - 210 S CALIFORNIA ST, CHANDLER, AZ 85249

We are looking to approve the alley driveway entry, and reduce the front setback to 20ft.

Also, this lot is 7,200 sf, and is currently zoned Single Family PAD, and we are looking to rezone from PAD for Single-Family to PAD for Multi-Family Residential, similar to the duplex approved at 211 S Dakota St.

The character of this project fits the surrounding neighborhood and will match similar duplex properties and other that already have 2 homes on the same lot – (see below for map)



Note the red outlines indicate lots with 2 units – green indicates where we're proposing to build our new duplex.

Also, there is a house already constructed at 280 S Dakota St (APN -303-09-166) that extends up to 2-stories – (see below) Ours won't be the only structure in the neighborhood at 2-stories tall.



The style of the be modern farmhouse, using stucco veneer w/ a stone wainscot, horizontal & vertical siding in the gables and on specific walls, with a peaked concrete tile roof. The balcony and trim will be painted with a neutral accent color that coordinates with the surroundings.

This duplex will have 2 units with separate entries and separate garages. The downstairs will be unit 1, and upstairs will be unit 2. Each will include a full kitchen, laundry, living and bedrooms.

Unit 1 will feature 3 bedrooms, 2 bathrooms, and a walk-out patio. The walk-out patio will be enclosed on 3 sides by unit 1 living spaces. Unit 1 will have 1,842 SF (livable) & 525 SF (garage), for a total of 2,367 SF. No operable unit 2 windows will open to the patio, creating visual and sound separation between the 2 units.

Unit 2 will feature 3 bedrooms, 2 bathrooms, and a walk-out balcony, and a separate stair and garage entry off the back. Unit 2 will have 2,314 SF (livable), 566 SF (garage), for a total of 2,880 SF. The balcony will be available to unit 2 spaces only.

The look of the home will be modern, using multiple materials and a unique gabled layout – (please see plan and elevations). The duplex will add to the rejuvenated character of the area, while maintaining the current use of the surrounding space. Note - it will not be facing the same street as the previously approved project on S Dakota.

The rezoning of this parcel and proposed project will have no effect on the cost of constructing housing in the area.

Please let me know if you have any questions.

Sincerely,

Todd Thompson

TODD THOMPSON

PROPERTY INFO

OWNER: MCCANCE DUPLEX
PHONE: (480) 326-4848
ADDRESS: 210 S CALIFORNIA ST
CHANDLER, AZ 85249
APN: 303-09-138
LOT: 7,200 SF

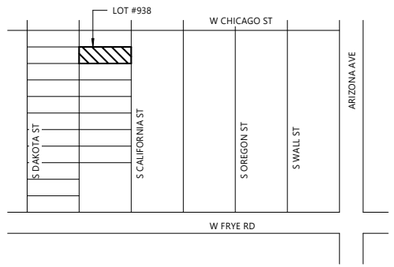
UNIT 1

LIVABLE:	1,842 SF
GARAGE:	525 SF
PORCH:	10 SF
UNC. PATIO:	233 SF
TOTAL SF:	2,610 SF

UNIT 2

LIVABLE:	2,314 SF
GARAGE:	566 SF
PORCH:	257 SF
COV PATIO:	110 SF
TOTAL SF:	3,247 SF
TOTAL LIVABLE: (BOTH LVLS)	4,156 SF

SITE MAP



PROJECT DESCRIPTION

NEW DUPLEX WITH SEPARATE GARAGES AND ENTRIES - FULL KITCHEN, 3-4 BEDROOM AND 2-3 BATHS

TOTAL SITE AREA: 7,200 SF
TOTAL BUILDING AREA: 3,367 SF (INCLUDES EAVES) 46.8%
TOTAL WALL AREA: 3,078 SF (EXCLUDES EAVES) 42.75%
TOTAL LANDSCAPE AREA: 2,508 SF 33.5%

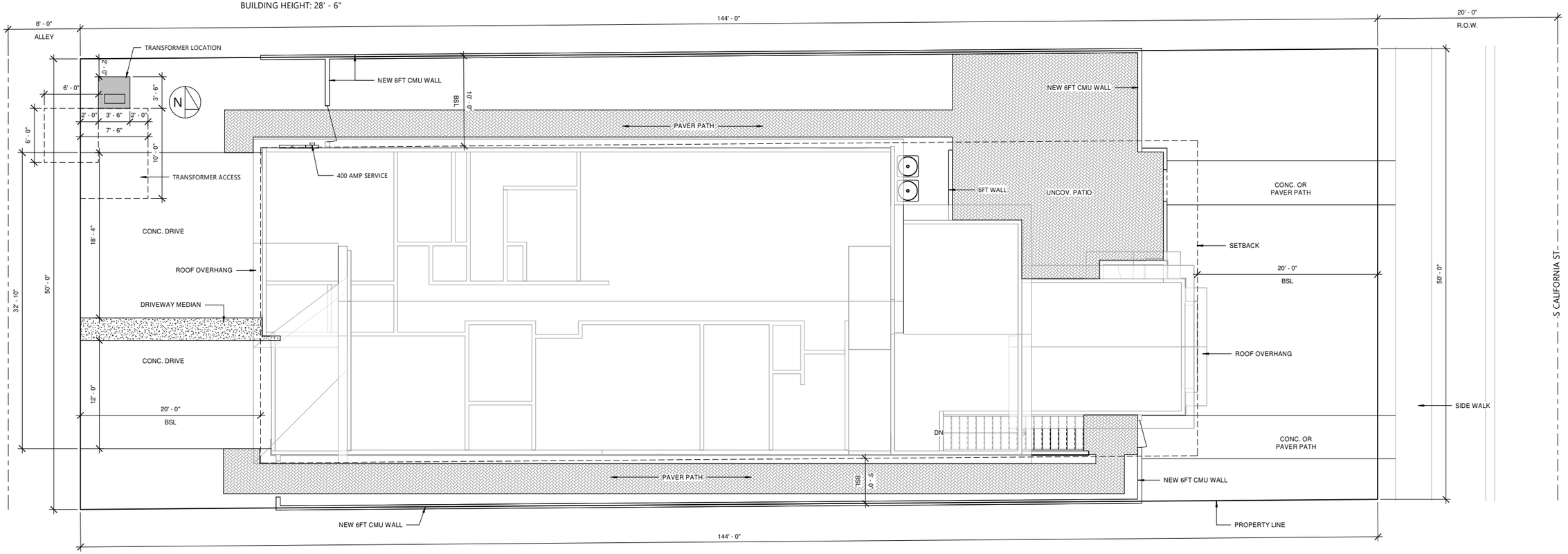
PARKING SPACES REQUIRED: 4 (2 PER UNIT)
PARKING SPACES PROVIDED: 4 (COVERED GARAGE)
HANDICAP SPACES: N/A
TOTAL PARKING PROVIDED: 4 SPACES

BUILDING HEIGHT: 28' - 6"

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GENERAL NOTES

1 DO NOT SCALE DRAWINGS
2 ALL EXTERIOR WALLS 2X6 STUD WALLS, UNLESS OTHERWISE NOTED
3 ALL INTERIOR WALLS 2X4 STUD WALLS, UNLESS OTHERWISE NOTED
4 SWD URETHANE SPRAY FOAM - CCRR-1011
5 DECRA ROOF TILES - ESR-1754 - COLOR E
6 HARDIE BOARD SIDING - ESR-1844 - COLOR A
7 ONE-KOTE STUCCO - ESR-1471 - COLOR A
8 ALUMINUM RAILING - ESR-3485
9 ALL EXTERIOR WALLS TO BE SW1 SHEAR WALLS PER SCHEDULE, U.N.O - SHEATHING AND
10 ATTACHMENT PER PLYWOOD GSN - U.N.O. ALL DOOR AND WINDOW HEADERS TO BE (2) 2X8 STUDS U.N.O.



1 SITE PLAN DETAILS
3/16" = 1'-0"

MCCANCE DUPLEX
210 S CALIFORNIA ST

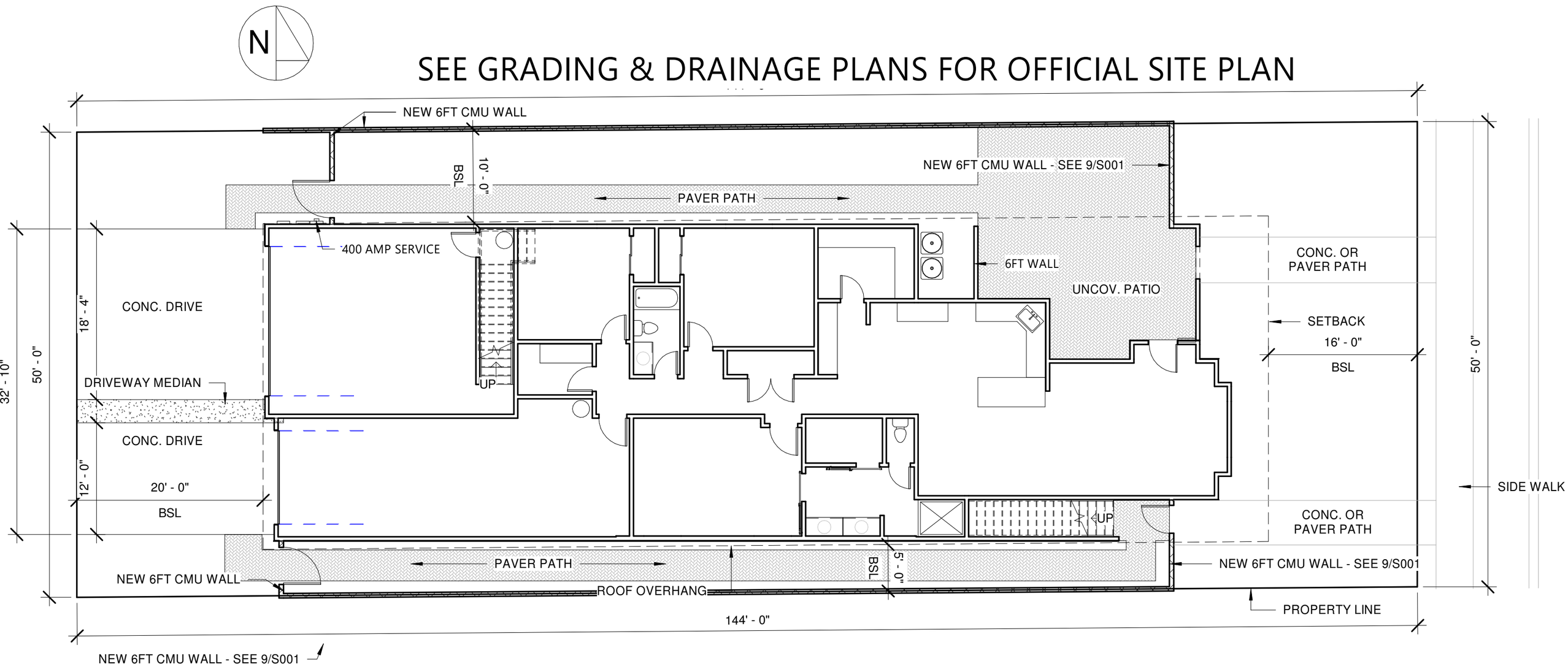
SITE PLAN

Project number	Project Number
Date	Issue Date
Drawn by	Author
Checked by	Checker

A000

Scale: As indicated

SEE GRADING & DRAINAGE PLANS FOR OFFICIAL SITE PLAN



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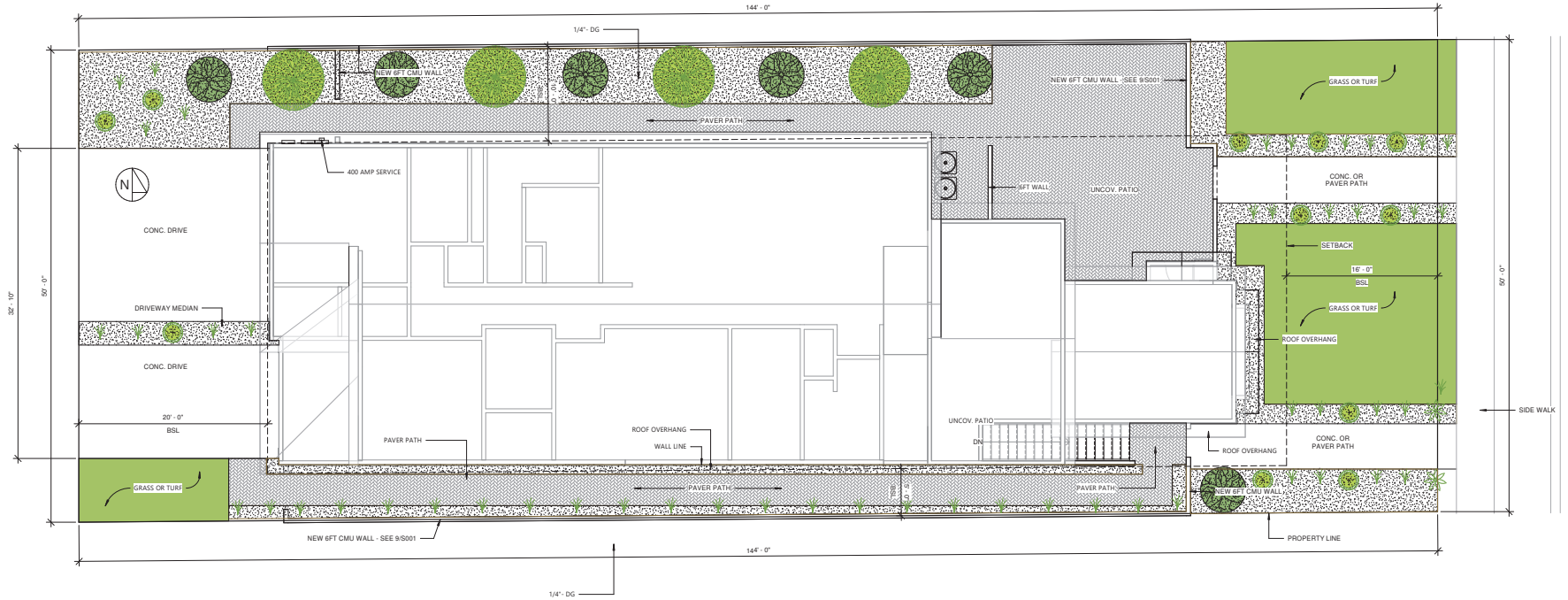
(8) - CHINESE PISTACHE - PISTACIA CHINENSIS
10 GALLON

(8) - CHASTE TREE - VITEX AGNUS-CASTUS
10 GALLON

(2) - PYGMY DATE PALM - PHOENIX ROEBELENI
5 GALLON

(13) - GAURA - GAURA LINDHEIMERI
1/2 GALLON

(32) - MEXICAN FEATHER GRASS - STIPA TENUISSIMA (NASSELLA T.)
1 GALLON



1 SITE PLAN DETAILS
3/16" = 1'-0"

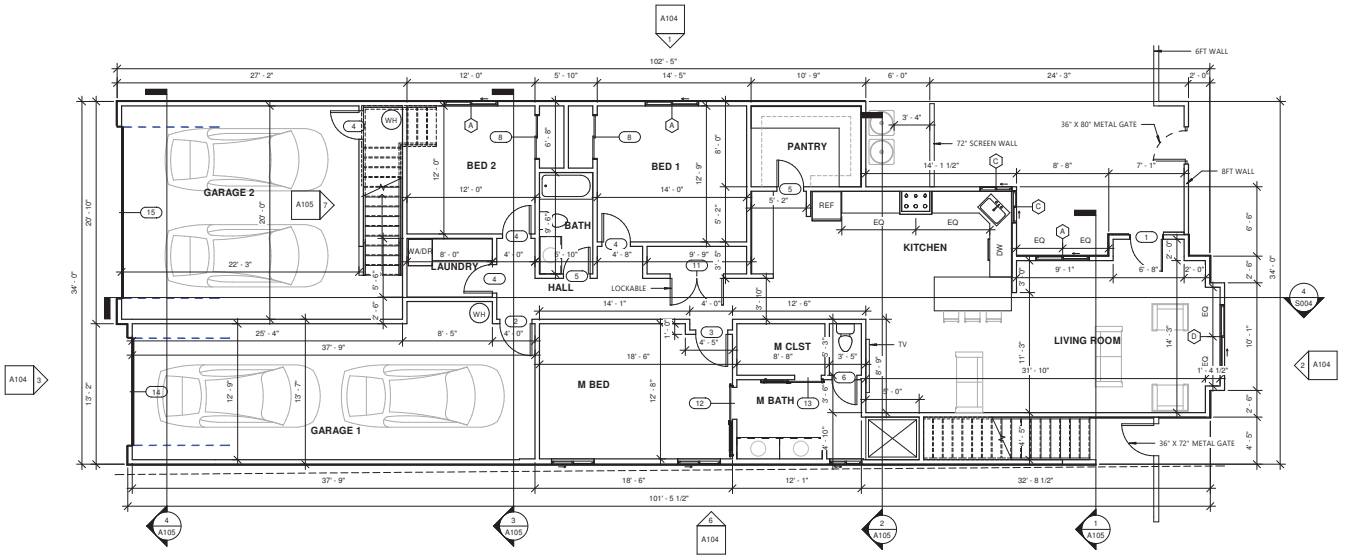
MCCANCE DUPLEX
210 S CALIFORNIA ST

LANDSCAPING PLAN

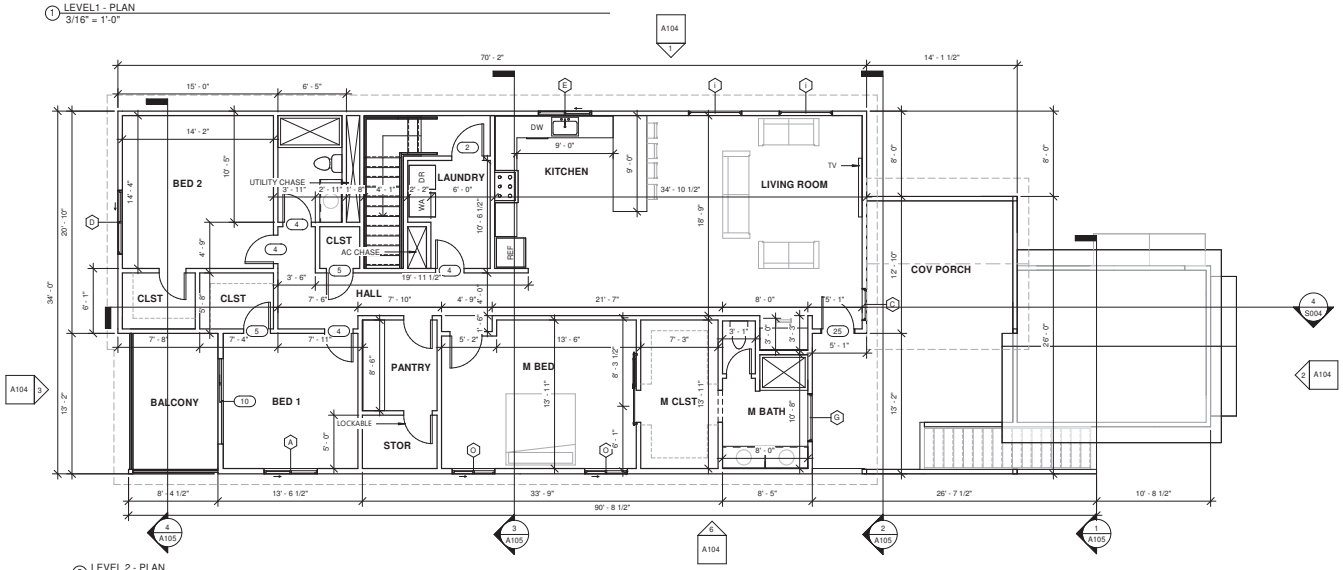
Project number	Project Number
Date	Issue Date
Drawn by	Author
Checked by	Checker

L001

Scale 3/16" = 1'-0"



1 LEVEL1 - PLAN
3/16" = 1'-0"



2 LEVEL 2 - PLAN
3/16" = 1'-0"

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GENERAL NOTES

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10 ATTACHMENT PER PLYWOOD GSN - U.N.O. ALL DOOR AND WINDOW HEADERS TO BE (2) 2X8 STUDS U.N.O.

WINDOW SCHEDULE

A 60" X 48" LOW-E SLIDING EGRESS WINDOW
B 48" X 84" LOW-E FIXED WINDOW
C 36" X 48" LOW-E FIXED @ 42" A.F.F.
D 72" X 60" LOW-E SLIDING EGRESS WINDOW
E 60" X 42" LOW-E SLIDING @ 42" A.F.F.
F 54" X 30" LOW-E FIXED WINDOW
G 54" X 18" LOW-E FIXED WINDOW
H 24" X 24" LOW-E FIXED WINDOW
i 60" X 48" LOW-E FIXED WINDOW

DOOR SCHEDULE

1 34" X 84" EXT. DOOR W/ TEMPERED GLASS
2 36" X 84" 20-MIN FIRE-RATED SINGLE DOOR
3 36" X 84" SINGLE INTERIOR DOOR
4 32" X 84" SINGLE INTERIOR DOOR
5 30" X 84" SINGLE INTERIOR DOOR
6 28" X 84" SINGLE INTERIOR DOOR
7 48" X 84" DOUBLE INTERIOR DOOR
8 48" X 84" SLIDING CLOSET DOOR
9 60" X 84" SLIDING BARN DOOR
10 96" X 84" SLIDING EXTERIOR DOOR
11 60" X 84" DBL INTERIOR LOCKABLE DOOR
12 36" X 84" BARN DOOR
13 30" X 84" BARN DOOR
14 144" X 84" SLIDING EXTERIOR DOOR
15 10' X 84" ROLL-UP GARAGE DOOR
16 16' X 84" ROLL-UP GARAGE DOOR
17 70" X 96" CASED OPENING

MCCANCE DUPLEX
210 S CALIFORNIA ST

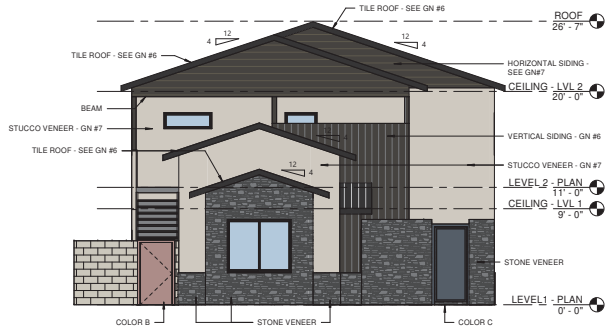
FLOORPLANS

Project number
Date
Drawn by
Checked by

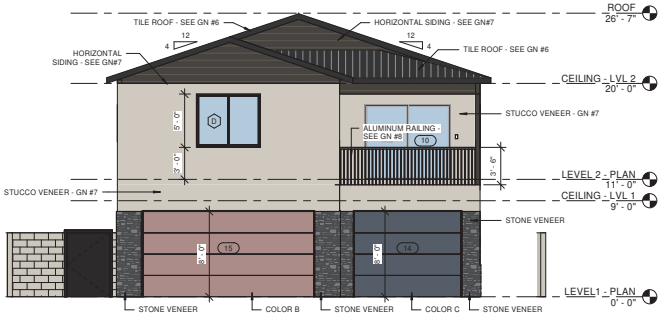
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Issue Date
Author
Checker

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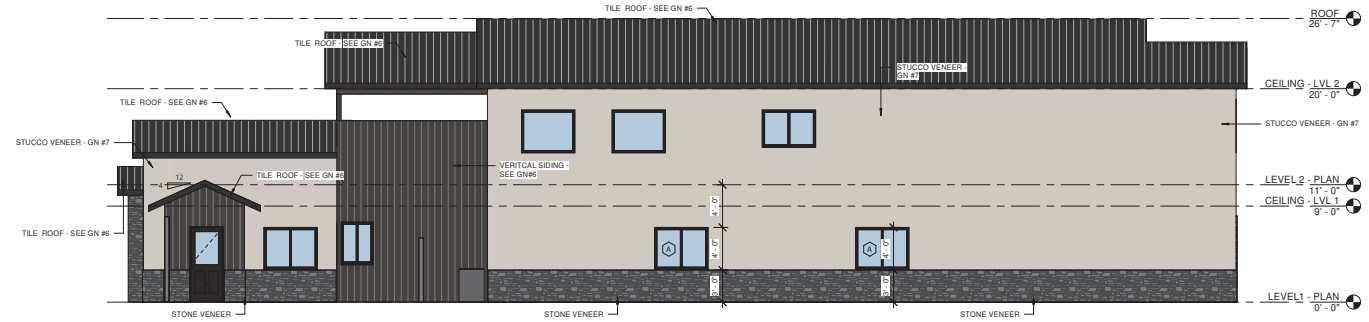
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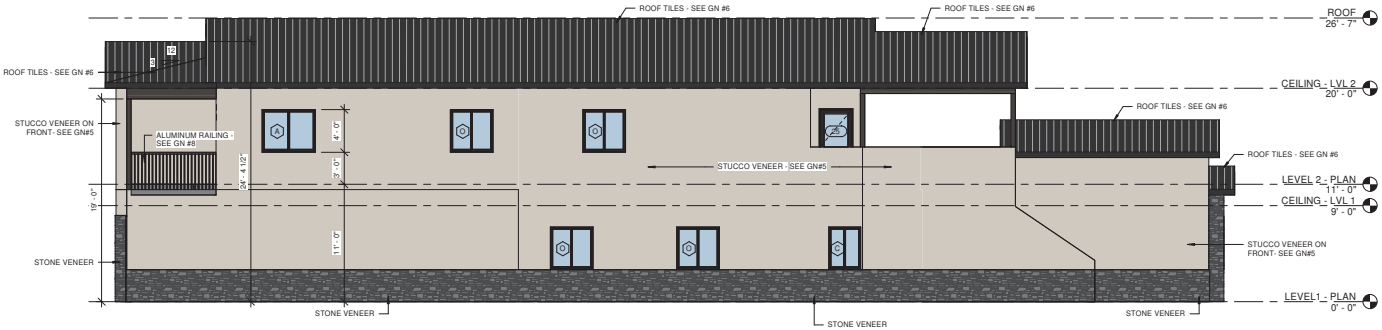
2 ELEVATION - EAST
3/16" = 1'-0"



3 ELEVATION - WEST
3/16" = 1'-0"



1 ELEVATION - SOUTH
3/16" = 1'-0"



6 ELEVATION - NORTH
3/16" = 1'-0"

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10 ATTACHMENT PER PLYWOOD GSN - U.N.O. ALL DOOR AND WINDOW HEADERS TO BE (2) 2X8 STUDS U.N.O.

COLOR NOTES

A BENJAMIN MOORE - 2107-60 SEA FROTH
B BENJAMIN MOORE - 2129 -30 BLUE NOTE
C BENJAMIN MOORE - 1189 SANTA ROSA
D BENJAMIN MOORE - 2134-30 IRON MOUNTAIN
E EAGLE DARK GRAY CONCRETE ROOF TILES
F APACHE STONE - CLOUD STRIP LEDGESTONE

MCCANCE DUPLEX
210 S CALIFORNIA ST

ELEVATIONS

Project number — Project Number
Date — Issue Date
Drawn by — Author
Checked by — Checker

A104A

Scale — As indicated

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02/06/2025

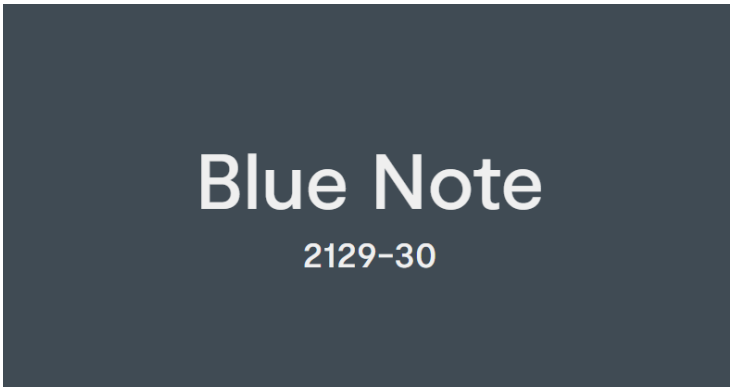
To Whom it Concerns,

The following colors will be used in the locations indicated:

EXTERIOR WALL COLOR



DOWNSTAIRS DOOR COLOR



UPSTAIRS DOOR COLOR



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ROOF SOFFIT AND TRIM COLOR

Iron Mountain

2134-30

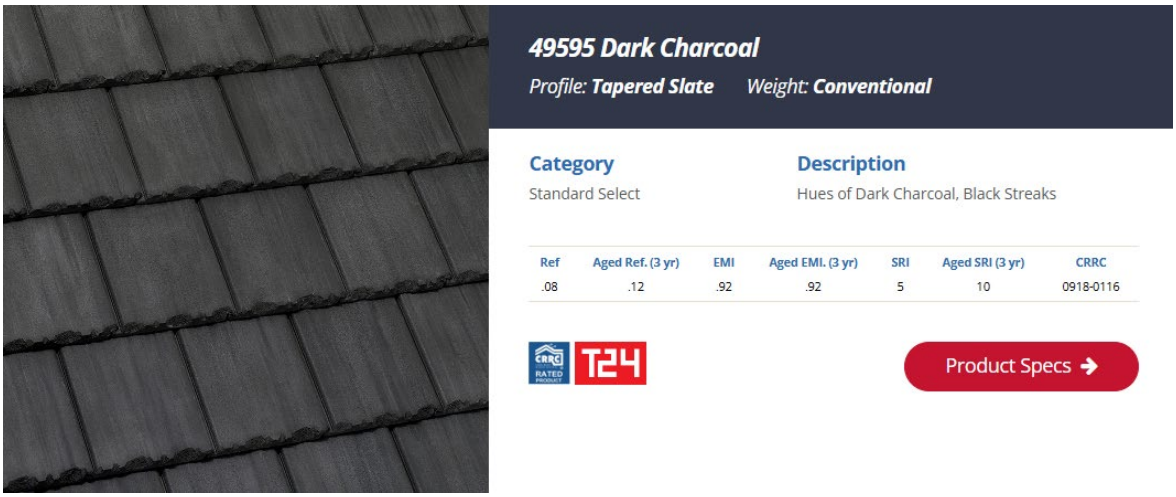
STONE VENEER

APACHE CLOUD STRIP | LEDGESTONE



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EAGLE ROOF TILE



Let me know if you have any questions.

Todd Thompson
etoddtDesign, Inc
(480) 720-1562

PS. Please reference the attached files for more information about the project.

Mikayela Liburd

From: Belen Barrios <belenstuff@hotmail.com>
Sent: Tuesday, May 20, 2025 10:05 AM
To: Mikayela Liburd
Subject: RE: Chandler Zoning Case: PLH24-0035 S CALIFORNIA DUPLEX

This Message Is From an External Sender
This message came from outside your organization.
Report Suspicious

Greetings Mikayla, Just wanted to express my concerns regarding the height of two story duplexes being approved by the city in the pueblo Viejo area. I live two blocks from this rezoning proposed building which would be totally out of character with the area. The duplex that went up at 211 S Dakota is totally out of place (it's a monstrosity) with the older properties and approving another two story full lot duplex will create an out of place structure for this neighborhood. Comparing a large two story duplex with older lots with two single level houses is not a valid comparison. Entering from the dirt alley will only add to the dust in the area. Long time privacy for surrounding homes will be lost by this two story building. Allowing large two story buildings scattered throughout this older neighborhood will reflect lack of concern and respect for the long time residence who already deal with additional traffic and noise from the downtown area. I am assuming this duplex will be/become a rental at a cost more than middle incomers. My preference would be to allow single level homes only in this area before the city opens the flood gates to investors building multi story structures scattered within this older part of town. They just don't fit the area. Any advice for me and others in approaching the city with this pueblo Viejo area concern would be appreciated.
Regards, Rene Barrios

Get Outlook for Android

From: Flor Martinez <flormartinez2213@gmail.com>
Sent: Wednesday, May 21, 2025 2:11 PM
To: Dana DeLong <Dana.DeLong@chandleraz.gov>; Kevin Mayo <Kevin.Mayo@chandleraz.gov>
Subject: California Street (PLH24-0035

This Message Is From an External Sender
This message came from outside your organization.
Report Suspicious

Honorable Chair and Board Members,

My name is Flor Martinez, and I am a lifelong resident and neighborhood leader in Pueblo Viejo, Chandler. I'm writing on behalf of several concerned residents from the Downtown neighborhood regarding the proposed project on California Street (PLH24-0035).

While the community welcomes development and revitalization, many neighbors are deeply concerned about the proposed height of this project. A similar development on Dakota Street, which is nearing completion, has already had a significant impact on the character of our neighborhood. Its size overwhelms the surrounding homes, occupies the entire lot, and compromises the privacy of adjacent properties allowing clear views into neighboring yards and homes from its second-story unit.

Pueblo Viejo is a historic, multi-generational neighborhood with deep roots and strong community ties. Residents are not opposed to new development, but they are asking that growth be balanced with respect for the area's existing charm, character, and privacy.

We respectfully ask the board to reconsider the height of the proposed California Street project to ensure it aligns more closely with the scale and spirit of our community.

Thank you for your time and thoughtful consideration.

Sincerely,
Flor Martinez
Pueblo Viejo Resident & Community Leader

CHANDLER arizona
Community of Innovation

City Council Memorandum **Economic Development** **Memo No.** ED25-032

Date: June 12, 2025
To: Mayor and Council
Thru: Joshua H. Wright, City Manager
Micah Miranda, Economic Development Director
From: Michael Winer, Economic Development Project Manager
Subject: Resolution No. 5915 Approving an Intergovernmental Agreement Between the City of Chandler and the Arizona Board of Regents, on Behalf of Arizona State University and Its L. William Seidman Research Institute, W.P. Carey School of Business, to Provide a 20-Year Economic Vitality Report for the City, in an Amount Not to Exceed $145,000; and Authorizing the Acceptance of Grant Funds from the Chandler Industrial Development Authority in the Amount of $150,000

Proposed Motion:

Move City Council pass and adopt Resolution No. 5915 approving an Intergovernmental Agreement between the City of Chandler and the Arizona Board of Regents, on behalf of Arizona State University and its L. William Seidman Research Institute, W.P. Carey School of Business, to provide a 20-year economic vitality report for the city, in an amount not to exceed $145,000; and authorizing the acceptance of grant funds from the Chandler Industrial Development Authority in the amount of $150,000.

Background/Discussion:

The Economic Development Division requests City Council approval to engage Arizona State University (ASU), through its L. William Seidman Research Institute, to provide a 20-year economic vitality report for the city. The report will address multiple topics critical to the city's future economic prosperity and will complement long-term planning efforts being undertaken for the city's 2026 General Plan Update. Funding for the report will be provided by a $150,000 grant awarded by the Chandler Industrial Development Authority (CIDA). CIDA will pay the grant in Fiscal Year 2025-26 and will cover the $145,000 in expenses related to the proposed contract with ASU. The grant will also provide $5,000 for ASU

Thunderbird School of Global Management student participation. Invoices will be paid directly by CIDA upon transmittal from the Economic Development Division.

This project follows a presentation provided to City Council at its August 15, 2024, regular meeting regarding Chandler's changing demographics and its future economic development challenges and opportunities. The report will establish a vision for the city's economic growth over the next 20 years as well as provide recommended actions that will help build a path toward a vibrant future. It will also address several issues that are anticipated to have a significant impact on the city's economic development, including demographic challenges, workforce needs, new resident recruitment strategies, land use, resilience of key industries and municipal revenue streams, and attraction of foreign direct investment. As such, it will require a consultant with expertise in multiple disciplines, such as economics, international business, public policy, marketing, urban planning, and real estate.

The Economic Development Division believes ASU is uniquely suited to deliver this report. ASU's Seidman Research Institute is a business research and economic consulting services group that has been part of the university since 1985. They have completed an extensive list of projects for both public and private sector clients. In addition to their team, they will be able to draw on the talent and insights of other staff across the university. Moreover, they have significant local and regional knowledge to apply to the project.

If this agreement is approved, ASU will start work on the report in July 2025, beginning with background research and data collection. During the report development process, ASU will receive input from community stakeholders, including corporate executives, entrepreneurs, civic leaders, and residents. The scope of services to be performed by ASU is attached with the agreement. It is anticipated the final report will be completed in early 2026.

Financial Implications:

There are no financial implications for the City of Chandler. All costs for the agreement will be paid using grant funds awarded by the Chandler Industrial Development Authority and held outside the city's budget.

Attachments

Resolution 5915

IGA City of Chandler - ASU

CIDA Grant Approval Letter

RESOLUTION NO. 5915

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF CHANDLER, ARIZONA, APPROVING AN INTERGOVERNMENTAL AGREEMENT BETWEEN THE CITY OF CHANDLER AND THE ARIZONA BOARD OF REGENTS FOR AND ON BEHALF OF ARIZONA STATE UNIVERSITY AND ITS L. WILLIAM SEIDMAN RESEARCH INSTITUTE, FOR THE PREPARATION OF A 20-YEAR ECONOMIC VITALITY REPORT, IN AN AMOUNT NOT TO EXCEED $145,000.

WHEREAS, the City of Chandler wishes to contract with the Arizona Board of Regents, for and on behalf of Arizona State University and its L. William Seidman Research Institute ("ASU"), for the preparation of a 20-year economic vitality report for the city; and

WHEREAS, the report will address multiple topics crucial to the city's future economic prosperity and will complement long-term planning efforts being undertaken for the city's 2026 General Plan Update; and

WHEREAS, work is expected to begin in July 2025, and completion of the report is expected by February 1, 2026; and

WHEREAS, the city has agreed to pay ASU the sum of $145,000 for preparation of the report and related work as detailed in Exhibit A of the attached intergovernmental agreement; and

WHEREAS, funding for the report has been secured through a grant by the Chandler Industrial Development Authority; and

WHEREAS, per Arizona Revised Statutes §§ 11-951 through 11-954, public agencies may enter into intergovernmental agreements for the provision of services or for joint or cooperative action.

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Chandler, Arizona, as follows:

Section 1. Approving the Intergovernmental Agreement between the City of Chandler and the Arizona Board of Regents on behalf of Arizona State University and its L. William Seidman Research Institute in substantially the form attached as Exhibit "A".

Section 2. Authorizing the Mayor to sign and execute the Intergovernmental Agreement on behalf of the City of Chandler.

PASSED AND ADOPTED by the City Council of the City of Chandler, Arizona, this ____ day of _____, 2025.

ATTEST:

_____ _____

CITY CLERK MAYOR

CERTIFICATION

I HEREBY CERTIFY that the above and foregoing Resolution No. 5915 was duly passed and adopted by the City Council of the City of Chandler, Arizona, at a regular meeting held on the ____ day of _____, 2025 and that a quorum was present thereat.

_____
CITY CLERK

APPROVED AS TO FORM:

_____
CITY ATTORNEY

INTERGOVERNMENTAL AGREEMENT
BETWEEN
CITY OF CHANDLER, ARIZONA
AND
ARIZONA BOARD OF REGENTS FOR AND ON BEHALF OF ARIZONA STATE UNIVERSITY'S SEIDMAN RESEARCH INSTITUTE
FOR
PREPARATION OF A 20-YEAR ECONOMIC VITALITY REPORT

This Intergovernmental Agreement ("Agreement") is entered into _____, 2025 ("the Effective Date"), by and between the City of Chandler, an Arizona municipal corporation (the "City"), and the Arizona Board of Regents, a body corporate, for and on behalf of Arizona State University and its L. William Seidman Research Institute, W. P. Carey School of Business ("ASU"). The City and ASU are sometimes jointly referred to as the "Parties" and individually as a "Party."

RECITALS

A. Arizona Revised Statutes ("A.R.S.") §§ 11-951 through 11-954 provide that public agencies may enter into intergovernmental agreements for the provision of services or for joint or cooperative action.

B. The Chandler City Council has passed and adopted a resolution authorizing the Mayor of the City of Chandler to execute this Agreement on behalf of the City.

C. ASU is authorized by A.R.S. §§ 15-1625 *et seq.* to enter into this Agreement and has delegated to the undersigned the authority to execute this Agreement on behalf of ASU.

D. The City proposes to engage ASU to prepare a 20-year economic vitality report ("Report") as more fully described in the Scope of Work set forth in **Exhibit A**, which is attached to and made a part of this Agreement by this reference.

E. ASU is ready, willing, and able to provide the services described in **Exhibit A** for the compensation and fees set forth and as described in **Exhibit B**, which is attached to and made a part of this Agreement by this reference.

AGREEMENT

NOW, THEREFORE, in consideration of the mutual covenants and provisions contained in this Agreement and other good and valuable consideration, the adequacy of which is hereby acknowledged, the Parties agree as follows:

1. Term and Termination.

1.1 The term of this Agreement will commence on the Effective Date and shall continue until the completion of the work set forth in the attached Scope of Work, unless sooner terminated in accordance with the provisions of this Agreement.

1.2 Either Party may terminate this Agreement at any time by giving the other Party not less than thirty (30) days prior written notice. If this Agreement is terminated by the City, the City will remain responsible for payment to ASU for all services performed through the date of termination and for reimbursement to ASU of all non-cancelable commitments incurred in the performance of the services.

2. ASU Responsibilities.

2.1 ASU will provide the services described in the Scope of Work attached as **Exhibit A**.

2.2 ASU will work diligently and make reasonable efforts to complete the Scope of Work, generally following the Project Timeline attached as **Exhibit C**, and issue a final Report by February 1, 2026. ASU shall provide the City with updates as described in the Scope of Work.

2.3 ASU neither makes nor will be deemed to have made any representation or warranty whatsoever (express or implied) regarding any outcome obtained or deliverable delivered hereunder including any outcome desired by City. City understands that it is engaging ASU to undertake an independent analysis based on available data and facts. If City has suggestions for alternative ways to present or interpret information gathered and presented, ASU will consider such requests for a period of 30 days after completion of the Report. ASU reserves the right to express final conclusions in a manner consistent with its interpretation and analysis of the data.

3. City Responsibilities.

3.1 City will support ASU by providing access to historical data and reports about Chandler and by making introductions to key stakeholders to facilitate required stakeholder engagement as further described in the Scope of Work.

4. Compensation and Invoicing.

4.1 Unless amended in writing by the Parties, ASU's compensation and fees as more fully described in **Exhibit B** for performance of the Scope of Work approved and accepted by the City under this Agreement must not exceed $145,000. No additional charges, outside of the approved services budget set forth in **Exhibit B**, will be eligible for payment unless approved in writing by the Parties. ASU shall invoice City monthly for pre-approved services performed. Invoices shall include a brief narrative of the work performed.

4.2 The City will make payment for services within 30 days of the City's receipt of the invoice. ASU bears all responsibility and liability for any and all tax obligations that result from ASU's performance under this Agreement.

5. Notices. All notices or demands upon any Party to this Agreement, and any change in contact information, will be in writing and delivered electronically, in person, or by mail, addressed as follows:

To City of Chandler: Economic Development Director City of Chandler P.O. Box 4008 Mail Stop 416 Chandler, AZ 85244-4008 micah.miranda@chandleraz.gov With a copy to: City Attorney City of Chandler P. O. Box 4008 Mail Stop 602 Chandler, AZ 85244-4008 kelly.schwab@chandleraz.gov	To ASU: Arizona State University L. William Seidman Research Institute P.O. Box 874011 Tempe, AZ 85287-4011 Attn: Dr. Anthony Evans, Director anthony.j.evans@asu.edu With a copy to: Arizona State University Attn: Senior Vice President and General Counsel Via Personal Delivery or Overnight Courier Service: 300 E. University Dr., Suite 335 Tempe, AZ 85281-2061 Via U.S. Mail: P.O. Box 877405 Tempe, AZ 85287-7405 Email: ogcmail@asu.edu

6. Indemnification. Each Party (as "indemnitor") agrees to indemnify, defend, and hold harmless the other Party (as "indemnitee") from and against any and all claims, losses, liability, costs, or expenses (including reasonable attorney fees) (hereinafter collectively referred to as "claims") arising out of bodily injury of any person (including death) or property damage, but only to the extent that such claims which result in vicarious/derivative liability to the indemnitee, are caused by the act, omission, negligence, misconduct, or other fault of the indemnitor, its officers, officials, agents, employees, or authorized volunteers.

ASU is a public institution and, as such, any indemnification, liability limitation, release or hold harmless provision set forth in this Agreement will be limited as required by Arizona law, including without limitation Article 9, Sections 5 and 7 of the Arizona Constitution and A.R.S. §§ 35-154 and 41-621.

7. Subcontracting. ASU will not employ, contract with, or use the services of any consultant, special contractor(s), or other third parties (collectively, "Subcontractor") in connection with the performance of its obligations under this Agreement without the prior written consent of the City. ASU will inform the City in writing of the name, proposed service to be rendered, and compensation of Subcontractor, and of any interest ASU may have in the proposed Subcontractor. ASU will require any Subcontractor to agree to the City's standard indemnity and insurance requirements for professional services. Approval shall not be unreasonably withheld upon receipt of written request to subcontract.

8. Rights in Data. City shall have the use of data and reports resulting from this Agreement without additional cost or other restriction except as may be established by law or applicable regulation. Subject to the foregoing, each Party shall supply to the other Party, upon request, any available information that is relevant to this Agreement and to the performance thereunder.

9. Nondiscrimination and Compliance with Laws. The Parties will comply with all applicable state and federal laws, rules, regulations, and executive orders governing equal employment opportunity, immigration, and nondiscrimination, including the Americans with Disabilities Act. If applicable, the Parties will abide by the requirements of 41 CFR §§ 60-1.4(a), 60-300.5(a) and 60-741.5(a). These regulations prohibit discrimination against qualified individuals based on their status as protected veterans or individuals with disabilities and prohibit discrimination against all individuals based on their race, color, religion, sex, or national origin. Moreover, these regulations require that covered prime contractors and subcontractors take affirmative action to employ and advance in employment individuals without regard to race, color, religion, sex, national origin, protected veteran status or disability.

10. Cancellation for Conflict of Interest. No official, officer, or employee of either Party will have a direct or indirect interest in this Agreement, nor participate in decisions relating to the Agreement as prohibited by law. The Parties hereto acknowledge that this Agreement is subject to cancellation pursuant to the provisions of A.R.S. § 38-511.

11. Service Marks and Trademarks. ASU shall see to it that all marketing materials created for the Report clearly communicate that it is sponsored by the City. Except for the foregoing, neither Party will use any service marks, trademarks, trade names, logos, or other identifying names or marks of the other Party without the express, prior, written approval of the other Party. The use of any names or marks must comply with the requirements of the Party that owns the mark, including using the "®" indication of a registered trademark.

12. Arbitration. Per A.R.S. § 12-1518, the Parties agree to arbitrate disputes filed in Arizona Superior Court that are subject to mandatory arbitration pursuant to A.R.S. § 12-133.

13. Legal Worker Requirements. The Parties will comply with the applicable requirements of A.R.S. §41-4401.

14. No Israel Boycott or Forced Labor of Ethnic Uyghurs. The Parties will direct all contractors to comply with the applicable requirements of A.R.S. § 35-393.01 and A.R.S. § 35-394.

15. Records. ASU will maintain complete, timely and accurate records of its activities and work under this Agreement. ASU agrees to retain all records relating to this Agreement for a period of five years after the termination of this Agreement, and to make all such records available for inspection and audit by the City or its representative upon reasonable advance notice and during normal business hours during the term of this Agreement.

16. Relationship of the Parties; Similar Services. Each Party is an independent contractor and is independent of the other Party. Under no circumstances will any employees of one Party be deemed the employees of the other Party for any purpose. This Agreement does not create a partnership, joint venture, or agency relationship between the Parties of any kind or nature. This Agreement does not create any fiduciary or other obligation between the Parties, except for those obligations expressly and specifically set forth herein. Neither Party will have any right, power, or authority under this Agreement to act as a legal representative of the other Party. Neither Party will have any power to obligate or bind the other or to make any representations, express or implied, on behalf of or in the name of the other in any manner or for any purpose whatsoever contrary to the provisions of this Agreement. ASU students are not deemed to be employees of the City by virtue of this Agreement. Each Party acknowledges that the relationship of the Parties hereunder is non-exclusive.

17. Entire Agreement; Severability. This Agreement contains the entire understanding between the Parties concerning the subject matter of this Agreement and supersedes any and all prior understandings, agreements, representations, and warranties, express or implied, written or oral, between the Parties concerning the subject matter of this Agreement. The Parties agree that should any part of this Agreement be held to be invalid or void, the remainder of the Agreement will remain in full force and effect and will be binding upon the Parties.

18. Amendments and Waivers. No waiver, amendment or modification of this Agreement will be valid or binding unless written and signed by the Parties. Waiver by either Party of any breach or default of any clause of this Agreement by the other Party will not operate as a waiver of any previous or future default or breach of the same or different clause of this Agreement.

19. Assignment. Neither Party will assign or transfer any interest in this Agreement without the prior written approval of the other Party. Any attempted assignment in violation of this provision will be null and void. Subject to the foregoing, this Agreement will be binding upon the permitted successors and permitted assigns or other permitted transferees of the Parties.

20. Governing Law; Venue. This Agreement will be governed by and construed in accordance with the laws of the State of Arizona, without regard to its conflict of laws principles. Any proceeding arising out of or relating to this Agreement will be conducted in Maricopa County, Arizona. Each Party waives any objection it may now or hereafter have to venue or to convenience of forum.

21. Force Majeure. Neither Party will be liable for failure to perform any obligation under this Agreement if such failure is directly caused by a Force Majeure Event. A "Force Majeure Event" means an event or circumstance that is beyond the reasonable control and without the fault or negligence of the Party impacted, and that could not have been prevented by the reasonable diligence of the Party but expressly excludes a Party's payment obligations under this Agreement. Without in any way limiting the foregoing, a Force Majeure Event may include, but is not restricted to, acts of God or of a public enemy, acts of the Government in either its sovereign or contractual capacity, war, riots, fires, floods, epidemics or pandemics, mass health issues or disease, quarantine restrictions, strikes or labor difficulties, civil tumult, freight embargoes, natural disasters, unusually severe weather, a failure or disruption of utilities or critical electronic systems, acts of terrorism, mass shootings or other emergencies that may disrupt the operations of a campus or facility.

22. No Third-Party Beneficiaries. Nothing in this Agreement, express or implied, is intended or will be construed to confer upon any person or entity, other than the Parties and their respective successors and assigns permitted by this Agreement, any right, remedy, or claim under or by reason of this Agreement.

23. Recitals and Exhibits. All recitals herein, and all exhibits attached hereto and referred to herein, are integral and material parts of this Agreement.

24. Counterparts. This Agreement may be executed in one or more counterparts, each of which will be deemed an original, but all of which taken together will constitute one and the same instrument, and photocopy, facsimile, electronic and other copies will have the same effect for all purposes as an ink-signed original.

[SIGNATURES ON NEXT PAGE]

IN WITNESS WHEREOF, the Parties hereto have executed this Agreement on the date written above.

City of Chandler

By _____
Kevin Hartke
Mayor

ATTESTED TO:

_____
City Clerk

Arizona Board of Regents for and on behalf of Arizona State University

By _____

Its EVP and University Provost

INTERGOVERNMENTAL AGREEMENT DETERMINATION

This Intergovernmental Agreement between the City of Chandler and the Arizona Board of Regents, for and on behalf of Arizona State University, has been reviewed pursuant to A.R.S. § 11-952 by the undersigned, who have determined that it is in the proper form and is within the power and authority granted under the laws of the State of Arizona.

APPROVED AS TO FORM:

_____
City Attorney

APPROVED AS TO FORM:

_____
Office of General Counsel,
Arizona State University

EXHIBIT A
SCOPE OF WORK

The purpose of this Report is to establish a vision for the City's economic growth over the next 20 years and provide recommendations that will help build a path toward a vibrant future. ASU shall perform the following professional services and tasks to complete the Report.

Benchmarking

- ASU will review previous economic plans, studies, and other related information provided by the City to ensure the Report and strategies recommended therein build on existing plans, where relevant. To the degree possible, the City will make available local data requested by ASU, understanding ASU may have access to better and more convenient sources of data than the City. Any gaps in data identified by ASU deemed necessary to inform the establishment of tactics will be discussed with the City.

Demographic Analysis

- ASU in collaboration with the City will source relevant historical data about Chandler. This will include analysis of the following:
    - Demographic Profile: trends in population, household size, median age, age groups, household income, property ownership, skills gaps, unemployment, underemployment, and race, among other factors.
    - Educational Data: K-12 school provision and enrollment, test scores by school district, school grade ratings, high school graduation rates, community college and university provision, and the population's level of educational attainment, including key subgroups (e.g., Latino residents).

Stakeholder Engagement

- Create an online survey and promote it (via email outreach) to a list of Chandler-based businesses identified by the City.
- Conduct 12 in-depth interviews (in-person or by phone) with key industry corporate executives, entrepreneurs, civic leaders, and other community stakeholders identified by the City.
- Moderate two resident stakeholder group engagement sessions to capture visions on Chandler's future for incorporation in the final Report.

SWOT Analysis

- Identify major strengths, weaknesses, opportunities, and threats to the City's long-term economic vitality.
- Compare Chandler's economy to a peer group of three competitive markets, chosen in consultation with the City.
- Evaluate the resilience of the City's target industries and risks associated with their stability and growth in Chandler.

Economic Snapshot

- Prepare an overview of how Chandler's economy has grown over time.
- Discuss how the City's five employment corridors contribute to Chandler's economy.
- Implement an IMPLAN analysis of the historical contribution of the State of Arizona's five key target industries to the Chandler economy (Aerospace and Defense; Bioscience

and Health Care; Business and Financial Services; Manufacturing; Technology and Innovation). This analysis is to encompass direct and indirect/induced (multiplier) effects. The impacts will be expressed in terms of total employment, total labor income, and total State GDP contribution.
- Discuss Chandler's growth to date in comparison with five other cities/regions, chosen in consultation with the City.

Urban Planning
- Consider the implications of falling land availability as the City approaches build out, including the following areas of interest:
    - Residential and commercial property prices.
    - Benefits of rezoning to allow for higher-density infill and redevelopment projects.
    - Comparisons with the development of three other cities/regions, chosen in consultation with the City.
- ASU is to consult with the City's Planning Division to avoid conflict with any urban planning goals in the City's 2026 General Plan.

Workforce Development and New Resident Recruitment Strategies
- Based on the challenges identified in the Demographic Analysis, consider ways to encourage new people to relocate and work in Chandler. Include a summary of:
    - Current and future commute times for residents to their place of work.
    - The historical appeal of Chandler as a place to live and work.
    - Ways in which the City can provide a quality of life that will be attractive to current and future residents.
    - The anticipated future workforce needs of Chandler businesses.
    - Ways in which those future workforce needs can be met from current and future residents.
    - Local initiatives and partnerships to position Chandler as the place to live, work, and play to attract people from elsewhere in Arizona and outside the state.

Taxation
- Drawing from the challenges identified in the Demographic Analysis, compare the potential future investment needs of the City with its projected tax base.
- Discuss how the City could be impacted by proposed State legislation that would eliminate municipal revenue sources (e.g., ban on levying grocery taxes) and the sunsetting of State programs that support investments made by the City (e.g., A.R.S. §§ 42-5032.02, which allows municipalities to seek a reimbursement of costs for a qualified manufacturing building and other infrastructure from Arizona Department of Revenue transaction privilege tax revenues collected from contractors involved in the building improvement).

Foreign Direct Investment (FDI) Attraction Strategies
The City is engaging the Thunderbird School of Global Management, through its Global Challenge Lab, to conduct an international analysis of geographies the City should target for FDI opportunities and prepare a five-year implementation plan with budget. ASU is to coordinate with Thunderbird representatives to ensure their analysis is integrated into the final Report, supplementing their insights on an as-needed basis. To complement Thunderbird's analysis, ASU will also provide:

- A discussion of the broader macroeconomic trends with respect to FDI.
- Identification of the various sources for FDI currently received within the greater Phoenix metropolitan area.
- Insights on potential future changes to FDI trends.
- An evaluation of the vulnerability of Chandler's economy to changing FDI trends.

Goals and Recommendations

Informed by the research, analysis, stakeholder feedback, and findings from the other elements of the Scope of Work, this section of the Report will detail:

- Five big projects to build the foundation for Chandler's continued economic prosperity.
- Three to five recommended actions to be taken by the City to accomplish each project.

Final Report

- The final deliverable of this project is a 20-year economic vitality report that establishes a vision and specific recommendations for the City.
- ASU is to serve as the author and editor of the Report and is responsible for commissioning any professional graphic design work necessary to complete the Report. The City will not pay any subcontractor fees outside of what is included in Exhibit B.
- ASU is to deliver a draft of the Report on or before January 10, 2026. The City will review and provide comments on the draft within 10 business days.
- ASU is to deliver the final Report on or before February 1, 2026.
- ASU will deliver the final Report in multiple formats for use by the City:
    - A camera-ready file for printing.
    - An electronic version for distribution online or via social media channels.
    - A summary presentation version in PowerPoint format.

Progress Reports

- ASU will provide the City with monthly and quarterly reports detailing progress made toward completing the Scope of Work. Reports will be due on the following dates:
    - August 31, 2025
    - September 30, 2025
    - October 31, 2025
    - November 30, 2025
    - December 31, 2025
- ASU will provide two Report progress presentations to relevant City boards and commissions (e.g., Economic Development Advisory Board and Industrial Development Authority Board) upon request by the City. The City will provide sufficient notice for ASU to confirm availability and prepare for the presentations.

EXHIBIT B
FEE SCHEDULE

The fee below is inclusive of all costs associated with performance of services described in the Scope of Work.

20-Year Economic Vitality Report $145,000

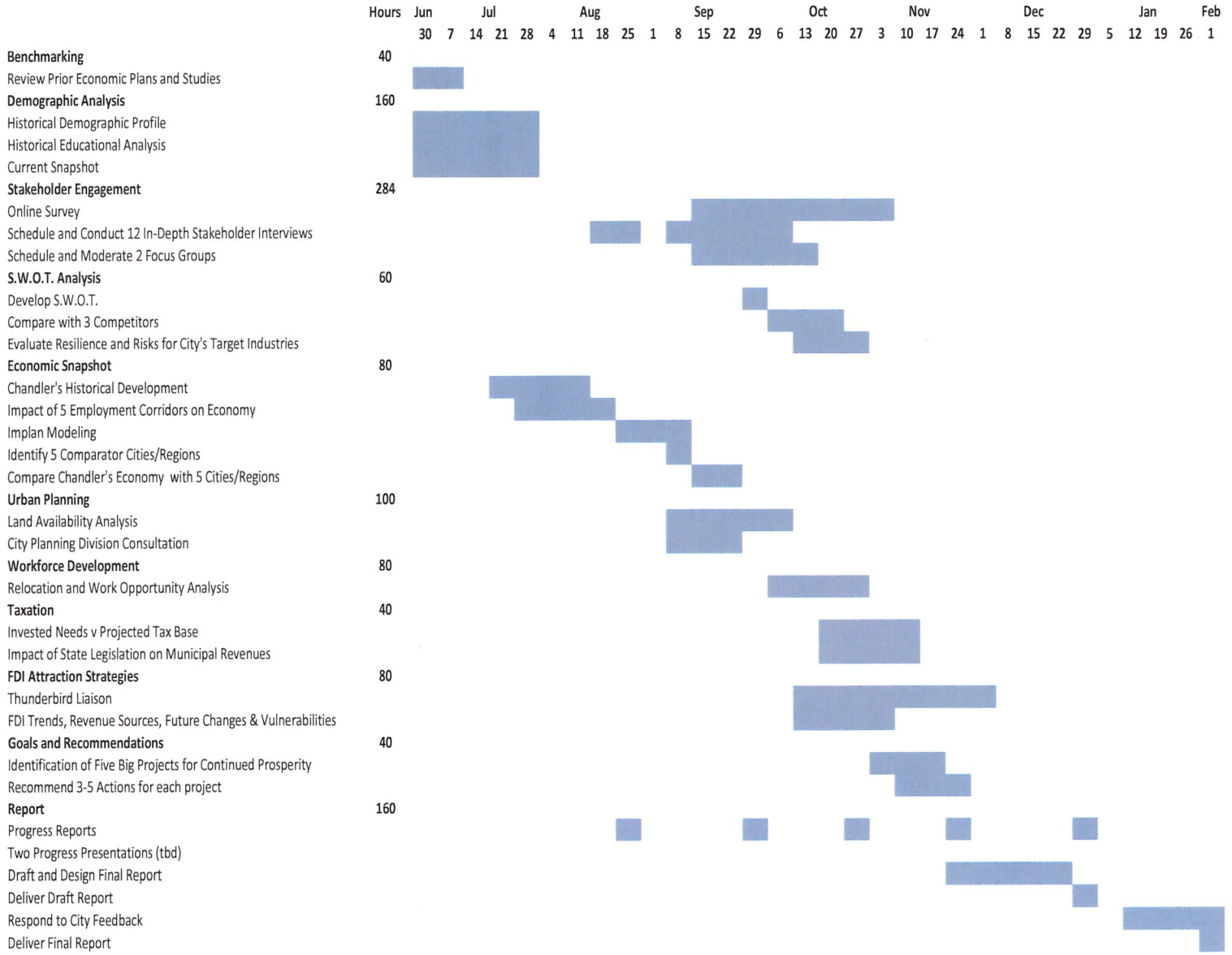
ASU will invoice the City for costs incurred according to the following schedule:

Invoice Date	**Payment Due**
August 1, 2025	August 31, 2025
September 1, 2025	October 1, 2025
October 1, 2025	October 31, 2025
November 1, 2025	December 1, 2025
December 1, 2025	December 31, 2025
January 1, 2026	January 31, 2026
February 1, 2026	March 3, 2026

All payments should be issued to:

Angela Phillips (Administrative Assistant)
L. William Seidman Research Institute
P.O. Box 874011
Tempe, AZ 85287-4011

EXHIBIT C
PROJECT TIMELINE



CHANDLER
arizona
Community of Innovation

April 8, 2025

Micah Miranda
Economic Development Director and
Michael Winer
Economic Development Project Manager
City of Chandler
175 S. Arizona Ave.
Chandler, Arizona 85225

Subject: 2025 Next Twenty Economic Vitality Report Grant

Dear Mr. Miranda and Mr. Winer:

Thank you for the submittal of the proposal and grant request presented at the March 11, 2025, Industrial Development Authority (IDA) meeting. The IDA approved the grant request in the amount of $150,000 that will fund the engagement of Arizona State University (ASU) to prepare a twenty-year economic vitality plan for the City of Chandler. This plan will address multiple topics critical to the city's future economic prosperity and will complement long-term planning efforts being undertaken for the city's 2026 General Plan update.

The IDA will pay the grant in Fiscal Year 2025-26, and will cover $145,000 in expenses related to the signed contract with ASU Seidman Research Contract and $5,000 in reimbursement for student expenses related to their participation in the Thunderbird Global Challenge Lab. Upon receipt of invoices, please forward them to the IDA for payment. Quarterly progress reports to the IDA will be used to monitor the program success and should begin no later than July 2025.

If you have any questions regarding this letter, please contact Dawn Lang, City of Chandler, Deputy City Manager|CFO at (480) 782-2255 or dawn.lang@chandleraz.gov.

Sincerely,

FOR Charles Ertl, President
Chandler Industrial Development Authority

Management Services | Administration
T: 480 782 2250 | F: 480 782 2553 | Mail Stop 609, PO Box 4008, Chandler, AZ 85224-4008 | Location: 175 S. Arizona Ave., Chandler, AZ 85225 | chandleraz.gov

CHANDLER arizona
Community of Innovation

City Council Memorandum **Economic Development** **Memo No.** ED25-034

Date: June 12, 2025
To: Mayor and Council
Thru: Joshua H. Wright, City Manager
Micah Miranda, Economic Development Director
From: Michael Winer, Economic Development Project Manager
Subject: Resolution No. 5916 Approving a Second Amendment to the Intergovernmental Agreement Between the City of Chandler and the Arizona Board of Regents, on Behalf of Arizona State University, for the Delivery of Business Incubator and Ecosystem Building Services, in an Amount Not to Exceed $275,000 Annually, for the Period of Two Years, Beginning July 1, 2025, Through June 30, 2027

Proposed Motion:

Move City Council pass and adopt Resolution No. 5916, approving a second amendment to the Intergovernmental Agreement between the City of Chandler and the Arizona Board of Regents, on behalf of Arizona State University, for the delivery of business incubator and ecosystem building services, in an amount not to exceed $275,000 annually, for the period of two years, beginning July 1, 2025, through June 30, 2027.

Background/Discussion:

Since 2009, the Chandler City Council has approved funding for local business incubator programming with the goal of supporting and elevating the entrepreneurial ecosystem to diversify the employment base and drive business and job growth in Chandler. Business incubator management services are currently being provided by Arizona State University (“ASU”) through an intergovernmental agreement (“IGA”) with the City of Chandler (“City”). The Chandler Endeavor Venture Innovation Incubator (“Chandler Endeavor”) program is housed at the ASU Chandler Innovation Center and managed by a team of community entrepreneurship leaders from ASU’s J. Orin Edson Entrepreneurship + Innovation Institute (“Edson E+I”). The IGA between the City and ASU had an initial one-year term of July 1, 2023, through June 30, 2024, with the option of up to four

one-year extensions. The parties agreed to exercise the first option to extend the term for another year, from July 1, 2024, through June 30, 2025.

On May 12, 2025, the City Council Economic Vitality Subcommittee received an update on the ASU Chandler Innovation Center and Chandler Endeavor program. During the meeting, ASU highlighted the program's growth, the community that has been built, and client testimonials. The future of the City's partnership with ASU was also discussed with the Subcommittee asking what is needed to keep it flourishing. Funding stability for the Chandler Endeavor program was identified as the most important issue. This proposed second amendment seeks to provide greater funding stability, requesting City Council authorization to exercise the second and third options to extend the term for another two years from July 1, 2025, through June 30, 2027.

Below are performance measures established for the 2024-25 contract year. The column on the right shows performance as of May 12, 2025, demonstrating the valuable support ASU has provided to local entrepreneurs and success with engaging the community. A revised Scope of Services and updated Performance Measures have been prepared for the proposed amendment to the IGA. ASU will continue to provide the city with quarterly progress reports.

Performance Measure	**2024-25 Targets**	**2024-25 Actuals[1]**
Total people engaged in the Chandler Endeavor ecosystem	500	1,393
Ventures engaged in Fall 2024 Cohort Ventures engaged in Spring 2025 Cohort	6 6	10 10
Total number of ventures given access to private office space	6	9
Average Net Promoter Score for all ASU Edson E+I initiated programming[2]	60%	>85%
Venture Challenge pitch competition / funding events hosted	2	2

1. Data is for the period July 1, 2024, through May 12, 2025. Contract term runs through June 30, 2025.
2. Customer satisfaction metric based on participant surveys with 60% being industry average for educational training.

Financial Implications:

A one-time decision package request has been submitted for the Fiscal Year 2025-26 budget to make funds available for the third term of the IGA in the Innovations cost center account 101.1590.5219.0000. Another one-time decision package would be submitted for the Fiscal Year 2026-27 budget to make funds available for the fourth term of the IGA. If funding is not approved by City Council, there are provisions within the contract where the city can terminate the remainder of the contract without any further obligations.

Attachments

Resolution 5916

Chandler Endeavor IGA Amendment 2

Economic Vitality Subcommittee Meeting Minutes

RESOLUTION NO. 5916

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF CHANDLER, ARIZONA, APPROVING AN AMENDMENT NO. 2 TO THE INTERGOVERNMENTAL AGREEMENT DATED JULY 1, 2023, BETWEEN THE CITY OF CHANDLER AND THE ARIZONA BOARD OF REGENTS FOR AND ON BEHALF OF ARIZONA STATE UNIVERSITY FOR THE DELIVERY OF BUSINESS INCUBATOR AND ECOSYSTEM BUILDING SERVICES.

WHEREAS, the City of Chandler ("City") leases to the Arizona Board of Regents, for and on behalf of Arizona State University (together, "ASU"), the ASU Chandler Innovation Center ("ACIC") located at 249 East Chicago Street, in Chandler, Arizona, pursuant to a Lease Agreement between the City and ASU dated May 28, 2013; and

WHEREAS, the City and ASU entered into an Intergovernmental Agreement dated July 1, 2023, for the delivery of business incubator and ecosystem building services by ASU at the ACIC for an amount not to exceed $275,000 annually; and

WHEREAS, the term of the Intergovernmental Agreement was July 1, 2023, through June 30, 2024, with the option of up to four one-year extensions; and

WHEREAS, on July 2, 2024, the City and ASU entered into Amendment No. 1 to the Intergovernmental Agreement whereby they agreed to exercise the first option to extend its term through June 30, 2025; and

WHEREAS, the City and ASU wish to amend the Intergovernmental Agreement to (i) exercise the second and third options to extend the term of the Agreement for two additional years through June 30, 2027, and (ii) update the scope of services and performance measures, as more fully described in the attached Amendment No. 2.

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Chandler, Arizona, as follows:

Section 1. Approving Amendment No. 2 to the Intergovernmental Agreement between the City of Chandler and the Arizona Board of Regents on behalf of Arizona State University for the delivery of business incubator and ecosystem building services in substantially the form attached hereto as Exhibit "A".

Section 2. Authorizing the Mayor to sign and execute Amendment No. 2 on behalf of the City of Chandler.

PASSED AND ADOPTED by the City Council of the City of Chandler, Arizona, this ____ day of June, 2025.

ATTEST:

_____ _____
CITY CLERK MAYOR

CERTIFICATION

I HEREBY CERTIFY that the above and foregoing Resolution No. 5916 was duly passed and adopted by the City Council of the City of Chandler, Arizona, at a regular meeting held on the ____ day of June, 2025 and that a quorum was present thereat.

_____
CITY CLERK

APPROVED AS TO FORM:

_____
CITY ATTORNEY

City Clerk Document No. _____

City Council Meeting Date:_____

AMENDMENT NO. 2 TO INTERGOVERNMENTAL AGREEMENT
BETWEEN
CITY OF CHANDLER, ARIZONA
AND
ARIZONA BOARD OF REGENTS FOR AND ON BEHALF OF ARIZONA STATE UNIVERSITY
FOR
DELIVERY OF INCUBATOR AND ECOSYSTEM BUILDING SERVICES

THIS AMENDMENT NO. 2 ("Amendment") is entered into _____, 2025 ("Effective Date), by and between the City of Chandler, an Arizona municipal corporation ("City"), and the Arizona Board of Regents, a body corporate, for and on behalf of Arizona State University ("ASU"). The City and ASU are sometimes jointly referred to as the "Parties" and individually as a "Party."

RECITALS

WHEREAS, effective July 1, 2023, the Parties entered into an intergovernmental agreement for the provision of incubator and ecosystem building services ("Agreement"); and

WHEREAS, the term of the Agreement was July 1, 2023, through June 30, 2024, with the option of up to four one-year extensions; and

WHEREAS, on July 2, 2024, the Parties entered into Amendment No. 1 to the Agreement, which extended the term of the Agreement to June 30, 2025; and

WHEREAS, the Parties wish to exercise the second and third options through this Amendment to extend the Agreement for two years.

AGREEMENT

NOW THEREFORE, the Parties agree to amend the Agreement as follows:

1. The recitals are accurate and are incorporated and made a part of the Agreement by this reference.

2. Extend the term of the Agreement for two additional one-year terms: from July 1, 2025, through through June 30, 2027.

3. Amend Exhibit A, Scope of Services: ASU shall provide the services as set forth in the Scope of Services attached hereto as Amended Exhibit A and incorporated herein by reference.

4. Amend Exhibit B, Fee Schedule: ASU's compensation and fees shall be as more fully described in the Amended Exhibit B attached hereto and incorporated herein by reference.

5. Amend Exhibit C, Performance Measures: Specific performance targets are attached hereto as Amended Exhibit C (Performance Measures) and incorporated herein by reference and shall be used to evaluate and report progress on ASU's performance of the Scope of Services.

6. All other terms and conditions of the Agreement remain unchanged and in full force and effect. If a conflict or ambiguity arises between this Amendment and the Agreement, the terms and conditions in this Amendment prevail and control.

IN WITNESS WHEREOF, the Parties have entered into this Amendment on the Effective Date.

CITY OF CHANDLER

By: _____

Its: _____

ARIZONA BOARD OF REGENTS FOR AND ON BEHALF OF ARIZONA STATE UNIVERSITY

By: _____
Kristy Macdonald

Its: Associate Director, Research Operations

APPROVED AS TO FORM:

By: _____
City Attorney

APPROVED AS TO FORM:

By: _____
Office of General Counsel,
Arizona State University

ATTEST:

By: _____
City Clerk

AMENDED EXHIBIT A
SCOPE OF SERVICES

ASU will develop a program and a method of delivering incubator and ecosystem-building services. ASU Edson E+I activities and deliverables include:

Facility Management

- Maintain office space at the ASU Chandler Innovation Center to provide a location for business incubation/acceleration and co-working activities.
- Provide access to a co-working area for companies and individual entrepreneurs that offers space and access to standard office resources, such as high-speed internet, copy machines, video conference infrastructure, and printers.
- Provide staff to manage the facility and tenants during the hours of 9:00 a.m. to 5:00 p.m., Monday through Friday, except on designated University holidays.
- Track client usage and requests to ensure onsite staffing and program hours meet client needs.
- Implement an application and escalation process for ventures that wish to become a Local Entrepreneur in Residence.

Client Recruitment & Development

- Recruit technology-enabled ventures into the Chandler Endeavor entrepreneurial ecosystem.
- Implement an onboarding process with screening for clustered support tracks.
- Manage client onboarding, including execution of agreements and communication of program rules and requirements, for both resident and non-resident clients.
- Provide regular venture development support, to be delivered by ASU staff and mentors.
- Develop custom venture incubation programming that aligns with local needs and strengths through Chandler Endeavor.
- Assess clients' growth and advancement through programming.
- Analyze program timing and delivery methods to determine client interest levels and value.
- Encourage long-term engagement in the ecosystem and leadership in future development.
- Encourage clients to remain in Chandler after program participation and scaling. ASU Edson E+I will work collaboratively with the City's Economic Development Division to establish a process to retain clients in the community.

Events: ASU Edson E+I is expected to host entrepreneurial programming and events, including:

- Outreach events for clients, mentors, community members, and investors.
- Monthly connectivity events with diverse learning modalities.
- Founder meet-ups to encourage peer-to-peer learning and accountability.
- Large ecosystem-wide community convening.

Entrepreneurial Ecosystem Building

- Recruit targeted industry mentors and technical support providers who will commit time to support Chandler Endeavor ventures.
- Work with ventures to create an engagement strategy to advance their individual venture while providing leadership and support to other community founders.
- Develop partnerships (Arizona State University, University of Arizona, Maricopa SBDC, Chandler Chamber of Commerce, Arizona Tech Investors, Arizona Founders Fund, and other groups) to support client recruitment and enhance delivery of programs, services and events.
- Work with university-wide resources to provide access to specialty equipment, researchers, student support and internship opportunities.

Strategic Plan & Marketing Activities

- Outline recommendations for the further development of the Chandler entrepreneurial ecosystem based on a comprehensive ecosystem assessment. Strategy and future iterations of the program will align with the findings of the assessment and serve as a guidepost for other partners engaging in the ecosystem.
- Maintain a dedicated program webpage with information on business incubation/acceleration services, co-working services, events, news, and how to become a client.
- Promote the program on social media.
- Engage at local, regional and global events that promote Chandler Endeavor and the City of Chandler as a leader in innovative entrepreneurial ecosystem building support.
- Ensure all marketing materials created for the program clearly communicate that it is sponsored by the City of Chandler.

Reporting: ASU Edson E+I is expected to provide the following reports to the City's Economic Development Division:

- Quarterly reports on program milestones, traction, lessons learned, success stories, and the established performance measures shown in Exhibit C of this agreement.
- An annual report on how the program has helped ventures raise capital, generate revenue, and create job opportunities (employment, internships, contractors).
- Ongoing tracking and annual reporting on founder backgrounds and venture types to assess the effectiveness of the hyper-inclusive innovation incubation model, ensuring it reflects the Chandler community with access to entrepreneurial support. Execution of a connectivity survey every two years that measures the overall advancement of the connectivity of the ecosystem.

AMENDED EXHIBIT B
FEE SCHEDULE

The fee below is inclusive of all costs associated with performance of services described in the Scope of Work.

Incubator and Ecosystem-Building Management Services	**$22,916.67 per month, inclusive**

AMENDED EXHIBIT C
PERFORMANCE MEASURES

The performance targets below shall be used to evaluate and report progress on ASU's performance of services described in the Scope of Work:

Annual Performance Measure	**Fiscal Year Targets**
Total people engaged in the Chandler Endeavor ecosystem (unique innovators engaged in events, email signups, one on one wayfinding assessments, collaboration co-working space users)	1000
Total new people engaged in the Chandler Endeavor ecosystem *(first-time unique innovators engaged in events, email signups, one-on-one wayfinding assessments, or use of co-working/collaboration space during the contract year).*	200
Ventures engaged in Cluster Cohorts (in-depth mentoring, founder accountability meetings and industry-specific resources in cohort tracks) • Fall – 6 • Spring – 6	12 The specific names of ventures to be listed per cohort.
Total number of Local Entrepreneurs in Residence	6
Average Net Promoter Score for all ASU Edson E+I-initiated programming[1]	60%
Chandler ecosystem Connectivity Score[2]	Increase in score compared to the baseline 137.9 established in the first contract year.
Percentage of ventures that improve their Funding Readiness Score.[3]	Increase in the percentage of ventures that improve their readiness score
Venture Challenge pitch competition/funding events hosted	2

1. Net Promoter Score is a customer satisfaction metric to measure the quality of an experience for an individual based on a single survey question asking participants to rate the likelihood that they would recommend the program to a friend or colleague. A score of 100% indicates that all participants surveyed would enthusiastically promote the program. Industry average for educational training is 60%.

2. The Connectivity Score is a metric used to assess the strength and density of entrepreneurial networks within a community. It is obtained through an survey every two years that measures how many entrepreneurs individuals can identify or know within their community. The survey is distributed widely in the Chandler community to establish a baseline score.

   The objective would be to see an increase in the overall Connectivity Score each year, which serves as an indicator of the broader impact of a program or initiative on the community. The underlying premise is based on ecosystem building theory, which suggests that communities with robust networks of entrepreneurs are more resilient and capable of fostering a diverse range of successful ventures. This, in turn, leads to a higher quality of life and sustainable economic impact over time.

   For instance, a Connectivity Score of 9.4 would indicate that, on average, entrepreneurs in the broader community are acquainted with or have connections to nine other entrepreneurs. This score demonstrates a relatively low entrepreneurial network within the community. By actively working to increase this score, the aim is to enhance collaboration, knowledge sharing, and support among entrepreneurs, thereby promoting economic growth and community development.

3. Funding readiness frameworks are used to help ventures better understand the different elements investors evaluate when determining whether to invest. They inform a venture's financing strategy, identifying at what stage of development different funding is ideal. The VIRAL framework created by Village Capital is one example that has been beta-tested. ASU is creating a custom framework with language that is more accessible and can be easily applied to different industries. The survey will determine a baseline of funding readiness at the start of a venture's participation in Chandler Endeavor and the venture will be reassessed as it progresses through the program. The framework will assign a score of 1 – 3 with 3 being most ready for higher stages of funding.

Meeting Minutes
City Council Economic Vitality Subcommittee Meeting

May 12, 2025 | 8:00 a.m.
City Hall 5th Floor Large Conference Room
175 S. Arizona Ave., Chandler, AZ

Call to Order
The meeting was called to order at 8:11 a.m.

Roll Call

Subcommittee Attendance
Vice Mayor Christine Ellis
Councilmember Angel Encinas
Councilmember OD Harris

Staff Attendance
Joshua Wright, City Manager
Micah Miranda, Economic Development
Chelsey Faggiano, Economic Development
Michael Winer, Economic Development
Alexis Apodaca, Mayor and Council Office

Guest Attendance
Dawn Castle, ASU
Kristin Irwin, ASU
Robert Jewett, ASU
Brett Kennedy, ASU
Abigail Murray, ASU
Kristin Slice, ASU
Carly Wakefield, Chandler Chamber

Discussion

1. Presentation and Discussion of Arizona State University (ASU) Office of Government and Community Engagement, ASU Chandler Innovation Center (ACIC) and the Chandler Endeavor Program.

MICAH MIRANDA, Economic Development Director, introduced the group and said the purpose of the meeting was to provide City Council with an update on the exciting activities happening with Arizona State University (ASU) here in Chandler.

KRISTIN IRWIN, Associate Vice President of ASU Government Community Engagement, began the meeting by providing an overview of how ASU stays ahead of the curve in higher education and how the university serves as an economic engine for the local, regional, and global communities it has a presence in.

IRWIN continued by outlining ASU's mission of building a strong talent pipeline, stating that over 21,000 students are set to earn degrees this spring, and that the university is focused on continuing to collaborate with industry stakeholders to ensure graduates are highly employable. She outlined specific university partnerships and recent funding awards that help ASU contribute ecosystem growth across all sectors.

BRETT KENNEDY, Assistant Director of Operations at ACIC, then provided an overview of the facility and programming that has occurred onsite since its reactivation in March 2023.

COUNCILMEMBER ENCINAS asked what specific ASU courses are offered onsite.

KENNEDY responded, saying the fabrication shop supports multiple classes, including a robotics class and a sculpture class. He also mentioned a certified public manager program that uses classroom space, and said several other ASU classes utilized space at ACIC throughout the last semester.

COUNCILMEMBER ELLIS asked where students travel from to get to ACIC.

KENNEDY responded, saying most of the students travel from Tempe's main campus and that about 10 percent travel from ASU's Polytechnic Campus.

KRISTIN SLICE, Director of Community Entrepreneurship for Edson E+I, then provided an overview of how the city and ASU have partnered to create Chandler Endeavor, an incubation program designed to be open and accessible to all entrepreneurs in the community, regardless of their company's industry or stage. The program emphasizes empowering entrepreneurs with evidence-based tools and community support.

Key highlights include:

- The program engaged 1,275 people in the first year, with the number growing to 1,393 in the second year, exceeding initial goals.
- The initiative focuses on high engagement and retention, with 295 repeat participants.
- Over 360 co-working space users and nine dedicated space users are part of the program, with efforts to cultivate mentorship and local leadership through an "entrepreneur in residence."
- Chandler Endeavor has raised $37,000 in seed funding donations to support local startups.
- The model avoids traditional barriers, offering continuous engagement and accessible resources to founders through open cohorts, monthly forums, and an online community.
- The program also promotes inclusion, excellence, and the development of networks, with Chandler gaining recognition as a regional leader in innovation.
- Looking ahead, there is a focus on expanding internships and developing Chandler as a magnet for innovation, further engaging with national partners and enhancing the local startup ecosystem.

SLICE continued by stating the program's success is evident through its high retention rate, community involvement, and impressive funding milestones. She concluded by outlining the ongoing efforts to foster

program growth, and sharing a quote from one of the entrepreneurs involved, emphasizing Chandler Endeavor's role as a "lifeline" for entrepreneurs navigating a rapidly changing world.

COUNCILMEMBER ELLIS asked the group where they see this continued partnership between the City of Chandler and ASU going in the future and what is needed from the City of Chandler to keep it flourishing.

SLICE responded, saying that what ASU needs right now are advocates—people who truly understand the unique approach they are taking and can clearly communicate why it matters. Additionally, she mentioned continued support for entrepreneurship at this moment—not just for individual businesses, but to build sustainable, de-risked resources that empower people throughout their journey.

COUNCILMEMBER ELLIS asked how the ASU team would redefine “innovation” as it relates to the work being done at ACIC.

IRWIN responded, saying ASU is at a pivotal moment where innovation touches everything—education, healthcare, business, and beyond. She continued saying that Chandler and ASU have both led by example, and now is the time to be thinking of how to stay ahead of the curve. She stated that ACIC can be a central hub for this evolving partnership and the key is maintaining a shared willingness to think boldly, take risks, and pioneer new solutions to lead and thrive across many sectors, together.

COUNCILMEMBER ENCINAS asked how outreach is being conducted to get founders involved and how many of the founders participating in the Chandler Endeavor program have already gone through a similar program.

SLICE responded, saying they want founders to take advantage of every resource available to them, because entrepreneurship is so big, there are so many challenges, and there are also so many opportunities. As for finding founders, they utilize traditional channels/media like ASU News, but rely on referrals, word of mouth, and grassroot marketing efforts.

COUNCILMEMBER ENCINAS asked how the team stays in touch with founders to be a continued resource.

SLICE responded, saying ASU is focused on growing alongside engaged entrepreneurs while continuously improving their data and ability to garner feedback to create resources that meet today’s challenges.

COUNCILMEMBER ENCINAS asked what efforts can be made to increase ACIC usage among ASU students, either through classes or events.

ABIGAL MURRAY, ACIC Operations Manager, responded, saying most of the ASU student usage comes from the fabrication shop; however, they do have over nine different student organizations utilizing the facility and partner on several ASU led events. She then talked about programming and workshops that are occurring at the K-12 level in collaboration with Chandler Unified School District.

SLICE added that about 20 to 30% of the participants in Chandler Endeavor programs are ASU students.

IRWIN said the university is evaluating additional programs that could be moved to ACIC.

COUNCILMEMBER HARRIS thanked ASU for what they have accomplished thus far. He then asked the group if they could look at utilizing ACIC to host programs and workshops to further career development in skilled trades.

MIRANDA responded, saying he will coordinate discussions on programming that can be hosted to meet this request.

MIRANDA inquired about ASU's transportation investment in transporting students to the ACIC facility.

DAWN CASTLE, Executive Director, responded, saying their anticipated spending in fiscal year 2025 is approximately $50,000.

COUNCILMEMBER ELLIS inquired about whether Chandler Flex could be a solution for ASU students needing transportation and asked Miranda to further explore.

COUNCILMEMBER HARRIS stated he is interested in looking into increasing the city's funding contribution for the Chandler Endeavor / ACIC partnership and asked staff to draft a proposal outlining opportunities for City Council consideration.

MIRANDA stated he will work with ASU and the City Manager's Office to brainstorm ideas on additional programmatic funding that could be presented to Chandler City Council and noted that while funding is crucial, stability in funding is important too.

The consensus of the council subcommittee was to continue supporting the program and to review the program and funding recommendations before presenting an amended proposal for City Council consideration.

Adjourn

The meeting was adjourned at 9:15 a.m.

Recording Secretary

CHANDLER arizona
Community of Innovation

City Council Memorandum Information Technology Memo No. N/A

Date: June 12, 2025
To: Mayor and Council
Thru: Joshua H. Wright, City Manager
Dawn Lang, Deputy City Manager - CFO
Sandip Dholakia, Chief Information Officer
From: Lisa Lapp, Chief Applications Officer
Subject: Agreement No. 4904, for Applications Managed Support Services

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Proposed Motion:

Move City Council approve Agreement No. 4904, with Parsus Solutions, LLC, for applications managed support services, in an amount not to exceed $860,000, for the period of one year, beginning June 15, 2025, through June 14, 2026.

Background/Discussion:

In 2019, the Management Services Department, Tax and License Division, introduced an online customer portal to automate and enhance the experience of doing business with the City of Chandler. This online portal allows customers to register their business, initiate a liquor license or special event liquor license application, and apply for specialty licenses (e.g. massage, peddler, secondhand dealer, short-term rental, etc.), as well as renew, pay, and print business registrations without the need to visit City Hall. The city is seeking a continuation of vendor-managed support services for providing citizen enhancements and ongoing application support and maintenance of this portal, as well as the critical Tax and License systems (the licensing portal and the tax and licensing software suite) which help manage the tax and licensing data and revenues received from the State of Arizona.

In addition, the city is seeking vendor-managed support services for the current custom-built Solid Waste Management System (RMS) which is used by the Public Works & Utilities Department to provide residents with solid waste and recycling services as well as integrations with Waste Management corporation per the city's

contract. The city is looking for both general support and development in rewriting sections of the program to better meet software coding and security standards.

Evaluation:

In 2019, Parsus Solutions, LLC, developed the business registration and specialty license web portal. Parsus has provided ongoing support and development services for the portal, as well as the Tax and License system, which helps to manage the tax licensing data and revenues that flow from the State. Parsus Solutions also has the unique skill sets needed to provide support and development for the Solid Waste Management System (RMS) and has been very effective in continuing to support/enhance the business registration portal. Parsus Solutions is uniquely qualified to provide managed support services for city applications and staff recommends their direct selection. The agreement term is June 15, 2025, through June 14, 2026, with the option of up to four one-year extensions.

Financial Implications:

Funding for this agreement is contingent upon City Council adopting the FY 2025-26 budget.

Fiscal Impact

Account No.	Fund Name	Program Name	Dollar Amount	CIP Funded Y/N
101.1200.5418.0.0.0	General Fund	N/A	$860,000	N

Attachments

4904 Agreement

Docusign Envelope ID: D071F348-3E09-4183-91B4-02B3EE3B3DC4

City Clerk Document No. _____

City Council Meeting Date: June 12, 2025

CITY OF CHANDLER SERVICES AGREEMENT
APPLICATIONS MANAGED SUPPORT SERVICES
CITY OF CHANDLER AGREEMENT NO. 4904

THIS AGREEMENT (Agreement) is made and entered into by and between the City of Chandler, an Arizona municipal corporation (City), and Parsus Solutions, LLC, an Arizona limited liability corporation (Contractor), (City and Contractor may individually be referred to as Party and collectively referred to as Parties) and made _____ , 2025 (Effective Date).

RECITALS

A. City proposes to purchase managed support services for applications as more fully described in Exhibit A, which is attached to and made a part of this Agreement by this reference.

B. Contractor is ready, willing, and able to provide the services described in Exhibit A for the compensation and fees set forth and as described in Exhibit B, which is attached to and made a part of this Agreement by this reference.

C. City desires to contract with the Contractor to provide these services under the terms and conditions set forth in this Agreement.

AGREEMENT

NOW, THEREFORE, in consideration of the premises and the mutual promises contained in this Agreement, City and Contractor agree as follows:

SECTION I: DEFINITIONS

For purposes of this Agreement, the following definitions apply:
Agreement means the legal agreement executed between the City and the Contractor
City means the City of Chandler, Arizona
Contractor means the individual, partnership, or corporation named in the Agreement
Days means calendar days
May, Should means something that is not mandatory but permissible
Shall, Will, Must means a mandatory requirement

SECTION II: CONTRACTOR'S SERVICES

Contractor must perform the services described in Exhibit A to the City's satisfaction within the terms and conditions of this Agreement and within the care and skill that a person who provides

Docusign Envelope ID: D071F348-3E09-4183-91B4-02B3EE3B3DC4

similar services in Chandler, Arizona exercises under similar conditions. All work or services furnished by Contractor under this Agreement must be performed in a skilled and workmanlike manner. Unless authorized by the City in writing, all fixtures, furnishings, and equipment furnished by Contractor as part of the work or services under this Agreement must be new, or the latest model, and of the most suitable grade and quality for the intended purpose of the work or service.

SECTION III: PERIOD OF SERVICE

Contractor must perform the services described in Exhibit A for the term of this Agreement.

The term of the Agreement is one year, and begins on June 15, 2025, and ends on June 14, 2026, unless sooner terminated in accordance with the provisions of this Agreement. The City and the Contractor may mutually agree to extend the Agreement for up to four additional terms of one year each, or portions thereof. The City reserves the right, at its sole discretion, to extend the Agreement for up to 60 days beyond the expiration of any extension term.

SECTION lV: PAYMENT OF COMPENSATION AND FEES

4.1 Unless amended in writing by the Parties, Contractor's compensation and fees as more fully described in Exhibit B for performance of the services approved and accepted by the City under this Agreement must not exceed $860,000. Contractor must submit requests for payment for services approved and accepted during the previous billing period and must include, as applicable, detailed invoices and receipts, a narrative description of the tasks accomplished during the billing period, a list of any deliverables submitted, and any subcontractor's or supplier's actual requests for payment plus similar narrative and listing of their work. Payment for those services negotiated as a lump sum will be made in accordance with the percentage of the work completed during the preceding billing period. Services negotiated as a not-to-exceed fee will be paid in accordance with the work completed on the service during the preceding month. All requests for payment must be submitted to the City for review and approval. The City will make payment for approved and accepted services within 30 days of the City's receipt of the request for payment.

4.2 Applicable Taxes. The Contractor will pay all applicable taxes. The City is subject to all applicable state and local transaction privilege taxes. To the extent any state and local transaction privilege taxes apply to sales made under the terms of this Agreement, it is the responsibility of the Contractor to collect and remit all applicable taxes to the proper taxing jurisdiction of authority.

4.3 Tax Indemnification. The Contractor and all subcontractors will pay all Federal, state, and local taxes applicable to its operation and any persons employed by the Contractor. The Contractor will and require all subcontractors to hold the City harmless from any responsibility for taxes, damages, and interest, if applicable, contributions required under Federal, state, and local laws and regulations and any other costs including transaction privilege taxes, unemployment compensation insurance, Social Security, and Worker's Compensation.

4.4 All prices offered herein shall be firm against any increase for the initial term of the Agreement. Prior to commencement of subsequent renewal terms, the City may approve a fully documented request for a price adjustment. The City shall determine whether any requested price increases for extension terms is acceptable to the City. If the City approves the price increase, the price shall remain firm for the renewal term for which it was requested. If a price increase is agreed upon by

Docusign Envelope ID: D071F348-3E09-4183-91B4-02B3EE3B3DC4

SECTION V: GENERAL CONDITIONS

5.1 Records/Audit. Records of the Contractor's direct personnel payroll, reimbursable expenses pertaining to this Agreement and records of accounts between the City and Contractor must be kept on the basis of generally accepted accounting principles and must be made available to the City and its auditors for up to three years following the City's final acceptance of the services under this Agreement. The City, its authorized representative, or any federal agency, reserves the right to audit Contractor's records to verify the accuracy and appropriateness of all cost and pricing data, including data used to negotiate this Agreement and any amendments. The City reserves the right to decrease the total amount of Agreement price or payments made under this Agreement or request reimbursement from the Contractor following final contract payment on this Agreement if, upon audit of the Contractor's records, the audit discloses the Contractor has provided false, misleading, or inaccurate cost and pricing data. The Contractor will include a similar provision in all of its contracts with subcontractors providing services under the Agreement Documents to ensure that the City, its authorized representative, or the appropriate federal agency, has access to the subcontractors' records to verify the accuracy of all cost and pricing data. The City reserves the right to decrease Contract price or payments made on this Agreement or request reimbursement from the Contractor following final payment on this Agreement if the above provision is not included in subcontractor agreements, and one or more subcontractors refuse to allow the City to audit their records to verify the accuracy and appropriateness of all cost and pricing data. If, following an audit of this Agreement, the audit discloses the Contractor has provided false, misleading, or inaccurate cost and pricing data, and the cost discrepancies exceed 1% of the total Agreement billings, the Contractor will be liable for reimbursement of the reasonable, actual cost of the audit.

5.2 Alteration in Character of Work. Whenever an alteration in the character of work results in a substantial change in this Agreement, thereby materially increasing or decreasing the scope of services, cost of performance, or Project schedule, the work will be performed as directed by the City. However, before any modified work is started, a written amendment must be approved and executed by the City and the Contractor. Such amendment must not be effective until approved by the City. Additions to, modifications, or deletions from this Agreement as provided herein may be made, and the compensation to be paid to the Contractor may accordingly be adjusted by mutual agreement of the Parties. It is distinctly understood and agreed that no claim for extra work done or materials furnished by the Contractor will be allowed by the City except as provided herein, nor must the Contractor do any work or furnish any materials not covered by this Agreement unless such work is first authorized in writing. Any such work or materials furnished by the Contractor without prior written authorization will be at Contractor's own risk, cost, and expense, and Contractor hereby agrees that without written authorization Contractor will make no claim for compensation for such work or materials furnished.

5.3 Termination for Convenience. The City and the Contractor hereby agree to the full performance of the covenants contained herein, except that the City reserves the right, at its discretion and without cause, to terminate or abandon any service provided for in this Agreement, or abandon any portion of the Project for which services have been performed by the Contractor. In the event the City abandons or suspends the services, or any part of the services as provided in this Agreement, the City will notify the Contractor in writing and immediately after receiving such notice, the Contractor must discontinue advancing the work specified under this Agreement. Upon such termination, abandonment, or suspension, the

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Contractor must deliver to the City all drawings, plans, specifications, special provisions, estimates and other work entirely or partially completed, together with all unused materials supplied by the City. The Contractor must appraise the work Contractor has completed and submit Contractor's appraisal to the City for evaluation. The City may inspect the Contractor's work to appraise the work completed. The Contractor will receive compensation in full for services performed to the date of such termination. The fee shall be paid in accordance with Section IV of this Agreement, and as mutually agreed upon by the Contractor and the City. If there is no mutual agreement on payment, the final determination will be made in accordance with the Disputes provision in this Agreement. However, in no event may the payment exceed the payment set forth in this Agreement nor as amended in accordance with Alteration in Character of Work. The City will make the final payment within 60 days after the Contractor has delivered the last of the partially completed items and the Parties agree on the final payment. If the City is found to have improperly terminated the Agreement for cause or default, the termination will be converted to a termination for convenience in accordance with the provisions of this Agreement.

5.4 Termination for Cause. The City may terminate this Agreement for Cause upon the occurrence of any one or more of the following events: in the event that (a) the Contractor fails to perform pursuant to the terms of this Agreement, (b) the Contractor is adjudged a bankrupt or insolvent, (c) the Contractor makes a general assignment for the benefit of creditors, (d) a trustee or receiver is appointed for Contractor or for any of Contractor’s property (e) the Contractor files a petition to take advantage of any debtor's act, or to reorganize under the bankruptcy or similar laws, (f) the Contractor disregards laws, ordinances, rules, regulations or orders of any public body having jurisdiction, or (g) the Contractor fails to cure default within the time requested. Where Agreement has been so terminated by City, the termination will not affect any rights of City against Contractor then existing or which may thereafter accrue.

5.5 Indemnification. The Contractor (Indemnitor) must indemnify, defend, save and hold harmless the City and its officers, officials, agents and employees (Indemnitee) from any and all claims, actions, liabilities, damages, losses or expenses (including court costs, attorneys' fees and costs of claim processing, investigation and litigation) (Claims) caused or alleged to be caused, in whole or in part, by the wrongful, negligent or willful acts, or errors or omissions of the Contractor or any of its owners, officers, directors, agents, employees, or subcontractors in connection with this Agreement. This indemnity includes any claim or amount arising out of or recovered under workers' compensation law or on account of the failure of the Contractor to conform to any federal, state or local law, statute, ordinance, rule, regulation or court decree. The Contractor must indemnify Indemnitee from and against any and all Claims, except those arising solely from Indemnitee's own negligent or willful acts or omissions. The Contractor is responsible for primary loss investigation, defense and judgment costs where this indemnification applies. In consideration of the award of this Agreement, the Contractor agrees to waive all rights of subrogation against Indemnitee for losses arising from or related to this Agreement. The obligations of the Contractor under this provision survive the termination or expiration of this Agreement.

5.6 Insurance Requirements. Contractor must procure insurance under the terms and conditions and for the amounts of coverage set forth in Exhibit C against claims that may arise from or relate to performance of the work under this Agreement by Contractor and its agents, representatives, employees, and subcontractors. Contractor and any subcontractors must maintain this insurance until all of their obligations have been discharged, including any

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warranty periods under this Agreement. These insurance requirements are minimum requirements for this Agreement and in no way limit the indemnity covenants contained in this Agreement. The City in no way warrants that the minimum limits stated in Exhibit C are sufficient to protect the Contractor from liabilities that might arise out of the performance of the work under this Agreement by the Contractor, the Contractor's agents, representatives, employees, or subcontractors. Contractor is free to purchase such additional insurance as may be determined necessary.

5.7 Cooperation and Further Documentation. The Contractor agrees to provide the City such other duly executed documents as may be reasonably requested by the City to implement the intent of this Agreement.

5.8 Notices. Unless otherwise provided, notice under this Agreement must be in writing and will be deemed to have been duly given and received either (a) on the date of service if personally served on the party to whom notice is to be given, or (b) on the date notice is sent if by electronic mail, or (c) on the third day after the date of the postmark of deposit by first class United States mail, registered or certified, postage prepaid and properly addressed as follows:

For the City	**For the Contractor**
Name: Christina Pryor	Name: G. Parekh
Title: Procurement and Supply Senior Manager	Title: Partner, Parsus Solutions, LLC
Address: 175 S. Arizona Ave., 3rd Floor	Address: 14632 N. Frank Lloyd Wright, #1240
Chandler, AZ 85225	Scottsdale, AZ 85260
Phone: 480-782-2403	Phone: 480-614-9000
Email: christina.pryor@chandleraz.gov	Email: g.parekh@parsus.com

5.9 Successors and Assigns. City and Contractor each bind itself, its partners, successors, assigns, and legal representatives to the other party to this Agreement and to the partners, successors, assigns, and legal representatives of such other party in respect to all covenants of this Agreement. Neither the City nor the Contractor may assign, sublet, or transfer its interest in this Agreement without the written consent of the other party. In no event may any contractual relation be created between any third party and the City.

5.10 Disputes. In any dispute arising out of an interpretation of this Agreement or the duties required not disposed of by agreement between the Contractor and the City, the final determination at the administrative level will be made by the City Purchasing and Materials Manager.

5.11 Completeness and Accuracy of Contractor's Work. The Contractor must be responsible for the completeness and accuracy of Contractor's services, data, and other work prepared or compiled under Contractor's obligation under this Agreement and must correct, at Contractor's expense, all willful or negligent errors, omissions, or acts that may be discovered. The fact that the City has accepted or approved the Contractor's work will in no way relieve the Contractor of any of Contractor's responsibilities.

5.12 Withholding Payment. The City reserves the right to withhold funds from the Contractor's payments up to the amount equal to the claims the City may have against the Contractor until such time that a settlement on those claims has been reached.

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5.13 City's Right of Cancellation. The Parties acknowledge that this Agreement is subject to cancellation by the City under the provisions of Section 38-511, Arizona Revised Statutes (A.R.S.).

5.14 Independent Contractor. For this Agreement the Contractor constitutes an independent contractor. Any provisions in this Agreement that may appear to give the City the right to direct the Contractor as to the details of accomplishing the work or to exercise a measure of control over the work means that the Contractor must follow the wishes of the City as to the results of the work only. These results must comply with all applicable laws and ordinances.

5.15 Project Staffing. Prior to the start of any work under this Agreement, the Contractor must assign to the City the key personnel that will be involved in performing services prescribed in the Agreement. The City may acknowledge its acceptance of such personnel to perform services under this Agreement. At any time hereafter that the Contractor desires to change key personnel while performing under the Agreement, the Contractor must submit the qualifications of the new personnel to the City for prior approval. The Contractor will maintain an adequate and competent staff of qualified persons, as may be determined by the City, throughout the performance of this Agreement to ensure acceptable and timely completion of the Scope of Services. If the City objects, with reasonable cause, to any of the Contractor's staff, the Contractor must take prompt corrective action acceptable to the City and, if required, remove such personnel from the Project and replace with new personnel agreed to by the City.

5.16 Subcontractors. Prior to beginning the work, the Contractor must furnish the City for approval the names of subcontractors to be used under this Agreement. Any subsequent changes are subject to the City’s written prior approval.

5.17 Force Majeure. If either party is delayed or prevented from the performance of any act required under this Agreement by reason of acts of God or other cause beyond the control and without fault of the Party (financial inability excepted), performance of that act may be excused, but only for the period of the delay, if the Party provides written notice to the other Party within ten days of such act. The time for performance of the act may be extended for a period equivalent to the period of delay from the date written notice is received by the other Party.

5.18 Compliance with Laws. Contractor understands, acknowledges, and agrees to comply with the Americans with Disabilities Act, the Immigration Reform and Control Act of 1986 and the Drug Free Workplace Act of 1989. All services performed by Contractor must also comply with all applicable City of Chandler codes, ordinances, and requirements. Contractor agrees to permit the City to verify Contractor’s compliance.

5.19 No Israel Boycott. By entering into this Agreement, Contractor certifies that Contractor is not currently engaged in, and agrees for the duration of the Agreement, not to engage in a boycott of Israel as defined by state statute.

5.20 Legal Worker Requirements. A.R.S. § 41-4401 prohibits the City from awarding a contract to any contractor who fails, or whose subcontractors fail, to comply with A.R.S. § 23-214(A). Therefore, Contractor agrees Contractor and each subcontractor it uses warrants their compliance with all federal immigration laws and regulations that relate to their employees

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and their compliance with§ 23-214, subsection A. A breach of this warranty will be deemed a material breach of the Agreement and may be subject to penalties up to and including termination of the Agreement. City retains the legal right to inspect the papers of any Contractor's or subcontractor's employee who provides services under this Agreement to ensure that the Contractor and subcontractors comply with the warranty under this provision.

5.21 Lawful Presence Requirement. A.R.S. §§ 1-501 and 1-502 prohibit the City from awarding a contract to any natural person who cannot establish that such person is lawfully present in the United States. To establish lawful presence, a person must produce qualifying identification and sign a City-provided affidavit affirming that the identification provided is genuine. This requirement will be imposed at the time of contract award. This requirement does not apply to business organizations such as corporations, partnerships, or limited liability companies.

5.22 Forced Labor of Ethnic Uyghurs Prohibited. By entering into this Agreement, Contractor certifies and agrees Contractor does not currently use and will not use for the term of this Agreement: (i) the forced labor of ethnic Uyghurs in the People's Republic of China; or (ii) any goods or services produced by the forced labor of ethnic Uyghurs in the People's Republic of China; or (iii) any contractors, subcontractors or suppliers that use the forced labor or any goods or services produced by the forced labor of ethnic Uyghurs in the People's Republic of China.

5.23 Covenant Against Contingent Fees. Contractor warrants that no person has been employed or retained to solicit or secure this Agreement upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee, and that no member of the Chandler City Council, or any City employee has any interest, financially, or otherwise, in Contractor's firm. For breach or violation of this warrant, the City may annul this Agreement without liability or, at its discretion, to deduct from the Agreement price or consideration, the full amount of such commission, percentage, brokerage, or contingent fee.

5.24 Non-Waiver Provision. The failure of either Party to enforce any of the provisions of this Agreement or to require performance of the other Party of any of the provisions hereof must not be construed to be a waiver of such provisions, nor must it affect the validity of this Agreement or any part thereof, or the right of either Party to thereafter enforce each and every provision.

5.25 Disclosure of Information Adverse to the City's Interests. To evaluate and avoid potential conflicts of interest, the Contractor must provide written notice to the City, as set forth in this Section, of any work or services performed by the Contractor for third parties that may involve or be associated with any real property or personal property owned or leased by the City. Such notice must be given seven business days prior to commencement of the services by the Contractor for a third party, or seven business days prior to an adverse action as defined below. Written notice and disclosure must be sent to the City's Purchasing and Materials Manager. An adverse action under this Agreement includes, but is not limited to: (a) using data as defined in the Agreement acquired in connection with this Agreement to assist a third party in pursuing administrative or judicial action against the City; or (b) testifying or providing evidence on behalf of any person in connection with an administrative or judicial action against the City; or (c) using data to produce income for the Contractor or its employees independently of performing the services under this Agreement, without the prior written consent of the City. Contractor

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represents that except for those persons, entities, and projects identified to the City, the services performed by the Contractor under this Agreement are not expected to create an interest with any person, entity, or third-party project that is or may be adverse to the City's interests. Contractor's failure to provide a written notice and disclosure of the information as set forth in this Section constitute a material breach of this Agreement.

5.26 Data Confidentiality and Data Security. As used in the Agreement, data means all information, whether written or verbal, including plans, photographs, studies, investigations, audits, analyses, samples, reports, calculations, internal memos, meeting minutes, data field notes, work product, proposals, correspondence and any other similar documents or information prepared by, obtained by, or transmitted to the Contractor or its subcontractors in the performance of this Agreement. The Parties agree that all data, regardless of form, including originals, images, and reproductions, prepared by, obtained by, or transmitted to the Contractor or its subcontractors in connection with the Contractor's or its subcontractor's performance of this Agreement is confidential and proprietary information belonging to the City. Except as specifically provided in this Agreement, Contractor or its subcontractors must not divulge data to any third party without the City's prior written consent. Contractor or its subcontractors must not use the data for any purposes except to perform the services required under this Agreement. These prohibitions do not apply to the following data provided to the Contractor or its subcontractors have first given the required notice to the City: (a) data which was known to the Contractor or its subcontractors prior to its performance under this Agreement unless such data was acquired in connection with work performed for the City; or (b) data which was acquired by the Contractor or its subcontractors in its performance under this Agreement and which was disclosed to the Contractor or its subcontractors by a third party, who to the best of the Contractor's or its subcontractors knowledge and belief, had the legal right to make such disclosure and the Contractor or its subcontractors are not otherwise required to hold such data in confidence; or (c) data which is required to be disclosed by virtue of law, regulation, or court order, to which the Contractor or its subcontractors are subject. In the event the Contractor or its subcontractors are required or requested to disclose data to a third party, or any other information to which the Contractor or its subcontractors became privy as a result of any other contract with the City, the Contractor must first notify the City as set forth in this Section of the request or demand for the data. The Contractor or its subcontractors must give the City sufficient facts so that the City can be given an opportunity to first give its consent or take such action that the City may deem appropriate to protect such data or other information from disclosure. Unless prohibited by law, within ten calendar days after completion or termination of services under this Agreement, the Contractor or its subcontractors must promptly deliver, as set forth in this Section, a copy of all data to the City. All data must continue to be subject to the confidentiality agreements of this Agreement. Contractor or its subcontractors assume all liability to maintain the confidentiality of the data in its possession and agrees to compensate the City if any of the provisions of this Section are violated by the Contractor, its employees, agents or subcontractors. Solely for the purposes of seeking injunctive relief, it is agreed that a breach of this Section must be deemed to cause irreparable harm that justifies injunctive relief in court. Contractor agrees that the requirements of this Section must be incorporated into all subcontracts entered into by Contractor. A violation of this Section may result in immediate termination of this Agreement without notice.

5.27 Personal Identifying Information-Data Security. Personal identifying information, financial account information, or restricted City information, whether electronic format or hard copy, must be secured and protected at all times by Contractor and any of its subcontractors. At a

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minimum, Contractor must encrypt or password-protect electronic files. This includes data saved to laptop computers, computerized devices, or removable storage devices. When personal identifying information, financial account information, or restricted City information, regardless of its format, is no longer necessary, the information must be redacted or destroyed through appropriate and secure methods that ensure the information cannot be viewed, accessed, or reconstructed. In the event that data collected or obtained by Contractor or its subcontractors in connection with this Agreement is believed to have been compromised, Contractor or its subcontractors must immediately notify the City contact. Contractor agrees to reimburse the City for any costs incurred by the City to investigate potential breaches of this data and, where applicable, the cost of notifying individuals who may be impacted by the breach. Contractor agrees that the requirements of this Section must be incorporated into all subcontracts entered into by Contractor. It is further agreed that a violation of this Section must be deemed to cause irreparable harm that justifies injunctive relief in court. A violation of this Section may result in immediate termination of this Agreement without notice. The obligations of Contractor or its subcontractors under this Section must survive the termination of this Agreement.

5.28 Jurisdiction and Venue. This Agreement is made under and must be construed in accordance with and governed by the laws of the State of Arizona without regard to the conflicts or choice of law provisions thereof. Any action to enforce any provision of this Agreement or to obtain any remedy with respect hereto must be brought in the courts located in Maricopa County, Arizona, and for this purpose, each Party hereby expressly and irrevocably consents to the jurisdiction and venue of such court.

5.29 Survival. All warranties, representations, and indemnifications by the Contractor must survive the completion or termination of this Agreement.

5.30 Modification. Except as expressly provided herein to the contrary, no supplement, modification, or amendment of any term of this Agreement will be deemed binding or effective unless in writing and signed by the Parties.

5.31 Severability. If any provision of this Agreement or the application to any person or circumstance may be invalid, illegal or unenforceable to any extent, the remainder of this Agreement and the application will not be affected and will be enforceable to the fullest extent permitted by law.

5.32 Integration. This Agreement contains the full agreement of the Parties. Any prior or contemporaneous written or oral agreement between the Parties regarding the subject matter is merged and superseded.

5.33 Time is of the Essence. Time of each of the terms, covenants, and conditions of this Agreement is hereby expressly made of the essence.

5.34 Date of Performance. If the date of performance of any obligation or the last day of any time period provided for should fall on a Saturday, Sunday, or holiday for the City, the obligation will be due and owing, and the time period will expire, on the first day after which is not a Saturday, Sunday or legal City holiday. Except as may otherwise be set forth in this Agreement, any performance provided for herein will be timely made if completed no later

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than 5:00 p.m. (Chandler time) on the day of performance.

5.35 Delivery. All prices are F.O.B. Destination and include all delivery and unloading at the specified destinations. The Contractor will retain title and control of all goods until they are delivered and accepted by the City. All risk of transportation and all related charges will be the responsibility of the Contractor. All claims for visible or concealed damage will be filed by the Contractor. The City will notify the Contractor promptly of any damaged goods and will assist the Contractor in arranging for inspection.

5.36 Third Party Beneficiary. Nothing under this Agreement will be construed to give any rights or benefits in the Agreement to anyone other than the City and the Contractor, and all duties and responsibilities undertaken pursuant to this Agreement will be for the sole and exclusive benefit of City and the Contractor and not for the benefit of any other party.

5.37 Conflict in Language. All work performed must conform to all applicable City of Chandler codes, ordinances, and requirements as outlined in this Agreement. If there is a conflict in interpretation between provisions in this Agreement and those in the Exhibits, the provisions in this Agreement prevail.

5.38 Document/Information Release. Documents and materials released to the Contractor, which are identified by the City as sensitive and confidential, are the City's property. The document/material must be issued by and returned to the City upon completion of the services under this Agreement. Contractor's secondary distribution, disclosure, copying, or duplication in any manner is prohibited without the City's prior written approval. The document/material must be kept secure at all times. This directive applies to all City documents, whether in photographic, printed, or electronic data format.

5.39 Exhibits. The following exhibits are made a part of this Agreement and are incorporated by reference:

Exhibit A - Project Description/Scope of Services
Exhibit B - Compensation and Fees
Exhibit C - Insurance Requirements
Exhibit D - Special Conditions

5.40 Special Conditions. As part of the services Contractor provides under this Agreement, Contractor agrees to comply with and fully perform the special terms and conditions set forth in Exhibit D, which is attached to and made a part of this Agreement.

5.41 Cooperative Use of Agreement. In addition to the City of Chandler and with approval of the Contractor, this Agreement may be extended for use by other municipalities, school districts and government agencies of the State. Any such usage by other entities must be in accordance with the ordinance, charter and/or procurement rules and regulations of the respective political entity.

If required to provide services on a school district property at least five times during a month, the Contractor will submit a full set of fingerprints to the school of each person or employee who may provide such service. The District will conduct a fingerprint check in accordance with

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A.R.S. 41-1750 and Public Law 92-544 of all Contractors, subcontractors or vendors and their employees for which fingerprints are submitted to the District. Additionally, the Contractor will comply with the governing body fingerprinting policies of each individual school district/public entity. The Contractor, sub-contractors, vendors and their employees will not provide services on school district properties until authorized by the District.

Orders placed by other agencies and payment thereof will be the sole responsibility of that agency. The City will not be responsible for any disputes arising out of transactions made by other agencies who utilize this Agreement.

5.42 Non-Discrimination and Anti-Harassment Laws. Contractor must comply with all applicable City, state, and federal non-discrimination and anti-harassment laws, rules, and regulations.

5.43 Licenses and Permits. Beginning with the Effective Date and for the full term of this Agreement, Contractor must maintain all applicable City, state, and federal licenses and permits required to fully perform Contractor's services under this Agreement.

5.44 Warranties. Contractor must furnish a one-year warranty on all work and services performed under this Agreement. Contractor must furnish, or cause to be furnished, a two-year warranty on all fixtures, furnishings, and equipment furnished by Contractor, subcontractors, or suppliers under this Agreement. Any defects in design, workmanship, or materials that do not comply with this Agreement must be corrected by Contractor (including, but not limited to, all parts and labor) at Contractor's sole cost and expense. All written warranties and redlines for as-built conditions must be delivered to the City on or before the City's final acceptance of Contractor's services under this Agreement.

5.45 Emergency Purchases. City reserves the rights to purchase from other sources those items, which are required on an emergency basis and cannot be supplied immediately by the Contractor.

5.46 Non-Exclusive Agreement. This agreement is for the sole convenience of the City of Chandler. The City reserves the right to obtain like goods or services from another source when necessary.

5.47 Budget Approval Into Next Fiscal Year. This Agreement will commence on the Effective Date and continue in full force and effect until it is terminated or expires in accordance with the provisions of this Agreement. The Parties recognize that the continuation of this Agreement after the close of the City's fiscal year, which ends on June 30 of each year, is subject to the City Council's approval of a budget that includes an appropriation for this item as expenditure. The City does not represent that this budget item will be actually adopted. This determination is solely made by the City Council at the time Council adopts the budget.

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This Agreement shall be in full force and effect only when it has been approved and executed by the duly authorized City officials.

FOR THE CITY	**FOR THE CONTRACTOR**
By: _____	By: G. Parekh
Its: Mayor	Its: Partner, Parsus Solutions, LLC

APPROVED AS TO FORM:

By: _____
City Attorney JMB

ATTEST:

By: _____
City Clerk

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EXHIBIT A TO AGREEMENT
SCOPE OF SERVICES

Managed Support Services

The Contractor will provide managed support services to the city as described below.

Perform all upkeep and maintenance services not limited to:

- Management and Business Analysis: Including management staff, status updates, process flow, screen flow, content gathering, coordination between the city and Contractor personnel, content management and loading, and other similar tasks.
- Code Development: Including business logic layer, front-end layer, content management system layer, and other similar tasks.
- Testing: Including unit testing, interface testing, end-to-end user testing, load testing, and other similar tasks.
- Content Based Tasks: Including content creation, content editing, content management, and other similar tasks.
- Graphical and User Interface Design and Development: Including brand execution, development of process flows, icons, images, animations, videos, and other similar tasks.
- Meeting and Conference Time: Including time spent by Contractor staff in meetings and conference calls.
- Other Miscellaneous Tasks: Including technology and business-related tasks at the request of the city.

Applications to be supported include:

- Business Portal (business.chandleraz.gov)
- MyChandler (auth.chandleraz.gov)
- Collections Licensing and Audit Software Suite (CLASS)
- Solid Waste Record Management System (RMS)

Communication

The city and Contractor will communicate utilizing email, JIRA, and Slack.

To facilitate remote work, the city will provide web meeting software and conference bridges when needed.

Reporting and Documentation

All requests for services will be processed through a designated city system to enable both parties to manage and fulfill all requests.

Support and Development Items

The Contractor will perform development services as needed by the city. Work and priorities will be mutually agreed upon by the parties.

City Responsibilities

- Change management
- Database related services

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EXHIBIT B TO AGREEMENT
COMPENSATION AND FEES

The Contractor will track time for all Contractor staff for time spent on the city's systems and obtain approval from the city prior to submitting invoices. Hours will be billed in five-minute increments and a report of hours will be sent to the city on a monthly basis.

The rate for services provided is $168.73 per hour. A 4% escalation will be applied to the hourly rate for each extension term.

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EXHIBIT C TO AGREEMENT
INSURANCE

INSURANCE

General.

A. At the same time as execution of this Agreement, the Contractor shall furnish the City a certificate of insurance on a standard insurance industry ACORD form. The ACORD form must be issued by an insurance company authorized to transact business in the State of Arizona possessing a current A.M. Best, Inc. rating of A-7, or better and legally authorized to do business in the State of Arizona with policies and forms satisfactory to City. Provided, however, the A.M. Best rating requirement shall not be deemed to apply to required Workers' Compensation coverage.

B. The Contractor and any of its subcontractors shall procure and maintain, until all of their obligations have been discharged, including any warranty periods under this Agreement are satisfied, the insurances set forth below.

C. The insurance requirements set forth below are minimum requirements for this Agreement and in no way limit the indemnity covenants contained in this Agreement.

D. The City in no way warrants that the minimum insurance limits contained in this Agreement are sufficient to protect Contractor from liabilities that might arise out of the performance of the Agreement services under this Agreement by Contractor, its agents, representatives, employees, subcontractors, and the Contractor is free to purchase any additional insurance as may be determined necessary.

E. Failure to demand evidence of full compliance with the insurance requirements in this Agreement or failure to identify any insurance deficiency will not relieve the Contractor from, nor will it be considered a waiver of its obligation to maintain the required insurance at all times during the performance of this Agreement.

F. Use of Subcontractors: If any work is subcontracted in any way, the Contractor shall execute a written contract with Subcontractor containing the same Indemnification Clause and Insurance Requirements as the City requires of the Contractor in this Agreement. The Contractor is responsible for executing the Agreement with the Subcontractor and obtaining Certificates of Insurance and verifying the insurance requirements.

Minimum Scope and Limits of Insurance. The Contractor shall provide coverage with limits of liability not less than those stated below.

A. *Commercial General Liability-Occurrence Form*. Contractor must maintain "occurrence" form Commercial General Liability insurance with a limit of not less than $2,000,000 for each occurrence, $4,000,000 aggregate. Said insurance must also include coverage for products and completed operations, independent contractors, personal injury and advertising injury. If any Excess insurance is utilized

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to fulfill the requirements of this paragraph, the Excess insurance must be "follow form" equal or broader in coverage scope than underlying insurance.

B. *Automobile Liability-Any Auto or Owned, Hired and Non-Owned Vehicles*
Vehicle Liability: Contractor must maintain Business/Automobile Liability insurance with a limit of $1,000,000 each accident on Contractor owned, hired, and non-owned vehicles assigned to or used in the performance of the Contractor's work or services under this Agreement. If any Excess or Umbrella insurance is utilized to fulfill the requirements of this paragraph, the Excess or Umbrella insurance must be "follow form" equal or broader in coverage scope than underlying insurance.

C. *Workers Compensation and Employers Liability Insurance*: Contractor must maintain Workers Compensation insurance to cover obligations imposed by federal and state statutes having jurisdiction of Contractor employees engaged in the performance of work or services under this Agreement and must also maintain Employers' Liability insurance of not less than $1,000,000 for each accident and $1,000,000 disease for each employee.

D. *Professional Liability.* If the Agreement is the subject of any professional services or work performed by the Contractor, or if the Contractor engages in any professional services or work adjunct or residual to performing the work under this Agreement, the Contractor must maintain Professional Liability insurance covering errors and omissions arising out of the work or services performed by the Contractor, or anyone employed by the Contractor, or anyone whose acts, mistakes, errors and omissions the Contractor is legally liable, with a liability limit of $1,000,000 each claim and $2,000,000 all claims. In the event the Professional Liability insurance policy is written on a "claims made" basis, coverage must extend for three years past completion and acceptance of the work or services, and the Contractor, or its selected Design Professional will submit Certificates of Insurance as evidence the required coverage is in effect. The Design Professional must annually submit Certificates of Insurance citing that the applicable coverage is in force and contains the required provisions for a three year period.

E. *Technology Errors and Omissions Liability including Network Security and Privacy Liability*

	Minimum Limits:
Per Loss	$ 3,000,000
Aggregate	$ 3,000,000

The policy shall cover professional misconduct or lack of ordinary skill for those positions defined in the Scope of Services of this contract.

In the event that the professional liability insurance required by this Contract is written on a claims-made basis, Contractor warrants that any retroactive date under the policy shall precede the effective date of this Contract; and that either continuous coverage will be maintained or an extended discovery period will be

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exercised for a period of two years beginning at the time work under this Contract is completed.

If such insurance is maintained on an occurrence form basis, Contractor shall maintain such insurance for an additional period of one year following termination of Contract. If such insurance is maintained on a claims-made basis, Contractor shall maintain such insurance for an additional period of three years following termination of the Contract.

If Contractor contends that any of the insurance it maintains pursuant to other sections of this clause satisfies this requirement (or otherwise insures the risks described in this section), then Contractor shall provide proof of same.

The insurance shall provide coverage for the following risks

a. Liability arising from theft, dissemination and / or use of confidential information (a defined term including but not limited to bank account, credit card account, personal information such as name, address, social security numbers, etc. information) stored or transmitted in electronic form
b. Network Security Liability arising from the unauthorized access to, use of or tampering with computer systems including hacker attacks, inability of an authorized third party, to gain access to your services including denial of service, unless caused by a mechanical or electrical failure
c. Liability arising from the introduction of a computer virus into, or otherwise causing damage to, a customer's or third person's computer, computer system, network or similar computer related property and the data, software, and programs thereon.

Additional Requirements:

a. The policy shall provide a waiver of subrogation

Additional Policy Provisions Required.

A. *Self-Insured Retentions or Deductibles*. Any self-insured retentions and deductibles must be declared and approved by the City. If not approved, the City may require that the insurer reduce or eliminate any deductible or self-insured retentions with respect to the City, its officers, officials, agents, employees, and volunteers.

1. The Contractor's insurance must contain broad form contractual liability coverage.

2. The Contractor's insurance coverage must be primary insurance with respect to the City, its officers, officials, agents, and employees. Any insurance or self-insurance maintained by the City, its officers, officials, agents, and employees shall be in excess of the coverage provided by the Contractor and must not contribute to it.

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3. The Contractor's insurance must apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability.

4. Coverage provided by the Contractor must not be limited to the liability assumed under the indemnification provisions of this Agreement.

5. The policies must contain a severability of interest clause and waiver of subrogation against the City, its officers, officials, agents, and employees, for losses arising from Work performed by the Contractor for the City.

6. The Contractor, its successors and or assigns, are required to maintain Commercial General Liability insurance as specified in this Agreement for a minimum period of three years following completion and acceptance of the Work. The Contractor must submit a Certificate of Insurance evidencing Commercial General Liability insurance during this three-year period containing all the Agreement insurance requirements, including naming the City of Chandler, its agents, representatives, officers, directors, officials and employees as Additional Insured as required.

7. If a Certificate of Insurance is submitted as verification of coverage, the City will reasonably rely upon the Certificate of Insurance as evidence of coverage but this acceptance and reliance will not waive or alter in any way the insurance requirements or obligations of this Agreement.

B. *Insurance Cancellation During Term of Contract/Agreement.*

1. If any of the required policies expire during the life of this Contract/Agreement, the Contractor must forward renewal or replacement Certificates to the City within ten days after the renewal date containing all the required insurance provisions.

2. Each insurance policy required by the insurance provisions of this Contract/Agreement shall provide the required coverage and shall not be suspended, voided or canceled except after 30 days prior written notice has been given to the City, except when cancellation is for non-payment of premium, then ten days prior notice may be given. Such notice shall be sent directly to Chandler Law-Risk Management Department, Post Office Box 4008, Mailstop 628, Chandler, Arizona 85225. If any insurance company refuses to provide the required notice, the Contractor or its insurance broker shall notify the City of any cancellation, suspension, non-renewal of any insurance within seven days of receipt of insurers' notification to that effect.

A. *City as Additional Insured*. The policies are to contain, or be endorsed to contain, the following provisions:

1. The Commercial General Liability and Automobile Liability policies are to contain, or be endorsed to contain, the following provisions: The City, its officers, officials, agents, and employees are additional insureds with respect to liability arising out of activities performed by, or on behalf of, the Contractor

Docusign Envelope ID: D071F348-3E09-4183-91B4-02B3EE3B3DC4

including the City's general supervision of the Contractor; Products and Completed operations of the Contractor; and automobiles owned, leased, hired, or borrowed by the Contractor.

2. The City, its officers, officials, agents, and employees must be additional insureds to the full limits of liability purchased by the Contractor even if those limits of liability are in excess of those required by this Agreement.

Docusign Envelope ID: D071F348-3E09-4183-91B4-02B3EE3B3DC4

EXHIBIT D TO AGREEMENT
SPECIAL CONDITIONS

Compliance with WCAG Version 2.1 Level AA. Contractor represents and warrants that the software provided hereunder is in compliance with the Web Content Accessibility Guidelines (WCAG) Version 2.1, Level AA.

City Ownership of Project Documents. All work products (electronically or manually generated) including, but not limited to: plans, specifications, cost estimates, tracings, studies, design analyses, original drawings, Computer Aided Drafting and Design (CADD) file diskettes which reflect all final drawings, and other related documents which are prepared in the performance of this Agreement (collectively referred to as "Documents") are to be and remain the property of the City and are to be delivered to the City Representative before the final payment is made to the Contractor. In the event these Documents are altered, modified or adapted without the written consent of the Contractor, which consent the Contractor shall not unreasonably withhold, the City agrees to hold the Contractor harmless to the extent permitted by law from the legal liability arising out of the City's alteration, modification or adaptation of the Documents.

Contractor to Retain Copyrights. The copyrights, patents, trade secrets or other intellectual property rights associated with the ideas, concepts, techniques, inventions, processes or works of authorship developed or created by the Contractor, its subcontractors or personnel, during the course of performing this Agreement or arising out of the Project shall belong to the Contractor.

License to City for Reasonable Use. With this Agreement, the Contractor and its subcontractors hereby grant a license to the City, its agents, employees, and representatives for an indefinite period of time to reasonably use, make copies, and distribute as appropriate the Documents, works or deliverables developed or created as a result of the Project and this Agreement. This license also includes the making of derivative works. In the event that the derivative works require the City to alter or modify the Documents, then the provisions of this section apply.

Offshore Performance of Work Prohibited. Due to security and identification protection concerns, direct Services under this Agreement must be performed within the borders of the United States. Any Services that are described in the scope of work that directly serve the City and may involve access to secure or sensitive data or personal client data or development or modification of software for the City must be performed within the borders of the United States. Notwithstanding anything to the contrary, and unless stated otherwise in the scope of work, this definition does not apply to indirect or "overhead" services, redundant back-up services, or services that are incidental to the performance of this Agreement.

CHANDLER arizona
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City Council Memorandum Information Technology Memo No. N/A

Date:	June 12, 2025
To:	Mayor and Council
Thru:	Joshua H. Wright, City Manager Dawn Lang, Deputy City Manager - CFO Sandip Dholakia, Chief Information Officer
From:	Kerstin Nold, IT Chief Technology Officer
Subject:	Purchase of Information Technology Temporary Staffing Services

Proposed Motion:

Move City Council approve the purchase of information technology temporary staffing services, from Computer Aid, Inc., utilizing the Sourcewell Contract No. 071321-CAI, in an amount not to exceed $4,852,400, for a period of one year, beginning July 1, 2025, through June 30, 2026.

Background/Discussion:

The Information Technology (IT) Department has historically hired temporary staff to assist in special projects or backfill vacant positions by utilizing competitively solicited and awarded temporary staffing contracts. These temporary employees have specialized skills in specific technical areas which complement IT staff and work on a temporary basis for a specific assignment.

This request is for temporary resources in the role of technology staffing for applications, cybersecurity, infrastructure and project management resources for citywide project efforts. Initiatives covered under this agreement include Cybersecurity Services, Microsoft 365 Services, Network and Telecommunications Services, Infrastructure Services, Utility Billing and Online Payment System Replacements, Enterprise Resource Planning (ERP) Replacement, Data Services, and Web Services. The hourly rates range from $100 to $200 per hour, depending on the skill set required. The estimated duration of the assignment ranges from 6 to 18 months.

Evaluation:

Sourcewell competitively solicited and awarded a contract for managed service providers specifically for specialized IT resources. The city has a current agreement with Sourcewell allowing for the cooperative use of its contracts.

Financial Implications:

The total request of $4,852,400 is split between IT Operations temporary staffing, with an estimated 13 FTE for a total of $2,962,400, and City Technology Portfolio projects temporary staffing, with an estimated 6 FTE for a total of $1,890,000. Funding for this agreement is contingent upon City Council adopting the FY25-26 budget.

Fiscal Impact

Account No.	Fund Name	Program Name	Dollar Amount	CIP Funded Y/N
101.1200.5219.0.0.0	General Fund	N/A	$1,040,000	N
101.1280.5219.0.0.0	General Fund	N/A	$1,258,400	N
101.1199.5219.0.0.0	General Fund	N/A	$223,600	N
101.1281.5219.0.0.0	General Fund	N/A	$270,400	N
101.1199.5418.0.0.0	General Fund	N/A	$170,000	N
101.1286.5418.0.6IC124.0	General Fund	Digital Adoption Platform	$90,000	N
401.1285.5219.0.6IC088.0	General Govt Capital Projects	Project Management Consultants	$841,000	Y
605.1285.5219.0.6IC112.0	General Govt Capital Projects	Utility Billing Re-platform	$360,934	Y

615.1285.5219.0.6	IC112.0	General Govt Capital Projects	Utility Billing Re-platform	$270,640	Y
625.1285.5219.0.6	IC112.0	General Govt Capital Projects	Utility Billing Re-platform	$180,426	Y
401.1285.5219.0.6	IC145.0	General Govt Capital Projects	Instant Language Assistant (ILA)	$147,000	Y

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City Council Memorandum Information Technology Memo No. N/A

Date: June 12, 2025
To: Mayor and Council
Thru: Joshua H. Wright, City Manager
Dawn Lang, Deputy City Manager - CFO
Sandip Dholakia, Chief Information Officer
From: Kerstin Nold, IT Chief Technology Officer
Subject: Purchase of Utility Billing System Annual Support and Maintenance

Proposed Motion:

Move City Council approve the purchase of utility billing system annual support and maintenance services, from N. Harris Computer Corporation, in the amount of $267,989.85, for the period of one year, beginning July 1, 2025, through June 30, 2026.

Background/Discussion:

In 2024, Chandler launched a project to modernize and digitally transform its utilities services platform to achieve a variety of outcomes, including an improved customer experience portal, simplified automated workflows and approvals, improved digital output, and enhanced reporting capabilities. The implementation of Infinity CIS Version 5 will also take Chandler from an on-premise system to a cloud-based solution and position the city for Advanced Metering Infrastructure (AMI), which will feed metered consumption data in real time to a resident's mobile device, making leaks visible through consumption data prior to receiving their bill at the end of the month. As the Community of Innovation, modernizing the utility billing system allows Chandler to be flexible, improve both accessibility and mobility, enhance the customer experience, and move at the speed of business.

This request is to purchase annual maintenance and support for CIS Infinity in order to provide the system and application upgrades necessary to operate and stay current, as well as to access technical assistance resources needed to resolve system issues and enable software updates.

Evaluation:

On December 7, 2023, City Council approved an agreement with N. Harris Computer Corporation for the implementation of Infinity CIS Version 5, with a support and maintenance term of five years, with the option of up to four one-year extensions. Staff recommends this second year of support and maintenance of the initial five-year term.

Financial Implications:

The funding for this project is initially paid from General Fund 101, but the cost is recovered from the Water, Wastewater, and Solid Waste Enterprise Funds through annual cost recovery transfers. Funding for this agreement is contingent upon City Council adopting the FY 2025-26 budget.

Fiscal Impact

Account No.	Fund Name	Program Name	Dollar Amount	CIP Funded Y/N
101.1286.5419.0.6IC112.0	General Fund	Utility Billing Re-platform	$267,989.85	N

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City Council Memorandum Information Technology Memo No. N/A

Date:	June 12, 2025
To:	Mayor and Council
Thru:	Joshua H. Wright, City Manager Dawn Lang, Deputy City Manager - CFO Sandip Dholakia, Chief Information Officer
From:	Lisa Lapp, Chief Applications Officer
Subject:	Purchase of Oracle Annual Support and Maintenance

Proposed Motion:

Move City Council to approve the purchase of Oracle annual support and maintenance from Mythics, Inc., utilizing the Omnia Partners Contract No. R190801, in the amount of $424,970, for the period of one year, beginning August 1, 2025, through July 31, 2026.

Background/Discussion:

The city utilizes Oracle as its Enterprise Resource Planning (ERP) system, including the E-Business Suite Applications for Finance and Human Resources (HR). The application modules include HR, Self-Services HR, Financials, Payroll, Time Management, Project Costing, iExpense, iProcurement, Purchasing, and Order Management.

The city purchases maintenance and support in order to provide the system and application upgrades necessary to operate and keep Oracle modules current, as well as to access technical assistance resources needed to resolve system issues and enable software fixes. The cost of the maintenance and support is based on the number of user licenses per module needed by city employees on an annual basis.

Although the contract for replacement of the ERP system is in process, the existing ERP will need to keep operating while implementing the new system. Therefore, another year of support and maintenance is required.

Evaluation:

Region 4 ESC, on behalf of Omnia Partners, competitively solicited and awarded a contract for Oracle products and services. The city has a current agreement with Omnia Partners allowing for the cooperative use of its contracts. Oracle products and services are only available through resellers, and staff recommends the use of this contract because the city receives competitive pricing and a high level of services from Mythics, Inc.

Financial Implications:

Funding for this agreement is contingent upon City Council adopting the FY 2025-26 budget.

Fiscal Impact

Account No.	Fund Name	Program Name	Dollar Amount	CIP Funded Y/N
101.1200.5419.0.0.0	General Fund	N/A	$424,970	N

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City Council Memorandum Management Services Memo No. 25-104

Date: June 12, 2025
To: Mayor and Council
Thru: Joshua H. Wright, City Manager
Dawn Lang, Deputy City Manager - CFO
Kristi Smith, Financial Services Director
From: Danielle Wells, Revenue and Tax Senior Manager
Subject: License Series 12, Restaurant Liquor License Application for Jared Michael Repinski, Agent, Tap N Taco CH1, LLC, DBA Tap N Taco

Proposed Motion:

Move for recommendation to the State Department of Liquor Licenses and Control for approval of the State Liquor Job No. 340168, a Series 12, Restaurant Liquor License, for Jared Michael Repinski, Agent, Tap N Taco CH1, LLC, DBA Tap N Taco, located at 141 S. Arizona Avenue, and approval of the City of Chandler, Series 12, Restaurant Liquor License No. 309493.

Discussion:

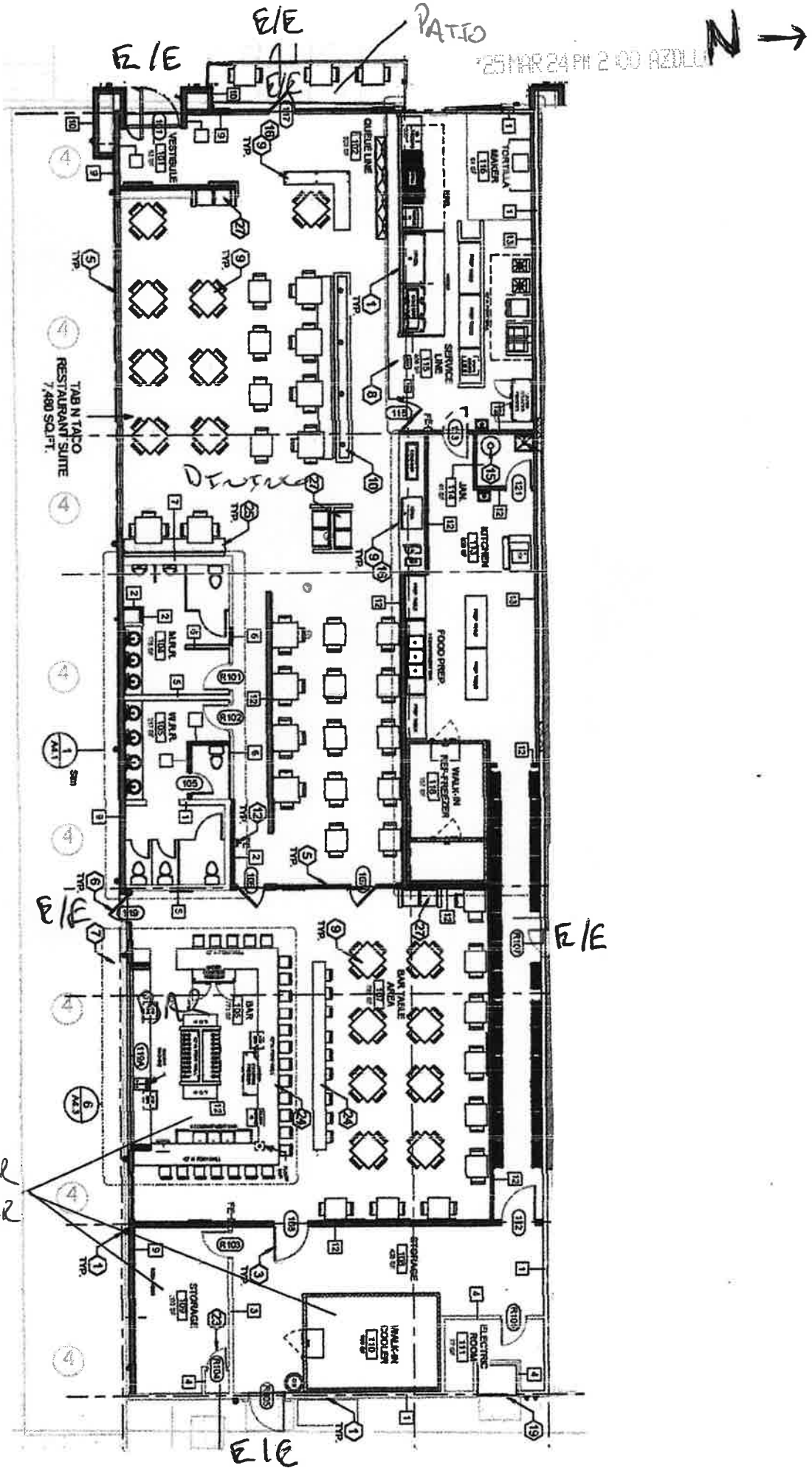
This application for a liquor license was posted for hearing on June 12, 2025.

Staff requests a recommendation for this liquor license as the establishment does not have an interim liquor license permit with the Department of Liquor Licenses and Control (DLLC) and desires to begin serving alcohol. The DLLC allows 60 days for the City to provide a recommendation for a liquor license application. This recommendation for approval by the Local Governing Body will be within 60 days allowing the applicant to proceed with their new liquor license application process.

The Police Department reports no objections to the issuance of this license. With a Series 12, Restaurant Liquor License, the business may sell all liquors for on-premise consumption only, with a minimum of 40% of the gross receipts from the sale of food.

Attachments

A-Floor Plan



7,480 SqFt

· Liquor Storage

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City Council Memorandum Management Services Memo No. 25-105

Date: June 12, 2025
To: Mayor and Council
Thru: Joshua H. Wright, City Manager
Dawn Lang, Deputy City Manager - CFO
Kristi Smith, Financial Services Director
From: Danielle Wells, Revenue and Tax Senior Manager
Subject: License Series 10, Beer and Wine Store Liquor License Application for Andrea Dahlman Lewkowitz, Agent, Trimark Chandler Hospitality II, LLC, DBA TownePlace Suites Phoenix Chandler Fashion Center

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Proposed Motion:

Move for recommendation to the State Department of Liquor Licenses and Control for approval of the State Liquor Job No. 337993, a Series 10, Beer and Wine Store Liquor License, for Andrea Dahlman Lewkowitz, Agent, Trimark Chandler Hospitality II, LLC, DBA TownePlace Suites Phoenix Chandler Fashion Center, located at 3635 W. Chandler Boulevard, and approval of the City of Chandler, Series 10, Beer and Wine Store Liquor License No. 305670.

Discussion:

This application for a liquor license was posted for hearing on June 12, 2025.

Staff requests a recommendation for this liquor license as the establishment does not have an interim liquor license permit with the Department of Liquor Licenses and Control (DLLC) and desires to begin serving alcohol. The DLLC allows 60 days for the City to provide a recommendation for a liquor license application. This recommendation for approval by the Local Governing Body will be within 60 days allowing the applicant to proceed with their new liquor license application process.

The Police Department reports no objections to the issuance of this license. With a Series 10, Beer and Wine Store Liquor License, the business may sell beer and wine only for off-premise consumption.

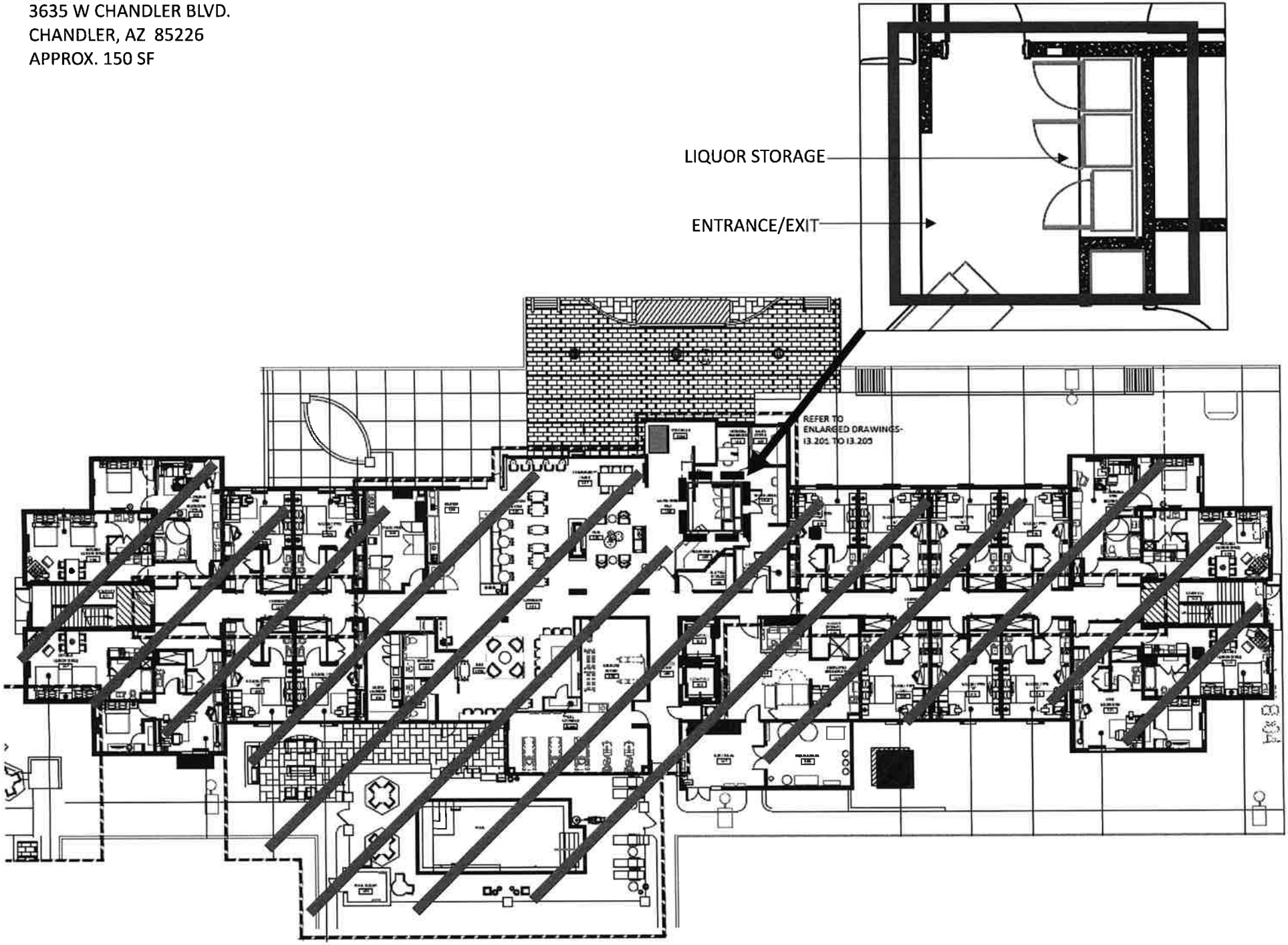
Attachments

A-Floor Plan

TOWNEPLACE SUITES PHOENIX CHANDLER FASHION CENTER

3635 W CHANDLER BLVD.
CHANDLER, AZ 85226
APPROX. 150 SF

LICENSED AREA



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City Council Memorandum Management Services Memo No. 25-103

Date: June 12, 2025
To: Mayor and Council
Thru: Joshua H. Wright, City Manager
Dawn Lang, Deputy City Manager - CFO
Kristi Smith, Financial Services Director
From: Danielle Wells, Revenue and Tax Senior Manager
Subject: New License Series 12, Restaurant Liquor License Application for Gerardo Reyes Gomez, Agent, Morning Glory Restaurant 3, LLC, DBA Morning Glory Brunchery

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Proposed Motion:

Move for recommendation to the State Department of Liquor Licenses and Control for approval of the State Liquor Job No. 340292, a Series 12, Restaurant Liquor License, for Gerardo Reyes Gomez, Agent, Morning Glory Restaurant 3, LLC, DBA Morning Glory Brunchery, located at 70 E. Riggs Road, Suite 1, and approval of the City of Chandler, Series 12, Restaurant Liquor License No. 309522.

Discussion:

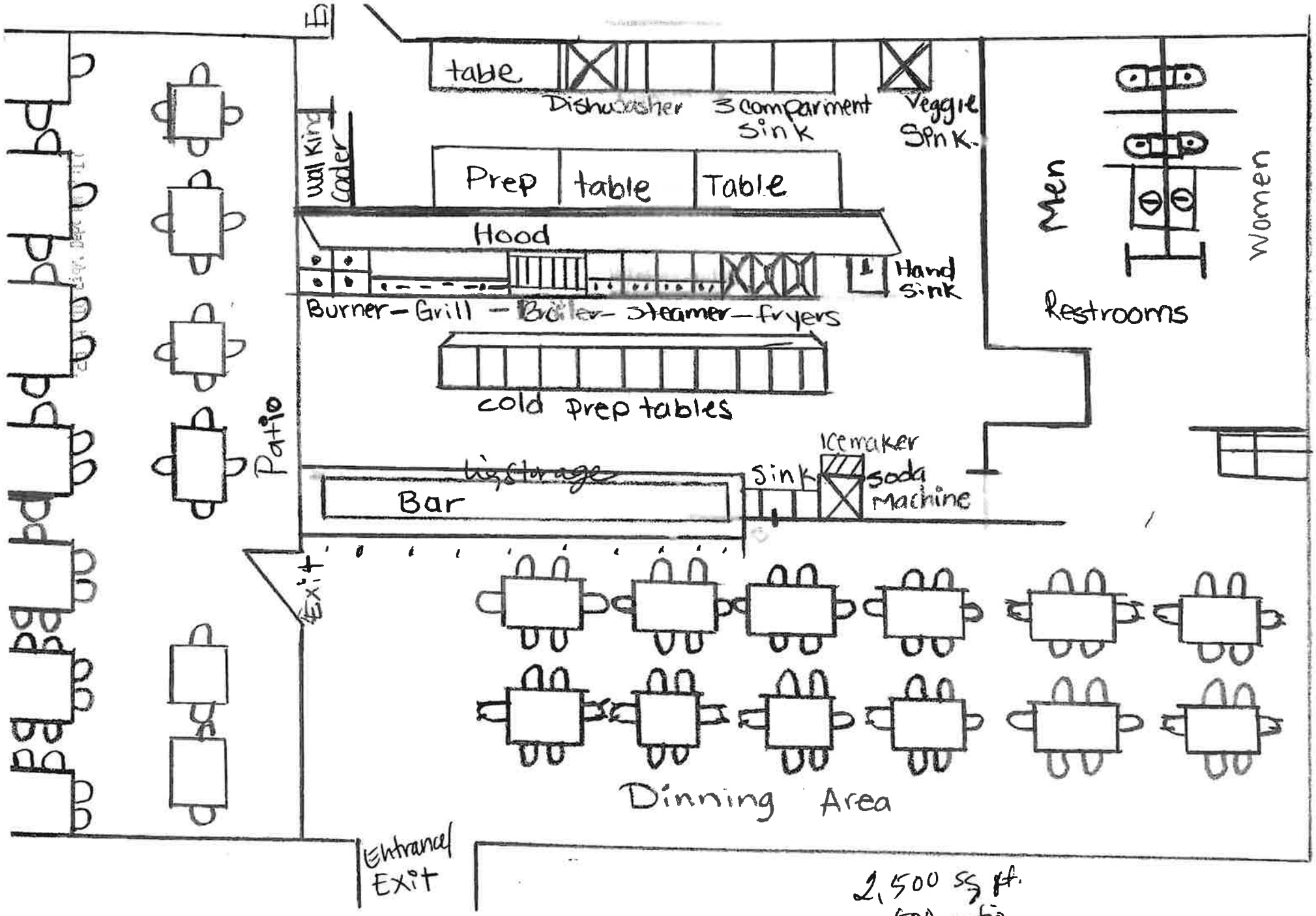
This application for a liquor license was posted for hearing on June 12, 2025.

Staff requests a recommendation for this liquor license as the establishment does not have an interim liquor license permit with the Department of Liquor Licenses and Control (DLLC) and desires to begin serving alcohol. The DLLC allows 60 days for the City to provide a recommendation for a liquor license application. This recommendation for approval by the Local Governing Body will be within 60 days allowing the applicant to proceed with their new liquor license application process.

The Police Department reports no objections to the issuance of this license. With a Series 12, Restaurant Liquor License, the business may sell all liquors for on-premise consumption only, with a minimum of 40% of the gross receipts from the sale of food.

Attachments

A-Floor Plan


table
Dishwasher
3 compartment sink
Veggie Sink
Walk in Cooler
Prep table
Table
Hood
Hand sink
Burner – Grill – Broiler – Steamer – fryers
cold prep tables
Men
Women
Restrooms
Patio
Icemaker
Sink
soda machine
Bar
Exit
Dinning Area
Entrance/ Exit
2,500 sq ft.
500 patio
3000 sq ft.

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City Council Memorandum Management Services Memo No. 25-106

Date: June 12, 2025
To: Mayor and Council
Thru: Joshua H. Wright, City Manager
Dawn Lang, Deputy City Manager - CFO
Kristi Smith, Financial Services Director
From: Danielle Wells, Revenue and Tax Senior Manager
Subject: License Series 12, Restaurant Liquor License Application for Luther Jeremy Rainer III, Agent, Pizza Solutions, LLC II, DBA Rosati's Pizza

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Proposed Motion:

Move for recommendation to the State Department of Liquor Licenses and Control for approval of the State Liquor Job No. 343458, a Series 12, Restaurant Liquor License, for Luther Jeremy Rainer III, Agent, Pizza Solutions, LLC II, DBA Rosati's Pizza, located at 1050 E. Ray Road, Suite 2, and approval of the City of Chandler, Series 12, Restaurant Liquor License No. 309547.

Discussion:

This application for a liquor license was posted for hearing on June 12, 2025.

The Police Department reports no objections to the issuance of this license. With a Series 12, Restaurant Liquor License, the business may sell all liquors for on-premise consumption only, with a minimum of 40% of the gross receipts from the sale of food.

Attachments

A-Floor Plan

Total SQ FT
2267

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City Council Memorandum **Government Relations & Transportation**
Policy Memo No. N/A

Date: June 12, 2025
To: Vice Mayor and Council
From: Mayor Kevin Hartke
Subject: Final Adoption of Ordinance No. 5132, Forming a City Charter Amendment Resident Advisory Committee

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Proposed Motion:

Move Council adopt Ordinance No. 5132, forming a City Charter Amendment Resident Advisory Committee, to review and identify potential amendments to the City's Charter.

Background/Discussion

The City Charter serves as the foundational governing document for the City of Chandler, outlining the structure, powers, and functions of the municipal government. Periodic review of the Charter ensures it remains relevant, efficient, and reflective of the community's needs and evolving best practices in municipal governance.

To support this process, the Mayor and Council recommend establishing a City Charter Amendment Resident Advisory Committee composed of nine Chandler residents who have diverse experience and expertise. This committee is tasked with reviewing the existing Charter, identifying areas for clarification or improvement, and providing recommendations to the City Council for possible referral to the voters.

Establishing this committee aligns with the City's commitment to participatory governance and civic engagement and provides a structured and inclusive avenue for evaluating the City Charter in a thoughtful and deliberate manner.

The ordinance was introduced and tentatively adopted by City Council on June 2, 2025.

Attachments

Ordinance 5132 Charter Amendment Committee

ORDINANCE NO. 5132

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF CHANDLER, ARIZONA, FORMING A CITY CHARTER AMENDMENT RESIDENT ADVISORY COMMITTEE TO REVIEW THE CITY CHARTER AND MAKE RECOMMENDATIONS TO THE CITY COUNCIL REGARDING POTENTIAL CHARTER AMENDMENTS TO BE REFERRED TO THE VOTERS FOR CONSIDERATION.

WHEREAS, Section 10.09 of the Chandler City Charter provides that Charter amendments may be initiated by a charter committee created by ordinance; and

WHEREAS, the Chandler City Charter was last amended in 2015; and

WHEREAS, during a work session held April 10, 2025, the Council provided direction to staff calling for the establishment of a City Charter Amendment Resident Advisory Committee to conduct a review of the City Charter and identify potential charter amendments to be considered for referral to the voters; and

WHEREAS, the City Charter Amendment Resident Advisory Committee is a public body as defined by Arizona Revised Statutes, and therefore, any meeting of the City Charter Amendment Resident Advisory Committee is subject to the Arizona Open Meeting Law.

NOW, THEREFORE, BE IT ORDAINED by the City Council of the City of Chandler, Arizona, as follows:

Section 1. A 2025 City Charter Amendment Resident Advisory Committee shall be formed to make recommendations to the Council on potential charter amendments to be considered for referral to the voters. The committee will consist of nine residents who have diverse experience and expertise and can contribute to a comprehensive review of the City Charter. The Mayor shall nominate committee members with the approval of the City Council as provided in Article VI of the City Charter.

Section 2. The 2025 City Charter Amendment Resident Advisory Committee shall sunset on November 3, 2026.

INTRODUCED AND TENTATIVELY APPROVED by the City Council of the City of Chandler, Arizona, this ____ day of June, 2025.

ATTEST:

_____ _____

CITY CLERK MAYOR

PASSED AND ADOPTED by the City Council of the City of Chandler, Arizona, this _____ day of _____, 2025.

ATTEST:

_____ _____

CITY CLERK MAYOR

CERTIFICATION

I HEREBY CERTIFY that the above and foregoing Ordinance No. 5132 was duly passed and adopted by the City Council of the City of Chandler, Arizona, at a regular meeting held on the ____ day of June, 2025, and that a quorum was present thereat.

_____

CITY CLERK

APPROVED AS TO FORM:

_____

CITY ATTORNEY

Published in the Arizona Republic on:

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Community of Innovation

City Council Memorandum Police Memo No. N/A

Date: June 12, 2025
To: Mayor and Council
Thru: Joshua H. Wright, City Manager
Tadd Wille, Assistant City Manager
Bryan Chapman, Police Chief
From: Michelle Potts, Police Communications Technology Senior Manager
Subject: **Purchase of Secure Communication Software**

Proposed Motion:

Move City Council approve the purchase of secure communication software, from Genasys, Inc., utilizing the Sourcewell Contract No. 051321-GYS, in an amount not to exceed $173,250.01, for Fiscal Years 2024-2025 through 2029-2030.

Background/Discussion:

Genasys Connect is a real-time communication software that enables officers in the field to exchange information through a secure, Criminal Justice Information Services (CJIS) and Freedom of Information Act (FOIA) compliant platform. Genasys Connect offers multimedia, text, audio, video and photo sharing capabilities for field coordination of information between officers. The platform can be used to coordinate with other agencies and provides a discreet communication option during undercover operations. Genasys Connect replaces the previous communication tool that was used by many law enforcement agencies across the nation, which has recently come under scrutiny for its security and FOIA compliance deficiencies.

Evaluation:

Sourcewell competitively solicited and awarded a contract to Genasys, Inc., for real-time communication software. The city has a current agreement allowing for the cooperative use of Sourcewell's contracts.

Financial Implications:

The contracted amount will cover 66 months of service beginning in January 2025. The breakdown by fiscal year is:
FY2024-25, $15,750.00
FY2025-26, $31,500.00
FY2026-27, $31,500.00
FY2027-28, $31,500.00
FY2028-29, $31,500.00
FY2029-30, $31,500.00

Fiscal Impact

Account No.	Fund Name	Program Name	Dollar Amount	CIP Funded Y/N
101.2061.5346	General Fund	N/A	$173,250	N

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Community of Innovation

City Council Memorandum Public Works & Utilities Memo No. UA25-086

Date: June 12, 2025
To: Mayor and Council
Thru: Joshua H. Wright, City Manager
Andy Bass, Deputy City Manager
John Knudson, Public Works and Utilities Director
From: Danny Sargent, Water Systems Senior Manager
Subject: Agreement No. 4521, Amendment No. 3, Supervisory Control and Data Acquisition (SCADA) Maintenance Services

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Proposed Motion:

Move City Council approve Agreement No. 4521, Amendment No. 3, with Schneider Electric Systems USA, Inc., for the sole source purchase of SCADA maintenance services, in an amount not to exceed $149,903, for the period of one year, July 1, 2025, through June 30, 2026.

Background/Discussion:

The Public Works & Utilities Department provides water and wastewater services to over 290,000 residents. These systems rely heavily on automation to reliably communicate and control water and wastewater facilities. This automation is primarily accomplished through the SCADA system. SCADA controls and monitors the Pecos Surface Water Treatment Plant (PSWTP), Airport Water Reclamation Facility (AWRF), Ocotillo Water Reclamation Facility (OWRF), and 58 remote facilities, including water production facilities, water quality monitoring stations, wastewater lift stations, and reclaimed water facilities. Beyond system control, SCADA captures operations data throughout the system for regulatory reporting and system analysis.

This contract will be used to maintain the Foxboro SCADA systems currently in place at PSWTP and AWRF. Since the SCADA systems at PSWTP and AWRF are proprietary and highly specialized, it is necessary to have personnel available who specialize in maintaining these systems. Schneider will provide technical staff who are specifically trained in maintaining these systems to complete repair and

preventative maintenance tasks. Routine equipment life cycle assessments will also be conducted to help staff plan for equipment replacement needs. Staff will also utilize this contract to ensure the SCADA systems are updated with the latest software revisions to ensure full compliance with cybersecurity guidelines.

Evaluation:

On June 15, 2023, City Council approved an agreement with Schneider Electric Systems USA, Inc., for the sole source purchase of SCADA maintenance services, for a one-year period, with the option of up to two one-year extensions. Amendment No. 3 adds three one-year options to extend the agreement and exercises the first of those options. All other terms and conditions remain the same.

Fiscal Impact

Account No.	Fund Name	Program Name	Dollar Amount	CIP Funded Y/N
605.3830.5219	Water Operatng	Other Professional Services	64,683	N
615.3960.5219	Water Operatng	Other Professional Services	85,220	N

Attachments

Amendment No. 3

City Clerk Document No. _____

City Council Meeting Date: June 12, 2025

AMENDMENT TO CITY OF CHANDLER AGREEMENT
MASTER AGREEMENT FOR THE SALE OF GOODS, SERVICES, AND SOFTWARE
BETWEEN CITY OF CHANDLER AND SCHNEIDER ELECTRIC SERVICES
CITY OF CHANDLER AGREEMENT NO. 4521

THIS AMENDMENT NO. 3 (Amendment No. 3) is made and entered into by and between the City of Chandler, an Arizona municipal corporation (City), and Schneider Electric Systems USA, Inc. (Contractor), (City and Contractor may individually be referred to as Party and collectively referred to as Parties) and made _____ , 2025 (Effective Date).

RECITALS

WHEREAS, the Parties entered into an agreement for SCADA electronic maintenance services at the Pecos Surface Water Treatment Plant and the City of Chandler Airport (Agreement); and

WHEREAS, the term of the Agreement is July 1, 2023, through June 30, 2024, with the option of up to two one-year extensions; and

WHEREAS, the Parties wish to add two additional options to extend the Agreement through this Amendment; and

WHEREAS, the Parties wish to exercise the second option to extend the Agreement through this Amendment for the period of one year, July 1, 2025, through June 30, 2026.

AGREEMENT

NOW THEREFORE, the Parties agree as follows:

1. The recitals are accurate and are incorporated and made a part of the Agreement by this reference.

2. Section 6.1, Fees is amended to read as follows: Notwithstanding anything to the contrary in any schedule or exhibit, no Fees will be due or owed, with respect to any Services unless and until: (i) the parties agree to a Schedule covering such Services as listed in Revised Exhibit B, and (ii)

City receives an invoice for the relevant Fees.

3. Section 12.1, Agreement Term is amendment to read as follows: The Agreement is effective as of July 1, 2023, and will continue for a period of one year or until the Agreement is terminated as provided for herein. The city and the Contractor may mutually agree to extend the Agreement for up to five additional terms of one year each, or portions thereof.

4. All other terms and conditions of the Agreement remain unchanged and in full force and effect. If a conflict or ambiguity arises between this Amendment No. 3 and the Agreement, the terms and conditions in this Amendment No. 3 prevail and control.

IN WITNESS WHEREOF, the Parties have entered into this Amendment on the Effective Date.

FOR THE CITY

By: _____

Its: Mayor

FOR THE CONTRACTOR

By: Brandon Bocianski

Its: VP Finance

APPROVED AS TO FORM:

By: _____

City Attorney JWB

ATTEST:

By: _____

City Clerk

General

REVISED EXHIBIT B
FEE SCHEDULE

Pecos Surface Water Treatment Plant Fees

Premium Level Description	Year 1	Year 2	Year 3
Foxboro DCS System Included Services:	$64,683	$67,918	$71,313

Airport Water Reclamation Facility Fees

Premium Level Description	Year 1	Year 2	Year 3
Foxboro DCS System Included Services:	$85,220	$89,481	$93,955

General

CHANDLER arizona
Community of Innovation

City Council Memorandum Public Works & Utilities Memo No. CP25-126

Date: June 12, 2025
To: Mayor and Council
Thru: Joshua H. Wright, City Manager
Andy Bass, Deputy City Manager
John Knudson, Public Works and Utilities Director
Daniel Haskins, Capital Projects Division Manager
From: Sandra Story, Engineering Project Manager
Subject: Construction Agreement No. WW2206.404, with Arrowmark, LLC, for the Reclaimed Water Pipe Extension - Germann Road and Hamilton Street

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Proposed Motion:

Move City Council award Construction Agreement No. WW2206.404, to Arrowmark, LLC, for the Reclaimed Water Pipe Extension - Germann Road and Hamilton Street, in an amount not to exceed $835,000.

Background/Discussion:

In October 2021, the city executed a reclaimed water agreement with Intel Corporation for the city to provide additional reclaimed water supply to their manufacturing facilities. In order to meet the terms of the agreement, the city is constructing improvements at the Airport Water Reclamation Facility (AWRF), located at 905 E. Queen Creek Road, and north along Hamilton Street to Ryan Road, that will convey additional flows to the city's reclaimed water distribution system. This project will strategically improve the system to increase capacity and redundancy to better serve the existing reclaimed water infrastructure. The improvements will also allow the city to better manage its water resources through its system of existing recharge wells.

The project scope of work consists of installing approximately 200 linear feet of 24-inch ductile iron pipe (DIP) reclaimed waterline at the southeast corner of Hamilton Street and Germann Road, connecting to the existing 12-inch reclaimed waterline along Germann Road. The agreement completion time is 150 calendar days following Notice to Proceed.

A related Professional Services Agreement with Wilson Engineers, LLC, for the Reclaimed Water Pipe Extension - Germann Road and Hamilton Street, is also scheduled for this City Council meeting.

Evaluation:

Eight (8) bids were opened on April 22, 2025. The bid results were as follows:

Contractor	Bid Total
Arrowmark, LLC	$835,000
Degan Construction	$849,450
Elite Civil Construction, LLC	$851,950
Redpoint Contracting	$884,972
TF Contracting Services	$941,800
Hunter Contracting	$1,017,763
TPL Construction	$1,290,360
Revolution Industrial	Nonresponsive

Financial Implications:

The cost of this project will be reimbursed by Intel Corporation (20%) using funding provided for in its development agreement with the city. The remaining 80% of the project cost will utilize State of Arizona Title 42 funding for public infrastructure, per the city's October 2021 Reclaimed Water Agreement with Intel Corporation.

Fiscal Impact

Account No.	Fund Name	Program Name	Dollar Amount	CIP Funded Y/N
615.3910.6814.6WW690	Wastewater Operating	Reclaimed Water Conveyance Phase II	$835,000	Y

Attachments

Agreement
Location Map

Docusign Envelope ID: 4892B4B0-D834-4BFD-BC27-BAA8C2BD00BC

CHANDLER arizona Community of Innovation	**City of Chandler, Arizona** **Public Works & Utilities Department** **Capital Projects Division**

CONSTRUCTION BID

RECLAIMED WATER PIPE EXTENSION – GERMANN ROAD AND HAMILTON STREET
CITY PROJECT NO.: WW2206.404

MAYOR
Kevin Hartke

VICE MAYOR
Christine Ellis

COUNCIL
OD Harris **Matt Orlando**
Angel Encinas **Jane Poston** **Jennifer Hawkins**

Daniel Haskins

Daniel Haskins, P.E.
CIP City Engineer

Docusign Envelope ID: 4892B4B0-D834-4BFD-BC27-BAA8C2BD00BC

CITY OF CHANDLER, ARIZONA

CONSTRUCTION BID

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(if applicable)

FEDERAL PROVISIONS
(if applicable)

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LEGAL AD DEPARTMENT

CHANDLER arizona
Community of Innovation

INVITATION TO BID

RECLAIMED WATER PIPE EXTENSION – GERMANN ROAD AND HAMILTON STREET
CITY PROJECT NO.: WW2206.404

NOTICE IS HEREBY GIVEN that sealed bids will be received and date/time stamped by the City of Chandler Capital Projects Office, 215 East Buffalo Street, Chandler, Arizona 85225 until the bid submission date specified below.

All firms must be registered on the Arizona Procurement Portal (https://app.az.gov/) vendor registration system prior to submitting a Bid. Non-registered firms will not receive addenda notifications. Download the Bid Documents and any Addenda at www.chandleraz.gov/business/vendor-services/capital-projects/construction-bids. It is the contractor's sole responsibility to obtain all addenda from the City website prior to submitting their bid proposal, and to acknowledge receipt and acceptance of the addenda in their bid proposal submittal. No separate notification of addenda will be issued. The City recommends Contractors regularly check the website for updated information.

PRE-BID CONFERENCE:

	THERE WILL BE NO PRE-BID CONFERENCE

SOLICITATION QUESTIONS DUE DATE:

April 8, 2025 **5:00 p.m.** **Arizona time**	All solicitation questions must be emailed to Bid.Questions@chandleraz.gov with the subject line of: **"WW2206.404 Reclaimed Water Pipe Extension – Germann Road and Hamilton Street BID QUESTION".** Questions received **after the due date** and time will **NOT** be considered.

BID SUBMISSION:

April 22, 2025 **3:00 p.m.** **Arizona time**	Sealed bids must be delivered to the City of Chandler Capital Projects Office located at 215 East Buffalo Street, Chandler, Arizona, 85225. **Bids must be received on or before date and time specified.** At that time, bids will be publicly opened and read aloud in the **Saguaro Conference Room.** Bids received after the due date and time will be returned unopened without consideration. All bids must be submitted in a sealed envelope plainly marked as follows: BID OF _____, CONTRACTOR FOR: *"Reclaimed Water Pipe Extension – Germann Road and Hamilton Street"* "WW2206.404"

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Work under this Agreement includes the installation of approximately 200 linear feet of 24-inch ductile iron pipe (DIP) reclaimed waterline at the southeast corner of Hamilton Street and Germann Road, connecting to the existing 12-inch reclaimed waterline along Germann Road. Work must be completed within **150** consecutive calendar days from the Notice to Proceed. The Engineer's Estimate range is **$1,000,000** - **$1,500,000.**

Bids must be submitted on the Proposal Form provided and be accompanied by the Bid Bond for not less than ten percent (10%) of the total bid, payable to the City of Chandler, Arizona, or a certified or cashier's check. PERSONAL OR INDIVIDUAL SURETY BONDS ARE NOT ACCEPTABLE.

The successful bidder will be required to execute the standard form of agreement for construction prior to Council award

The successful bidder must furnish a Payment Bond and Performance Bond in the amount equal to one hundred percent (100%) of the Agreement Price.

The right is hereby reserved to accept or reject any or all bids or parts thereto, to waive any informalities in any proposal and reject the bids of any persons who have been delinquent or unfaithful to any agreement with the City of Chandler.

All Bids will remain open for 90 days after the Bid opening day, but the City may, in its sole discretion, release any Bid and return the bid security prior to that date. No Bidder may withdraw his Bid during this period without written permission from the City.

Find PRELIMINARY BID RESULTS at: https://www.chandleraz.gov/business/vendor-services/capital-projects

Protest Policy - A protest of a proposed award must be filed WITH THE PURCHASING OFFICE within 5 calendar days of the first posting of the award recommendation. Award recommendations are posted on the Capital Projects web site or the City Clerk web site. If the due date occurs on a weekend or holiday the protest must be filed the next business day.

A Protest must include:

- The name, address and telephone number of the protester;
- The signature of the protester or its representative;
- Identification of the project and the solicitation or agreement number;
- A detailed statement of the legal and factual grounds of the protest including copies of relevant documents; and
- The form of relief requested.

City will review the protest and issue a written response.

PUBLISHED DATE:	**3/20/2025** **3/27/2025** Arizona Republic AFFIDAVIT OF PUBLICATION

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BID SUBMITTAL LIST

This list may not include all required bid submission items. It is the Contractor's responsibility to read the entire bid and determine all items required by the submission date and time.

DO NOT DOUBLE-SIDE ANY PART OF THE BID SUBMITTAL

PROJECT NAME: **Reclaimed Water Pipe Extension – Germann Road and Hamilton Street**

CITY PROJECT NO.**:** **WW2206.404**

PLEASE INCLUDE THE FOLLOWING ITEMS IN YOUR SUBMITTAL ACCORDING TO THE DATE AND TIME LISTED IN THE INVITATION TO BID ADVERTISEMENT:

A. Bid Bond (Original – with Seal)

B. Signed Proposal Acknowledgement, and licenses

C. Bid Schedule

D. Subcontractor's List Form

E. Non-Collusion Bidding Certification

F. Certificate of Insurability and Bonding

G. Arizona Department of Revenue Privilege Tax License

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BID BOND

ARIZONA STATUTORY BID BOND PURSUANT TO
TITLES 28, 34 AND 41,
OF THE ARIZONA REVISED STATUTES
(Penalty of this bond must not be less than 10% of the bid amount)

KNOW ALL MEN BY THESE PRESENTS: That, Arrowmark, LLC, (hereinafter "Principal"), as Principal, and Employers Mutual Casualty Company, (hereinafter "Surety"), a corporation organized and existing under the laws of the State of Iowa, with its principal offices in Des Moines, IA, holding a certificate of authority to transact surety business in Arizona issued by the Director of the Department of Insurance pursuant to Title 20, Chapter 2, Article 1, as Surety, held and firmly bound unto City of Chandler, (hereinafter "Obligee"), as Obligee, in the amount of Ten Percent (10%) of the amount of the bid of Principal, submitted by Principal to the Obligee for the work described below, for the payment of which sum, the Principal and Surety bind themselves, and their heirs, administrators, executors, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has submitted a bid for construction of:

Reclaimed Water Pipe Extension – Germann Road and Hamilton Street
City Project No.: WW2206.404

NOW, THEREFORE, if the Obligee shall accept the proposal of the Principal and the Principal shall enter into an agreement with the Obligee in accordance with the terms of the proposal and give the bonds and certificates of insurance as specified in the agreement document with good and sufficient surety for the faithful performance of the agreement and for the prompt payment of labor and materials furnished in the prosecution of the agreement, or in the event of the failure of the Principal to enter into the agreement and give the bonds and certificates of insurance, if the Principal pays to the Obligee the difference not to exceed the penalty of the bond between the amount specified in the proposal and such larger amount for which the Obligee may in good faith contract with another party to perform the work covered by the proposal then this obligation is void. Otherwise it remains in full force and effect provided, however, that this bond is executed pursuant to the provisions of Section 34-201, Arizona Revised Statutes, and all liabilities on this bond shall be determined in accordance with the provisions of that section to the extent as if it were copied at length herein.

Witness our hands this 22nd day of April, 20 25.

Arrowmark, LLC	Employers Mutual Casualty Company
Principal SEAL	**SURETY** SEAL
By: [signature]	By: Debbie Clayton
	Attorney-in-Fact: Debbie Clayton
Its: VP of Business Development	Marsh & McLennan Agency LLC
	AGENCY OF RECORD
	8605 E Raintree Drive, Suite 200, Scottsdale, AZ 85260
	AGENCY ADDRESS

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CITY OF CHANDLER
CHANDLER, ARIZONA

Reclaimed Water Pipe Extension – Germann Road and Hamilton Street
City Project No.: WW2206.404

PROPOSAL ACKNOWLEDGEMENT

PROPOSAL to the City Engineer of the City of Chandler,
In compliance with the Advertisement for Bids, the undersigned bidder:

Having examined the agreement documents, site of work, and being familiar with the conditions to be met, hereby submits the following Proposal for furnishing the material, equipment, labor and everything necessary for the completion of the work listed and agrees to execute the agreement documents and furnish the required bonds and certificates of insurance for the completion of said work, at the locations and for the prices set forth on the inside pages of this form.

Understands that construction of this project shall be in accordance with all applicable Uniform Standard Specifications and Standard Details except as otherwise required by the Project Plans and Project Specific Provisions.

Understands that the Proposal shall be submitted with a Proposal guarantee of cash, certified check, cashier's check, or surety bond for an amount of not less than ten percent (10%) of the amount bid.

Agrees that upon receipt of Notice of Award from the City of Chandler, the undersigned bidder will execute the agreement documents.

Work shall be completed within **150** consecutive calendar days, beginning with the day following the starting date specified in the Notice to Proceed. Said Notice will be issued in accordance with the Project Specific Provisions "NOTICE TO PROCEED," or, when, in the opinion of the Engineer, sufficient materials are, or will be available for the continuous prosecution of the work.

Acknowledges that bid prices submitted include all applicable sales and/or use taxes, and no further compensation will be approved for these items.

The Bidder hereby acknowledges receipt of and agrees that the submitter's Proposal is based on the following Addenda:

Addendum	Date Received	Addendum No.	Date Received
_____	_____	_____	_____
_____	_____	_____	_____

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PROPOSAL ACKNOWLEDGEMENT

THIS BID IS SUBMITTED BY: Arrowmark, LLC.,

a corporation organized under the laws of the State of Arizona; a

partnership consisting of _____;

or individual trading as _____

and is the holder of an Arizona State Contractor's License: ROC 347447

ATTACH PHOTOCOPY

Classification A No. ROC 347447

Failure to fill in the information above, regarding the bidder being a holder of Arizona State Contractor's License is grounds for rejection of the bid.

Joint venture bid proposals will not be accepted for projects bidding in the amount (for base bid) of less than $5 million dollars.

Contractors are reminded it is a violation of State law to submit a bid if not properly licensed. Bids submitted without designating the Contractor's license classification and number, in the spaces provided above, shall be rejected. Bids submitted by Contractors without the required license shall be rejected.

Contractor acknowledges by signing below that bid prices submitted include all applicable sales and/or use taxes, and no further compensation shall be approved for these items. If there is a conflict between the unit bid price and the unit price extension for a particular pay item, the unit prices shall govern, per MAG 102.5. Also, per MAG 102.7, a proposal shall be considered irregular and may be rejected if there are unauthorized additions, statements, conditional or alternate bids, or irregularities of any kind.

Respectfully submitted,

Arrowmark, LLC.
Firm

33-1885924
Federal Tax ID Number

1620 S Stapley Dr Suite 118 Mesa, AZ, 85204
Address City, State and Zip Code

480-892-8025
Phone

By (Signature Required)

Stephen Bacon - VP of Construction
Name and Title (Print)

stephen.bacon@teamarrowmark.com
Email Address

Docusign Envelope ID: 4892B4B0-D834-4BFD-BC27-BAA8C2BD00BC

IMPORTANT NOTICE
YOU MUST:

) REPORT DISASSOCIATION OF QUALIFYING PARTY **IN WRITING** WITHIN 15 DAYS. [SEE A.R.S. §32-1154(A)(18)]
) REPORT A CHANGE OF ADDRESS **IN WRITING** WITHIN 30 DAYS. [SEE A.R.S. § 32-1122(B)(1)]
) REPORT ANY TRANSFER OF OWNERSHIP OF 50% OR MORE IMMEDIATELY [SEE A.R.S. § 32-1151.01]
) REPORT ANY CHANGE IN LEGAL ENTITY, SUCH AS ANY CHANGE OF THE OWNERSHIP IN A SOLE PROPRIETORSHIP OR CHANGE OF A PARTNER IN A PARTNERSHIP OR THE CREATION OF A NEW CORPORATE ENTITY [SEE A.R.S. § 32-1124 (B)(F) § RULE R-4-9-110]

Arrowmark LLC

1620 S Stapley Dr #118
Mesa, AZ 85204

THIS IS YOUR IDENTIFICATION CARD
DO NOT DESTROY

LICENSE EFFECTIVE THROUGH: September 30, 2025
STATE OF ARIZONA
Registrar of Contractors CERTIFIES THAT

Arrowmark LLC

CONTRACTORS LICENSE NO. ROC 347447 CLASS A

General Commercial
General Engineering
THIS CARD MUST BE PRESENTED UPON DEMAND

Tom Cole, Director

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Arrowmark LLC

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Mesa, AZ 85204

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LICENSE EFFECTIVE THROUGH: September 30, 2025
STATE OF ARIZONA
Registrar of Contractors CERTIFIES THAT

Arrowmark LLC

CONTRACTORS LICENSE NO. ROC 347447 CLASS A

General Commercial
General Engineering
THIS CARD MUST BE PRESENTED UPON DEMAND

Tom Cole, Director

Docusign Envelope ID: 4892B4B0-D834-4BFD-BC27-BAA8C2BD00BC

NAME OF BIDDER: Arrowmark, LLC.

CITY OF CHANDLER

Reclaimed Water Pipe Extension – Germann Road and Hamilton Street
City Project No.: WW2206.404

BID SCHEDULE

NO.	DESCRIPTION	UNIT	EST. QTY.	UNIT PRICE	EXTENDED PRICE
1	Mobilization / Demobilization	LS	1		$ 31,000.00
2	Survey / Staking	LS	1		$ 12,000.00
3	MOPO	LS	1		$ 11,700.00
4	Sidewalk Removal & Replacement	SF	750	$ 10.00	$ 7,500.00
5	Curb and Gutter Removal & Replacement	LF	50	$ 85.00	$ 4,250.00
6	4" RW Removal and Replacement	LF	50	$ 500.00	$ 25,000.00
7	24" RW System Piping & Fitting (DIP PC 250)	LF	200	$1,600.00	$ 320,000.00
8	12" Gate Valves	EA	2	$ 6,500.00	$ 13,000.00
9	4" Gate Valves	EA	1	$ 5,000.00	$ 5,000.00
10	24" Gate Valves Installation (Valves Supplied by the OWNER)	EA	2	$ 15,000.00	$ 30,000.00
11	Pavement Removal and Replacement	SY	100	$ 350.00	$ 35,000.00
12	Permanent Pavement Marking	LF	150	$ 35.00	$ 5,250.00
13	SRP Power Pole Bracing	LS	1		$ 5,500.00
14	Landscaping Restoration	LS	1		$ 10,000.00
15	Traffic Control	LS	1		$ 50,000.00
16	Stormwater Pollution Prevention Plan	LS	1		$ 3,300.00
17	GIS Documentation	LS	1		$ 1,500.00
18	Water Usage Allowance	AL	1	5,000	$ 5,000
19	Slurry Seal Allowance	AL	1	10,000	$ 10,000
20	Off-Duty Police Officer Allowance	AL	1	50,000	$ 50,000
21	Owner's Allowance	AL	1	200,000	$ 200,000

TOTAL BASE BID: $ 835,000.00

Note 1: Bidders must fill in all blank spaces with an entry. Bids submitted with blank spaces will be considered "Non-Responsive".

Note 2: Bids will be opened and read aloud at an open public meeting at the time and place designed in the invitation for bids. Bids will not be modified after the bid opening. A bidder withdrawing a bid after the bid opening will be deemed non-responsible and the City may make a claim against the bidder's bid bond.

Note 3: The City reserves the right to determine the low bidder based on the Base Bid with or without any Bid Alternate(s).

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SUBCONTRACTOR'S LIST FORM

Reclaimed Water Pipe Extension – Germann Road and Hamilton Street
City Project No.: WW2206.404

If Bidder intends to subcontract any portion of this Agreement, the bidder must submit the name, address, and contractor's license number (if applicable) of each subcontractor, including the work component of such subcontracting. Include this form with the bid submittal documents. Prime Contractor must self-perform according to MAG Specification 108.2. Bidder may make multiple copies of this form as needed.

Company Name:	CJWE, LTD	**Company Name:**	AWP Safety
Contact Name:	Christopher J Wilson	Contact Name:	John Hunt
Contact Email:	cwilson@cjweltd.com	Contact Email:	john.hunt@awpsafety.com
Contact Phone:	602-405-5122	Contact Phone:	602-714-4177
Work Component:	Survey	Work Component:	Traffic Control
Percentage of Total Work Performed:	.01 %	Percentage of Total Work Performed:	.03 %

Company Name:		**Company Name:**	
Contact Name:		Contact Name:	
Contact Email:		Contact Email:	
Contact Phone:		Contact Phone:	
Work Component:		Work Component:	
Percentage of Total Work Performed:		Percentage of Total Work Performed:	

Company Name:		**Company Name:**	
Contact Name:		Contact Name:	
Contact Email:		Contact Email:	
Contact Phone:		Contact Phone:	
Work Component:		Work Component:	
Percentage of Total Work Performed:		Percentage of Total Work Performed:	
Subcontractor Total Work Performed:	$ 35,480.00	Overall Bid Total:	$ 835,000.00
Overall Prime Contractor Self-performance %:	99.96 %		

Docusign Envelope ID: 4892B4B0-D834-4BFD-BC27-BAA8C2BD00BC

NON-COLLUSION BIDDING CERTIFICATION

(STATE OF) Arizona
ss.
(COUNTY OF) Maricopa

I, Stephen Bacon of the City of Mesa,
in the County of Maricopa and the State of Arizona, of full age,
being duly sworn according to the law of my oath depose and say that:

I am Stephen Bacon (Name) a, VP of Construction (Title, Position, etc.)

of the firm of Arrowmark, LLC., the Bidder making the Bid for City of Chandler, **Reclaimed Water Pipe Extension – Germann Road and Hamilton Street, City Project No. WW2206.404** and that I executed the said Bid with full authority so to do; that said Bidder has not, directly or indirectly entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free, competitive bidding in connection with the above named Project; and that all statements contained in said Bid and in this affidavit are true and correct, and made with full knowledge that the City of Chandler relies upon the truth of the statements contained in said Bid and in the statements contained in this affidavit in awarding the Contract for the said Project.

I further warrant that no person or selling agency has been employed or retained to solicit or secure such Contract upon an agreement of understanding, for a commission, percentage, brokerage or contingent fee, except bonafide employees or bonafide established commercial or selling agencies maintained by:

(Signature of Bidder)

Stephen Bacon
(Printed or Typed Name of Bidder)

Sworn to before me this 22nd day of April, 20 25, in the County of

Maricopa, State of Arizona.

DYLAN CARTER
Notary Public
Commission Number 625410
Expires: March 29, 2026
Maricopa County

(Notary Public)

Docusign Envelope ID: 4892B4B0-D834-4BFD-BC27-BAA8C2BD00BC

CERTIFICATE OF INSURABILITY AND BONDING

I hereby certify that as Bidder to City of Chandler **Reclaimed Water Pipe Extension – Germann Road and Hamilton Street, City Project No. WW2206.404**, I am fully aware of the City of Chandler's Insurance and Bonding Requirements for Contractors and that by the submission of this Bid Proposal, assure the City of Chandler that I am able to produce the insurance and bonding coverage required should I be selected to be the successful bidder.

Should I be selected to be the successful bidder by the City of Chandler, and then become unable to produce the insurance and bonding coverage specified within ten working days I am fully aware and understand that my Bid Proposal will be rejected by the City of Chandler, and that I will forfeit my posted Bid Bond.

Stephen Bacon
Signature of Bidder

VP of Construction
Title

4/22/25
Date

Docusign Envelope ID: 4892B4B0-D834-4BFD-BC27-BAA8C2BD00BC

P.O. Box 712 • Des Moines, Iowa 50306-0712

emc INSURANCE

POWER OF ATTORNEY APPOINTING INDIVIDUAL ATTORNEY-IN-FACT

KNOW ALL MEN BY THESE PRESENTS, that:

1. Employers Mutual Casualty Company, an Iowa Corporation
2. EMCASCO Insurance Company, an Iowa Corporation
3. Union Insurance Company of Providence, an Iowa Corporation
4. Illinois EMCASCO Insurance Company, an Iowa Corporation
5. Dakota Fire Insurance Company, a North Dakota Corporation
6. EMC Property & Casualty Company, an Iowa Corporation

hereinafter referred to severally as "Company" and collectively as "Companies", each does, by these presents, make, constitute and appoint:

Debbie Clayton

its true and lawful attorney-in-fact, with full power and authority conferred to sign, seal, and execute the Bid Bond

Any and All Bonds

and to bind each Company thereby as fully and to the same extent as if such instruments were signed by the duly authorized officers of each such Company, and all of the acts of said attorney pursuant to the authority hereby given are hereby ratified and confirmed.

AUTHORITY FOR POWER OF ATTORNEY

This Power-of-Attorney is made and executed pursuant to and by the authority of the following resolution of the Boards of Directors of each of the Companies at the first regularly scheduled meeting of each company duly called and held in 1999:

RESOLVED: The President and Chief Executive Officer, any Vice President, the Treasurer and the Secretary of Employers Mutual Casualty Company shall have power and authority to (1) appoint attorneys-in-fact and authorize them to execute on behalf of each Company and attach the seal of the Company thereto, bonds and undertakings, recognizances, contracts of indemnity and other writings obligatory in the nature thereof; and (2) to remove any such attorney-in-fact at any time and revoke the power and authority given to him or her. Attorneys-in-fact shall have power and authority, subject to the terms and limitations of the power-of-attorney issued to them, to execute and deliver on behalf of the Company, and to attach the seal of the Company thereto, bonds and undertakings, recognizances, contracts of indemnity and other writings obligatory in the nature thereof, and any such instrument executed by any such attorney-in-fact shall be fully and in all respects binding upon the Company. Certification as to the validity of any power-of-attorney authorized herein made by an officer of Employers Mutual Casualty Company shall be fully and in all respects binding upon this Company. The facsimile or mechanically reproduced signature of such officer, whether made heretofore or hereafter, wherever appearing upon a certified copy of any power-of-attorney of the Company, shall be valid and binding upon the Company with the same force and effect as though manually affixed.

IN WITNESS THEREOF, the Companies have caused these presents to be signed for each by their officers as shown, and the Corporate seals to be hereto affixed this 22nd day of September , 2022 .

Seals

ILLINOIS EMCASCO INSURANCE COMPANY CORPORATE SEAL IOWA

UNION INSURANCE COMPANY OF PROVIDENCE INCORPORATED 1863 IOWA

EMC PROPERTY & CASUALTY CO. INCORPORATED 1953 IOWA

EMCASCO INSURANCE COMPANY CORPORATE SEAL IOWA

DAKOTA FIRE INSURANCE COMPANY CORPORATE SEAL NORTH DAKOTA

EMPLOYERS MUTUAL CASUALTY CO. CORPORATE SEAL DES MOINES, IOWA

KATHY LOVERIDGE
Commission Number 780769
My Commission Expires
October 10, 2025

Scott R. Jean, President & CEO
of Company 1; Chairman, President
& CEO of Companies 2, 3, 4, 5 & 6

Todd Strother, Executive Vice President
Chief Legal Officer & Secretary of
Companies 1, 2, 3, 4, 5 & 6

On this 22nd day of September , 2022 before me a Notary Public in and for the State of Iowa, personally appeared Scott R. Jean and Todd Strother, who, being by me duly sworn, did say that they are, and are known to me to be the CEO, Chairman, President, Executive Vice President, Chief Legal Officer and/or Secretary, respectively, of each of the Companies above; that the seals affixed to this instrument are the seals of said corporations; that said instrument was signed and sealed on behalf of each of the Companies by authority of their respective Boards of Directors; and that the said Scott R. Jean and Todd Strother, as such officers, acknowledged the execution of said instrument to be their voluntary act and deed, and the voluntary act and deed of each of the Companies.

My Commission Expires October 10, 2025.

Kathy Loveridge
Notary Public in and for the State of Iowa

CERTIFICATE

I, Ryan J. Springer, Vice President of the Companies, do hereby certify that the foregoing resolution of the Boards of Directors by each of the Companies, and this Power of Attorney issued pursuant thereto on 22nd day of September , 2022 , are true and correct and are still in full force and effect.

In Testimony Whereof I have subscribed my name and affixed the facsimile seal of each Company this 22nd day of April , 2025 .

Ryan J. Springer Vice President

"For verification of the authenticity of the Power of Attorney you may call (515) 345-7548."

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ARIZONA DEPARTMENT OF REVENUE
PRIVILEGE TAX LICENSE

PROJECT NAME: Reclaimed Water Pipe Extension – Germann Road and Hamilton Street

PROJECT NUMBER: WW2206.404

ATTACH, TO THIS FORM, CURRENT PRIVILEGE TAX LICENSE CERTIFICATE.

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ARIZONA DEPARTMENT OF REVENUE
ATTN: Customer Care and Outreach
PO BOX 29032
Phoenix, AZ 85038-9032

ARIZONA DEPARTMENT OF REVENUE

TRANSACTION PRIVILEGE TAX LICENSE
NOT TRANSFERABLE

The licensee listed below is licensed to conduct business upon the condition that taxes are paid to Arizona Department of Revenue as required under provisions of A.R.S. Title 42, Chapter 5, Article 1.

2025

ISSUED TO: ARROWMARK LLC
1620 S STAPLEY DR #118
MESA AZ 85204-6634

ALL communications and reports MUST REFER to this LICENSE NO.

LICENSE: 21505840
START DATE: 04/01/2023
ISSUED: 01/03/2025
EXPIRES: 12/31/2025

LOCATION: CODE 001
ARROWMARK LLC
2425 N CENTER ST
MESA, AZ 85201
2500069247807

BUSINESS CODE	REGION	JURISDICTION
015 - CONTRACTING - PRIME	MAR - MARICOPA	COUNTY
029 - USE TAX	MAR - MARICOPA	COUNTY
015 - CONTRACTING - PRIME	PMA - PIMA	COUNTY
015 - CONTRACTING - PRIME	PNL - PINAL	COUNTY
015 - CONTRACTING - PRIME	YAV - YAVAPAI	COUNTY
015 - CONTRACTING - PRIME	YMA - YUMA	COUNTY
015 - CONTRACTING - PRIME	AJ - APACHE JUNCTION	CITY
029 - USE TAX	AJ - APACHE JUNCTION	CITY
015 - CONTRACTING - PRIME	AV - AVONDALE	CITY
029 - USE TAX	AV - AVONDALE	CITY
015 - CONTRACTING - PRIME	BE - BUCKEYE	CITY
029 - USE TAX	BE - BUCKEYE	CITY
015 - CONTRACTING - PRIME	CA - CAREFREE	CITY
029 - USE TAX	CA - CAREFREE	CITY
015 - CONTRACTING - PRIME	CG - CASA GRANDE	CITY
015 - CONTRACTING - PRIME	CH - CHANDLER	CITY
029 - USE TAX	CH - CHANDLER	CITY
015 - CONTRACTING - PRIME	CK - CAVE CREEK	CITY
029 - USE TAX	CK - CAVE CREEK	CITY
015 - CONTRACTING - PRIME	CL - COOLIDGE	CITY
029 - USE TAX	CL - COOLIDGE	CITY
015 - CONTRACTING - PRIME	CV - CHINO VALLEY	CITY

This License is issued to the business named above for the address shown. Licenses, by law, cannot be transferred from one person to another, nor can they be transferred from one location to another. Arizona law requires licensees to notify the Department of Revenue if there is a change in business name, trade name, location, mailing address, or ownership. In addition, when the business ceases to operate or the business location changes and a new license is issued, this license must be returned to the Arizona Department of Revenue. According to R15-5-2201, license must be displayed in a conspicuous place.

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LICENSE: 21505840

BUSINESS CODE	REGION	JURISDICTION
015 - CONTRACTING - PRIME	EL - ELOY	CITY
029 - USE TAX	EL - ELOY	CITY
015 - CONTRACTING - PRIME	EM - EL MIRAGE	CITY
029 - USE TAX	EM - EL MIRAGE	CITY
015 - CONTRACTING - PRIME	FH - FOUNTAIN HILLS	CITY
029 - USE TAX	FH - FOUNTAIN HILLS	CITY
015 - CONTRACTING - PRIME	FL - FLORENCE	CITY
029 - USE TAX	FL - FLORENCE	CITY
015 - CONTRACTING - PRIME	FS - FLAGSTAFF	CITY
029 - USE TAX	FS - FLAGSTAFF	CITY
015 - CONTRACTING - PRIME	GB - GILBERT	CITY
015 - CONTRACTING - PRIME	GE - GLENDALE	CITY
029 - USE TAX	GE - GLENDALE	CITY
015 - CONTRACTING - PRIME	GI - GILA BEND	CITY
029 - USE TAX	GI - GILA BEND	CITY
015 - CONTRACTING - PRIME	GL - GLOBE	CITY
029 - USE TAX	GL - GLOBE	CITY
015 - CONTRACTING - PRIME	GU - GUADALUPE	CITY
029 - USE TAX	GU - GUADALUPE	CITY
015 - CONTRACTING - PRIME	GY - GOODYEAR	CITY
029 - USE TAX	GY - GOODYEAR	CITY
015 - CONTRACTING - PRIME	LP - LITCHFIELD PARK	CITY
029 - USE TAX	LP - LITCHFIELD PARK	CITY
015 - CONTRACTING - PRIME	MA - MARANA	CITY
029 - USE TAX	MA - MARANA	CITY
015 - CONTRACTING - PRIME	ME - MESA	CITY
029 - USE TAX	ME - MESA	CITY
015 - CONTRACTING - PRIME	MM - MIAMI	CITY
029 - USE TAX	MM - MIAMI	CITY
015 - CONTRACTING - PRIME	MP - MARICOPA	CITY
029 - USE TAX	MP - MARICOPA	CITY
015 - CONTRACTING - PRIME	PE - PEORIA	CITY
029 - USE TAX	PE - PEORIA	CITY
015 - CONTRACTING - PRIME	PL - PRESCOTT VALLEY	CITY
015 - CONTRACTING - PRIME	PR - PRESCOTT	CITY
029 - USE TAX	PR - PRESCOTT	CITY
015 - CONTRACTING - PRIME	PS - PAYSON	CITY
015 - CONTRACTING - PRIME	PV - PARADISE VALLEY	CITY
029 - USE TAX	PV - PARADISE VALLEY	CITY
015 - CONTRACTING - PRIME	PX - PHOENIX	CITY
029 - USE TAX	PX - PHOENIX	CITY
015 - CONTRACTING - PRIME	QC - QUEEN CREEK	CITY
029 - USE TAX	QC - QUEEN CREEK	CITY
015 - CONTRACTING - PRIME	SC - SCOTTSDALE	CITY
029 - USE TAX	SC - SCOTTSDALE	CITY
015 - CONTRACTING - PRIME	SE - SEDONA	CITY
029 - USE TAX	SE - SEDONA	CITY

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LICENSE: 21505840

BUSINESS CODE	REGION	JURISDICTION
015 - CONTRACTING - PRIME	SF - SAFFORD	CITY
029 - USE TAX	SF - SAFFORD	CITY
015 - CONTRACTING - PRIME	SI - SUPERIOR	CITY
015 - CONTRACTING - PRIME	SL - SHOW LOW	CITY
015 - CONTRACTING - PRIME	SP - SURPRISE	CITY
029 - USE TAX	SP - SURPRISE	CITY
015 - CONTRACTING - PRIME	TE - TEMPE	CITY
029 - USE TAX	TE - TEMPE	CITY
015 - CONTRACTING - PRIME	TN - TOLLESON	CITY
029 - USE TAX	TN - TOLLESON	CITY
015 - CONTRACTING - PRIME	TU - TUCSON	CITY
029 - USE TAX	TU - TUCSON	CITY
015 - CONTRACTING - PRIME	WB - WICKENBURG	CITY
015 - CONTRACTING - PRIME	YM - YUMA	CITY
015 - CONTRACTING - PRIME	YT - YOUNGTOWN	CITY

GREAT SEAL OF THE STATE OF ARIZONA
DITAT DEUS
1912

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CITY OF CHANDLER, ARIZONA
PUBLIC WORKS & UTILITIES DEPARTMENT
CAPITAL PROJECTS DIVISION

CONSTRUCTION AGREEMENT

RECLAIMED WATER PIPE EXTENSION – GERMANN ROAD AND HAMILTON STREET

CITY PROJECT NO.: WW2206.404

MAYOR
Kevin Hartke

VICE MAYOR
Christine Ellis

COUNCIL
OD Harris Matt Orlando
Angel Encinas Jane Poston Jennifer Hawkins

Daniel Haskins

Daniel Haskins, P.E.
CIP City Engineer

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CITY OF CHANDLER, ARIZONA

RECLAIMED WATER PIPE EXTENSION – GERMANN ROAD AND HAMILTON STREET

CITY PROJECT NO.: WW2206.404

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CONSTRUCTION SERVICES AGREEMENT
PROJECT NO.: WW2206.404

This Agreement ("Agreement") is made and entered into on the ____ day of _____, 2025, by and between City of Chandler, an Arizona municipal corporation, hereinafter called "City" and Arrowmark, LLC the "Contractor" designated below (City and Contractor may individually be referred to as "Party" and collectively referred to as "Parties").

City and Contractor agree as follows:

ARTICLE 1 - PARTICIPANTS AND PROJECT

CITY:	CIP City Engineer: Daniel Haskins, P.E. Public Works & Utilities Department P.O. Box 4008, Mail Stop 407 Chandler, AZ 85244-4008 Phone: 480-782-3335 Email: Daniel.Haskins@chandleraz.gov	
CITY:	Construction Project Manager: Adam Kleiser Public Works & Utilities Department P.O. Box 4008, Mail Stop 407 Chandler, AZ 85244-4008 Phone: 480-782-3325 Email: Adam.Kleiser@chandleraz.gov	
Contractor:	Legal Company Name:	Arrowmark, LLC
	Mailing Address:	1620 South Stapley Drive, Suite 118 Mesa, AZ 85204
	Physical Address:	1620 South Stapley Drive, Suite 118 Mesa, AZ 85204
	Arizona Roc No.:	ROC 347447 A
	Federal Tax Id No.:	33-1885924
	State Where Organized:	Arizona
	Business Organization:	LLC
	Statutory Agent Name:	Incorp Services, Inc
	Statutory Agent Mailing Address:	8825 North 23rd Avenue, Suite 100, Phoenix, AZ 85021
	Statutory Agent Physical Address:	8825 North 23rd Avenue, Suite 100, Phoenix, AZ 85021

Contractor's Authorized Project Representative:		
	Name:	Stephen Bacon
	Title:	VP of Business Development
	Phone:	(623)521-0692
	Email:	Stephen.Bacon@teamarrowmark.com

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PROJECT DESCRIPTION:

Work under this Agreement includes the installation of approximately 200 linear feet of 24-inch ductile iron pipe (DIP) reclaimed waterline at the southeast corner of Hamilton Street and Germann Road, connecting to the existing 12-inch reclaimed waterline along Germann Road.

PROJECT LOCATION:

German Road and Pioneer Parkway (Tumbleweed Park)

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ARTICLE 2 - AGREEMENT DOCUMENTS

2.1 AGREEMENT DOCUMENTS

The Agreement between City and Contractor will consist of the following Agreement Documents:

1. This Construction Services Agreement and all of its Exhibits, including Project Plans and Technical Specifications.
2. General Conditions and General Conditions Appendices, incorporated by reference.
3. Project Specific Special Provisions as set forth in Exhibit A, incorporated by reference.
4. Project Bid Proposal.

2.2 In the event of any inconsistency, conflict, or ambiguity between or among the Agreement Documents, the Agreement Documents will take precedence as described in Section 14.1.4 of the General Conditions.

2.3 DEFINITIONS

The definitions in Section 2 of the General Conditions apply to all the Agreement Documents, including this Agreement.

ARTICLE 3 - CONSTRUCTION SERVICES

3.1 GENERAL

3.1.1 Scope of Work. All terms and conditions are set forth in the Agreement. Any terms and conditions and exceptions noted in the Contractor's proposal or other documents do not apply unless agreed to in this Agreement or an approved addendum.

3.1.2 Contractor agrees this is a Unit Price Agreement. Contractor agrees at its own cost and expense, to do all Work necessary required to fully, timely and properly complete the construction of the Project in strict accordance with the Agreement Documents in a good and workmanlike manner, free and clear of all claims, liens, and charges whatsoever, in the manner and under the conditions specified, within the Agreement time.

3.1.3 Contractor must provide all of the labor and materials, and perform the Work in accordance with Section 4 of the General Conditions. Some, but not all, of the major components of the Construction Services and the corresponding subsections of Section 4 of the General Conditions are set forth below.

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3.1.4 At all times relevant to this Agreement and performance of the Work, the Contactor must fully comply with all Laws, Regulations, or Legal Requirements applicable to City, the Project and the Agreement, including, without limitation, those set forth on attached Exhibit A.

3.1.5 Contractor must perform the Work under this Agreement using only those firms, team members and individuals designated by Contractor consistent with Contractor's accepted Bid, or otherwise, approved by City pursuant to the General Conditions. No other entities or individuals may be used without the prior written approval of the Project Manager.

3.1.6 Contractor must comply with all terms and conditions of the General Conditions.

3.1.7 In the event of a conflict between this Agreement and the General Conditions or an exhibit hereto or appendix thereto, the terms of this Agreement will control.

3.1.8 Ownership of Work Product. Notwithstanding anything to the contrary in this Agreement, all Work Product prepared or otherwise created in connection with the performance of this Agreement, including the Work, are to be and remain the property of City. For purposes of this provision, "Work Product" will include all designs, drawings, plans, specifications, ideas, renderings and other information or matter, in whatever form created (e.g., electronic or printed) and in all media now known or hereinafter created. All Work Product will be considered Work Made for Hire as defined in the United States Copyright Act 17 U.S.C. § 101 (Copyright Act). If for any reason, any such Work is found not to be a Work Made for Hire, Contractor hereby transfers and assigns ownership of the copyright in such Work to City. The rights in this Section are exclusive to City in perpetuity.

3.2 CONTRACTOR'S PRE-AGREEMENT AND PRE-WORK DELIVERABLES

3.2.1 The Contractor must provide the Deliverables in accordance with Section 4.2 of the General Conditions.

3.3 PRE-CONSTRUCTION CONFERENCE

Contractor must attend the Pre-Construction Conference in accordance with Section 4.3 of the General Conditions.

3.4 PERFORMANCE OF THE WORK (INCLUDING FIELD MEASUREMENTS, SUBCONTRACTORS, AND SUPPLIERS)

Contractor must perform the Work in accordance with Section 4.4 of the General Conditions.

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3.5 **CONTROL OF THE PROJECT SITE**

Contractor must control and maintain the Project Site in accordance with Section 4.5 of the General Conditions.

3.6 **PROJECT SAFETY**

Contractor must implement and enforce Project safety in accordance with Section 4.6 of the General Conditions.

3.7 **MATERIALS QUALITY, SUBSTITUTIONS AND SHOP DRAWINGS**

Contractor must provide materials testing and submit substitute materials and Shop Drawings in accordance with Section 4.7 of the General Conditions.

3.8 **PROJECT RECORD DOCUMENTS**

Contractor must maintain and make available the Project Record Documents in accordance with Section 4.8 of the General Conditions.

3.9 **WARRANTY AND CORRECTION OF DEFECTIVE WORK**

Contractor must provide warranties and correct defective Work in accordance with Section 4.9 of the General Conditions.

ARTICLE 4 - CITY RESPONSIBILITIES

4.1 City will have the responsibilities, and provide the information specified in, and subject to the conditions set forth in, Section 5 of the General Conditions.

ARTICLE 5 - AGREEMENT TIME

5.1 **GENERAL**

5.1.1 The total Agreement Duration is 150 Calendar Days (including Substantial Completion by 120 Calendars Days and Final Acceptance by 150 Calendar Days).

5.1.2 The Agreement Time will start with the Notice to Proceed (NTP) and end with Final Acceptance, as set forth in Article 5.4 below.

5.1.3 The Agreement Time will be as set forth in the Project Schedule. Contractor agrees that it will commence performance of the Work and complete the Project through Final Acceptance within the Agreement Time.

5.1.4 Time is of the essence of this Agreement for the Project, and for each phase and designated Milestone thereof.

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5.1.5 Failure on the part of Contractor to adhere to the approved Project Schedule will be deemed a material breach and sufficient grounds for termination of this Agreement by City.

5.2 PROJECT SCHEDULE

5.2.1 The Project Schedule will be updated and maintained throughout Contractor's performance under this Agreement in accordance with Section 6.2 of the General Conditions.

5.2.2 Work must be completed to meet the following milestones after the Notice to Proceed:

	Milestone		Time	Liquidated damages for delay	
1.		within	days	$	per calendar day

5.3 SUBSTANTIAL COMPLETION

Substantial Completion must be achieved no later than the Substantial Completion Date set forth in the Project Schedule. Substantial Completion will be determined in accordance with Section 6.3 of the General Conditions.

5.4 FINAL ACCEPTANCE

5.4.1 Final Acceptance will be obtained within the time period set forth in the Project Schedule.

5.4.2 Final Acceptance will be issued pursuant to Section 6.5 of the General Conditions.

5.5 LIQUIDATED DAMAGES

5.5.1 Substantial Completion Liquidated Damages. Contractor acknowledges and agrees that if Contractor fails to obtain Substantial Completion of the Work within the Agreement Time, City will sustain extensive damages and serious loss as a result of such failure. The exact amount of such damages will be extremely difficult to ascertain. Therefore, City and Contractor agree that if Contractor fails to achieve Substantial Completion of the Work within the Agreement Time, City will be entitled to retain or recover from Contractor, as liquidated damages and not as a penalty, the sum per calendar day as indicated in MAG § 108.9.

5.5.2 Final Acceptance Liquidated Damages. For the same reasons set forth in Article 5.5.1 above, City and Contractor further agree that if Contractor fails to achieve Final Acceptance of the Work within the Agreement Time, City will be entitled to retain or recover from Contractor, as liquidated damages and not as a penalty, the sum per

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calendar day as indicated in MAG § 108.9 commencing from the actual date of Substantial Completion or Final Acceptance as required under the Agreement.

5.5.3 MAG Liquidated Damages. Liquidated damages provisions in MAG § 108.9 will apply.

5.5.4 City may deduct liquidated damages described in this Article 5.5 from any unpaid amounts then or thereafter due Contractor under this Agreement. Any liquidated damages not so deducted from any unpaid amounts due Contractor will be payable to City at the demand of City, together with interest from the date of the demand at the highest lawful rate of interest payable by Contractor.

5.6 MUTUAL WAIVER OF CONSEQUENTIAL DAMAGES ONLY

5.6.1 Contractor and City waive claims against each other for consequential damages arising out of or relating to this Agreement. This mutual waiver includes.

1. Damages incurred by City for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and

2. Damages incurred by Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit except anticipated profit arising directly from the Work.

5.6.2 This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination of this Agreement. Nothing contained in this Article 5.6 will be deemed to preclude an award of liquidated damages, when applicable, in accordance with Article 5.5 above.

5.6.3 Nothing herein will be deemed to constitute a waiver of any other remedy available to City in the event of Contractor's default under this Agreement prior to full performance of the Work including, as applicable, specific performance or completion of the Work on behalf of Contractor, the cost and expense of which will be offset against any monies then or thereafter due to Contractor (if any) and otherwise immediately reimbursed to City by Contractor.

ARTICLE 6 - AGREEMENT PRICE

6.1 AGREEMENT PRICE

6.1.1 In exchange for Contractor's full, timely, and acceptable performances and construction of the Work under this Agreement, and subject to all of the terms of this Agreement, City will pay Contractor the "Agreement Price," which is $835,000.

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6.1.2 The Agreement Price is all-inclusive and specifically includes all fees, cost, insurance and bond premiums, and taxes of any type necessary to fully, properly and timely perform and construct Work.

6.2 **CHANGES TO AGREEMENT PRICE**
Shall be determined under Section 9 of the General Conditions.

ARTICLE 7 - PAYMENT

Payments will be made to Contractor in accordance with Section 8 of the General Conditions.

ARTICLE 8 - CHANGES TO THE AGREEMENT

Changes to the Agreement may be made in strict accordance with Section 9 of the General Conditions.

ARTICLE 9 - SUSPENSION AND TERMINATION

This Agreement may be suspended or terminated in accordance with Section 10 of the General Conditions.

ARTICLE 10 - INSURANCE AND BONDS

10.1 Contractor must provide insurance in accordance with Sections 11.1 through 11.3 of the General Conditions. Contractor must provide proof of such insurance and all required endorsements in forms acceptable to City prior to commencing any Work under this Agreement.

10.2 Contractor must provide performance and payment bonds to City in Accordance with Section 11.4 of the General Conditions and A.R.S. § 34-222.

10.3 Failure to provide proof of insurance and the required endorsements, or the required bonds, in forms acceptable to City, will be a material breach and grounds for termination for cause of this Agreement.

ARTICLE 11 - INDEMNIFICATION

Contractor must have and assume the indemnity obligations set forth in Section 12 of the General Conditions.

ARTICLE 12 - DISPUTE RESOLUTION

Any claims or disputes relating to this Agreement will be resolved according to the dispute resolution process set forth in Section 13 of, and Appendix 6 to, the General Conditions.

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ARTICLE 13 - FORCED LABOR OF ETHNIC UYGHURS PROHIBITED

By entering into this Agreement, Contractor certifies and agrees Contractor does not currently use and will not use for the term of this Agreement: (i) the forced labor of ethnic Uyghurs in the People's Republic of China; or (ii) any goods or services produced by the forced labor of ethnic Uyghurs in the People's Republic of China; or (iii) any contractors, subcontractors or suppliers that use the forced labor or any goods or services produced by the forced labor of ethnic Uyghurs in the People's Republic of China.

SIGNATURE PAGE TO FOLLOW

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IN WITNESS WHEREOF, the Parties hereto have executed this Agreement through their duly authorized representatives and bind their respective entitles as of the effective date.

"CITY"
CITY OF CHANDLER

MAYOR

RECOMMENDED BY:

Daniel Haskins May 12, 2025
Daniel Haskins, P.E.
CIP City Engineer

APPROVED AS TO FORM:

City Attorney JMB

ATTEST:

City Clerk Seal

"CONTRACTOR"
ARROWMARK, LLC.

Stephen Bacon May 12, 2025
Signature Date

Stephen Bacon
Print Name

VP of Business Development
Title

stephen.bacon@teamarrowmark.com
Signer Email Address

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EXHIBIT A

PROJECT SPECIFIC
SPECIAL PROVISIONS

4.2.7 Aerial Construction Photography

General Conditions Section 4 Subsections 4.2.7.1 & 4.2.7.2 are not applicable to this project.

4.2.8 Government Approvals and Permits

General Conditions Section 4 Subsection 4.2.8.1, City permit fees will be paid internally by the City and all other fees will be the responsibility of the Contractor.

Subletting of Agreement

Contractor must perform, with his own organization, work amounting to not less than 50 percent of the total Agreement cost.

Failure to submit Subcontractor's List Form, demonstrating self-performance not less than 50 percent of the total Agreement cost, will cause the bid to be deemed non-responsive.

Bidders should contact the Arizona Registrar of Contractors for information on license requirements.

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EXHIBIT B

GENERAL CONDITIONS

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CHANDLER arizona
Community of Innovation

GENERAL CONDITIONS

Approved date: July 20, 2022

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SECTION 1 - SCOPE OF THESE GENERAL CONDITIONS

These General Conditions encompass provisions that apply, and are incorporated into all construction Agreements entered into by the City of Chandler, unless otherwise specifically excluded in the executed Agreement.

SECTION 2 - GENERAL DEFINITIONS

Allowance: A specific amount for a specific item of Work, if any, that City agrees has not been sufficiently designed, detailed, or selected (including design changes from 90% to 100% as authorized by and at the discretion of the City) at the time the Agreement Price is agreed to for Contractor to provide a definitive price.

Alternate Systems Evaluations or Alternative Analysis: Alternatives for design, means and methods or other scope considerations that are evaluated using value analysis principles and have the potential to reduce construction costs while still delivering a quality and functional Project that meets City requirements.

Change Order: A written instrument issued after execution of the Agreement Documents signed by City and Contractor, stating their agreement upon all of the following: the addition, deletion or revision in the scope of services or deliverables; the amount of the adjustment to the Agreement Price, the extent of the adjustment to the Agreement Time, or modifications of other agreement terms. The Agreement Price and the Agreement Time may be changed only by Change Order.

Consultant: Person or firm that provides professional services.

City (Owner or OWNER): City of Chandler, a municipal corporation, with whom Contractor has entered into the Agreement and for whom the Work or Services are to be provided pursuant to the Agreement(s).

Contingent Bid Items: This is a minor bid item which is likely, but not certain, to occur during the course of work. If the Engineer determines that this work is required, the Contractor will accomplish the work and payment will be made based on the contingent unit bid price included in the proposal. Since the quantity listed in the proposal is primarily for bid comparison, the amount of work required by the Engineer may vary materially from this.

Agreement: The written agreement executed between City and Contractor, including all of the Agreement Documents.

Agreement Documents: The documents which together form the Agreement between City and Contractor, as identified in Article 2 of the Agreement, or are otherwise incorporated into the Agreement, including the Agreement, the exhibits thereto, these General Conditions, any Notice to Proceed, and any Job Order (if applicable), the Plans and Specifications, Project Schedule, written and properly executed Change Orders, MAG Specifications and City's amendments thereto, and any other documents so designated in the Agreement.

Agreement Price: The agreed-upon price to be paid to Contractor for full, timely, and acceptable completion of the Work or Services under the terms of the Agreement.

Agreement Time(s): The number of calendar days or the dates related to the applicable phase, Substantial Completion, or Final Acceptance as stated in Agreement Documents. Agreement Time starts

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with the Notice to Proceed (NTP) and ends with Final Acceptance. The Agreement Time is set forth in the Agreement and is based upon the Project Schedule agreed to by City in writing.

Contractor: The person or business association with whom City has entered into an agreement for construction related Work or Services in relation to the Project at issue.

Contractor Payment Request: The form that is accepted by City and used by Contractor in requesting progress payments or final payment and which must include such supporting documentation as is required by the Agreement Documents or City.

Construction Budget: The City's budget for construction of the Project.

Construction Documents: The Plans, Specifications, and Drawings prepared and issued by the Design Professional and approved by City for construction, meaning the documents are sealed by the Design Professional (as required), acceptable for permitting and incorporated into the Agreement by this reference. All amendments and modifications to the Construction Documents must be approved in writing by City prior to incorporation into the Agreement.

Cost of the Work: The term Cost of the Work will mean costs necessarily incurred by Contractor in the proper performance of the Work. Such costs will be at rates not higher than the standard paid at the place of the Project except with prior consent of City.

Critical Path Method (CPM): A scheduling technique which identifies the logical sequence of the activities occurring in a Construction Project, the anticipated time required to complete each activity in the Project, and the activities that must be completed on schedule to finish the Project within the anticipated time. Typically, activities are arranged in a network that shows both activities and their dependencies. CPM is also used as a management technique which enables contracting parties to predict when activities may occur so that resources can be effectively used and limitations can be identified.

Critical Path: Critical Path is the sequence of project network activities which add up to the longest overall duration. Once established in the Project Schedule, the Critical Path for the Project must not be changed without prior written approval of City.

Day: Calendar day(s) unless otherwise specifically stated in the Agreement Documents.

Design Professional: The qualified, licensed person, firm or corporation who furnishes design and construction administration services required under the Agreement Documents. These services may include, but are not limited to: development of Construction Drawings and Documents, review of Contractor Submittal(s), review of and response to Requests for Information, approval and certification of progress payment applications, construction administration, and construction agreement close out.

Differing Site Conditions: Concealed or latent physical conditions or subsurface conditions at the Site that, (i) materially differ from the conditions indicated in the Agreement Documents, or (ii) are of an unusual nature, differing materially from the conditions ordinarily encountered and generally recognized as inherent in the Work at the general area of the Site. Caliche, rock, hard-digging or sandy/silty soil encountered on a project is not considered a "Differing Site Condition."

Drawings (Plans): Documents, which visually represent the scope, extent and character of the Work to be furnished and performed by Contractor during the construction phase and which have been prepared

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or approved by the Design Professional and City. These documents include Drawings that have reached a sufficient state of completion and released by Design Professional solely for the purposes of review and use in performing constructability or bid-ability reviews by Contractor and in preparing cost estimates (e.g. Master Planning and Programming, Schematic Design, Design Development, and Construction Drawings), but *"not for construction*." Shop Drawings are not Drawings as so defined.

Final Acceptance: The City's acceptance of the facility or project from the Contractor after all Work is completed, tested, and inspected in accordance with the Agreement requirements. Final Acceptance results in a Letter of Acceptance (LOA).

Fixed Price: A fixed price or amount for an Agreement Price, Scope of Work, materials, or other item under an Agreement, Change Order, or other agreement, which City agrees, in writing, to pay instead of the actual cost.

Float: The number of Days by which an activity can be delayed without lengthening the Critical Path and extending the Agreement Time. Unless otherwise expressly agreed in writing, all Float belongs to City.

Laws, Regulations, or Legal Requirements: Any and all applicable laws, rules, regulations, ordinances, codes and orders applicable to the Project of any and all governmental bodies, agencies, authorities and courts having jurisdiction and any applicable provisions of the Development Agreement for the Project (if any), including, without limitation, those provisions relating to the design and construction of the Project.

Line Item: The individual elements of Work identified on a bid or other schedule and associated with a price or a unit price and quantity particular to that individual element of the Work. Also refers to individual items of work within the Schedule of Values.

Liquidated Damages: Designated damages for the City to collect as compensation upon a specific breach (example: late delivery).

Long-Lead Item: Long-lead item refers to the equipment, product, or system that is identified at the earliest stage of a project to have a delivery time long enough to affect directly the Critical Path/the overall lead time of the project.

MAG: The Maricopa Association of Governments.

MAG Specifications: The most current version of the Uniform Standard Specifications for Public Works Construction published by MAG.

MAG Standard Details: The most current version of the Uniform Standard Details as published by MAG.

Minor change: A change in the Work having no impact on cost or time or the City-approved design intent, as determined by City.

Notice to Proceed (NTP): A written notice given by City to Contractor fixing the date on which Contractor will start to perform Contractor's obligations under the Agreement.

Project: The Project specified in the Agreement (including a Job Order).

Project Manager: The Project Manager designated in Article 1 of the Agreement, or any successor thereto

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designated by City. The Project Manager has the authority to act on behalf of City, as delineated and limited by the Agreement Documents and applicable law. And City will communicate with Contractor through the Project Manager. However, the Project Manager has no authority to bind City or City Council in contravention of any City code, State or Federal statute or regulation, or these General Conditions.

Project Schedule: The schedule for the completion of the Project agreed to and required by City.

Project Specific Conditions: Additional conditions which apply to the specific Project and Scope of Work which are set forth in Exhibit D of the Agreement.

Project Team: The Project Team consisting of the Design Professional, Contractor, Project Manager, and such others as City may designate.

Punch List: The list initially prepared by Contractor pursuant to the Agreement Documents, reviewed and supplemented by the Project Manager (and at the sole option of the Project Manager, the Design Professional) and approved by City containing items of incomplete work not impacting Substantial Completion, if allowed for under the Agreement, and to be completed or corrected by Contractor after Substantial Completion and before Final Acceptance in accordance with the Agreement Documents.

Quality Assurance (QA) Testing: Testing performed to verify the accuracy and applicability of the QC testing results and to ascertain that the materials installed meet the specified levels of quality in accordance with the Agreement Documents.

Quality Control (QC) Testing: Testing performed to assure that the materials installed comply with the requirements in the Agreement Documents.

Requests for Information (RFIs): Formal written request from Contractor to City or Design Professional for the Project seeking clarification or additional information needed for Contractor to properly complete the Work or Services under the Agreement. City may require RFI's to be submitted on a specific form or in a specified format.

Schedule of Values (SOV): The specified document prepared by Contractor, and approved and accepted by City, which divides the Agreement Price into pay items, such that the sum of all pay items equals the Agreement Price for the construction phase Work, or for any portion of the Work having a separate specified Agreement Price.

Scope of Work: The scope of work agreed to or required by City and incorporated into the Agreement as Exhibit A.

Shop Drawings: All drawings, diagrams, schedules and other data specifically prepared for the Work by Contractor or a Subcontractor, Sub-subcontractor, manufacturer, supplier or distributor to illustrate some portion of the Work.

Site: The land or premises on which the Project is located.

Specifications: The part(s) of the Agreement Documents for the construction phase consisting of written technical descriptions of materials, equipment, construction systems, standards and workmanship as applied to the Work and certain administrative details applicable thereto. Where specified, the Project must be constructed using the current Uniform Standard Specifications and Details for Public Works

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Construction as furnished by the Maricopa Association of Governments, as amended by City.

Subconsultant: A person, firm or corporation having an Agreement with Consultant/Contractor to furnish services required as its independent professional associate or consultant with respect to the Project.

Subcontractor: An individual or firm having a direct Agreement with Contractor or any other individual or firm having an Agreement with the aforesaid contractors at any tier, who undertakes to perform a part of pre-construction services or construction phase Work at the Site for which Contractor is responsible. Subcontractors must be selected through the Subcontractor selection process described in the Agreement Documents, if any.

Substantial Completion: The date when the City determines that the Work (or separable units of Phases as provided in the Agreement Documents) is essentially and satisfactorily complete in accordance with the Agreement Documents such that the Project is ready for use by the City for its intended purpose, opening to the general public, full occupancy or use by City (including, without limitation, all separate units, or rooms, facilities, access, income-generating areas, and all areas serving the general public, as applicable, must be ready for full operation without material inconvenience or discomfort), including, to the extent applicable to the Work, the following: all materials, equipment, systems, controls, features, facilities, accessories, and similar elements are installed in the proper manner and in operating condition, inspected, and approved; surfaces have been painted; masonry and concrete cleaned with any sealer or other finish applied; utilities and systems connected and functioning; site work complete; permanent heating, ventilation, air conditioning, vertical transportation, and other systems properly operating with proper controls; lighting and electrical systems installed, operable and controlled; paving completed, signage installed, and other work as applicable, has been performed to a similar state of essential and satisfactory completion.

Supplier: A manufacturer, fabricator, distributor, or vendor having a direct Agreement with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the construction phase Work by Contractor or any Subcontractor.

Total Float: Number of Days by which pre-construction services or construction phase Work or any part of the same may be delayed without necessarily extending a pertinent Agreement Time or schedule milestone in the Project Schedule.

Work: The entire completion of construction or the various separately identifiable parts thereof, required to be furnished during the construction phase. Work includes and is the result of performing or furnishing labor and furnishing and incorporating materials, resources and equipment into the construction, and performing or furnishing services and documents as required by the Agreement Documents for the construction phase.

Writing: Typing, printing, photography and other modes of representing or reproducing words in a visible form, including email, and expressions.

SECTION 3 - STANDARD SPECIFICATIONS AND DETAILS

3.1 City operates under the latest revision of the MAG Specifications and MAG Standard Details as amended by City. City's current amendment to the MAG Specifications, part of the City's Unified Development Manual, may be found and downloaded from City's website at http://www.chandleraz.gov.

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3.2 Copies of the MAG Specifications and MAG Standard Details are available at the Maricopa Association of Governments office, 302 N. 1st Avenue, Suite 300, Phoenix, Arizona. They may also be downloaded from their website at: http://www.azmag.gov/Newsroom/Publications

3.3 The MAG Specifications and Standard Details and City's amendments thereto are incorporated into the Agreement by this reference.

SECTION 4 - CONTRACTOR'S RESPONSIBILITIES FOR CONSTRUCTION SERVICES

4.1 **GENERAL**

4.1.1 Contractor must construct the Work in accordance with the Agreement Documents and as outlined in Exhibit A of the Agreement to the satisfaction of City, exercising the degree of professional care, skill, diligence, quality and judgment that a professional construction manager engaged, experienced and specializing in the construction management of construction and facilities of similar scope, function, size, quality, complexity and detail in urban areas throughout the United States comparable to Chandler, Arizona would exercise at such time, under similar conditions. Contractor must, at all times, perform the Work in conformance with sound and generally accepted engineering principles and construction management and construction contracting practices.

4.1.2 If Contractor observes errors, discrepancies or omissions in the Agreement Documents, Contractor must promptly notify the Design Professional and City and request clarification. If Contractor, with the exercise of reasonable care, should have recognized such error, inconsistency, omission, or difference and fails to report it to City, and if Contractor proceeds with the Work affected by such observed errors, discrepancies or omissions, without receiving such clarifications, Contractor does so at its own risk and will be liable to City for damages resulting from proceeding without clarification.

4.1.3 Project Team and agents of each of them, testing agencies and governmental agencies with jurisdictional interests will be provided access to the Work at reasonable times for their observation, inspection, and testing. Contractor must provide proper and safe conditions for such access.

4.1.4 Contractor must comply with, and require all Subcontractors to comply with, the Arizona Contractors' license laws, including all requirements with respect to being duly registered and licensed.

4.1.5 Contractor must ensure that all employees performing any Work for which Contractor is responsible have a legal right to live and work in the United States. In addition, all compensation of any such employee must meet all applicable requirements of the Fair Labor Standards Act (FLSA) and Federal Minimum Wage laws.

4.1.6 Contractor must comply with the Immigration Reform and Control Act of 1986 (IRCA). Contractor understands and acknowledges the applicability of the IRCA activities. Contractor agrees to comply with the IRCA while performing their work and to permit City inspection of Contractor personnel records to verify such compliance.

4.1.7 Pursuant to MAG Specifications §§ 107.4, Contractor must report immediately any discovery of archeological ruins or artifacts. Excavation must stop immediately so that City can decide on the pertinent steps to follow such discovery.

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4.1.8 All property owners that may be affected by the proposed construction activities must be notified of the scope, duration of the construction activities and possible interference with their day-to-day activities by Contractor prior to start of construction. In addition, individual residential or commercial interferences, such as driveway restrictions, water outages, and all other Work adjacent to residence/business, require 48-hour notification in advance of specific adjoining Work. Notification may be through door hangers or other procedures approved by the City.

4.1.9 Access must be maintained to adjacent properties at all times during construction. Where property has more than one point of access, no more than one access will be restricted or closed at any one time. Access to adjacent private driveways will be maintained during all non-working hours.

4.1.10 Contractor must furnish and erect construction signs in accordance with Project Specifications. The signs must be professionally prepared and subject to approval by City, must be maintained by Contractor for the duration of the project, and must be removed by Contractor during the final project clean up.

4.1.11 The number of signs required, the size, shape, installation requirements and information to be included for construction signs is established on the detail sheet, provided, however, signs must be a minimum of 4 foot by 8 foot and must be installed so that the bottom of the sign is at least 4 foot above grade. No direct payment will be made for furnishing and erecting construction signs. The cost thereof must be included in other items for which direct payment is made. Sign locations will be determined by City.

4.1.12 All required construction signs must be installed by Contractor within 7 Days of Notice to Proceed.

4.1.13 The Work to be accomplished under these Agreement Documents has been designed for City by a Design Professional retained by City for this purpose. It is understood that normal construction Administration for the purpose of interpretation of the Agreement Documents is provided by City. Should any services of the Design Professional be required to assist in the corrections of errors or omissions by Contractor, or services of the Design Professional be required because of changes in structure or equipment where Contractor has requested approval of substitute methods or material, or any other items detailed herein below, those services will be provided by the Design Professional at the standard hourly rates previously negotiated with City and must be paid for by the Contractor.

4.1.14 Contractor must reimburse City for costs incurred by the Design Professional for additional services to the Project through no fault of City or the Design Professional including, but not limited to, the following conditions:

a. Additional Site visits, investigations, inspections, design work or reports by the Design Professional which are required due to damages to existing facilities or completed Work caused by the Contractor in his performance, Contractor's negligence, or Contractor's Work which is rejected as defective or as failing to conform to the Agreement Documents;

b. Design Professional construction phase services rendered on the project during the time the project remains incomplete after the Agreement date of final completion will be charged to Contractor at a rate previously negotiated City; and

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c. All retesting required due to the failure of Contractor's Work to meet the requirements of the Agreement Documents will be at Contractor's expense. All standby and travel time by the City's testing lab, the Design Professional or City due to Contractor's inability to be prepared for testing at the agreed upon time will be at the Contractor's expense.

4.1.15 City may withhold from any payment otherwise due to Contractor any amounts necessary to pay the Design Professional for such additional services as provided herein above.

4.1.16 Contractor will not be required to bear additional costs incurred by City due to errors by the Design Professional.

4.2 **CONTRACTOR'S PRE-AGREEMENT AND PRE-WORK DELIVERABLES**

4.2.1 Prior to award of the Agreement, Contractor must execute Agreement and deliver to City. Failure to do so may delay Agreement award. Contractor must also provide to City its Contractor's License classification and number and its Federal Tax I.D. number.

4.2.2 Before beginning any Work under the Agreement, Agreement must be fully executed by City.

4.2.3 After Agreement award, City will issue to Contractor an award letter. At that time Contractor must deliver to City such bonds and certificates of insurance with endorsements in such amounts (and other evidence of insurance requested by City) required under Section 11 of these General Conditions, and as the Agreement requires.

4.2.4 As evidence of Workmen's Compensation Insurance, Contractor must, upon request, provide a letter of certification from the Industrial Commission of Arizona that Contractor is insured by the State Compensation Fund or is an authorized self-insurer or a certificate of insurance issued by an insurance company authorized by the Insurance Department of Arizona to write Workmen's Compensation and Occupational Disease Insurance in the State of Arizona.

4.2.5 Within 10 Days of the date of the executed Agreement letter issued by City, Contractor must submit to City for review and acceptance the following items:

4.2.5.1 Comprehensive construction Project Schedule including a Critical Path Method (CPM) diagram schedule as described in Section 6.2. Project Schedule must be in Microsoft Project standard file format. Within 10 Days of receipt of City's comments, Contractor must make all required corrections, adjustments, and additions to complete the Project Schedule and resubmit to City for review.

4.2.5.2 Preliminary schedule of submittals and Shop Drawings. Within 10 Days of receipt of City's comments, Contractor must submit the corrected and completed schedule of Shop Drawings submissions for approval. Contractor's schedule of Shop Drawings and sample submittals will be acceptable to City if it provides a workable arrangement for reviewing and processing the required submittals.

4.2.5.3 Schedule of Values in a form specified by City reflecting the subcontracts and other categories that will be used to submit Pay Applications for the Work. The total amount of the Schedule of Values must not be greater than the Agreement Price. The Schedule of Values will be reviewed at the Pre-Construction Conference and revised by Contractor within 10 Days after Pre-Construction Conference in response to comments and questions from

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City. Once accepted by City in writing, the Schedule of Values for the Project must not be changed without the prior written approval of City.

4.2.6 Video Recording Requirement. Prior to performing any Work, Contractor must document the existing conditions of the Site, all other areas where Work will occur and all adjacent areas that may be impacted by the Work via digital video format. Contractor must video record and index all areas, features, buildings and other public and private improvements that could potentially be impacted by the Work. Video recording must be coordinated with City. When video recording private property, Contractor must also coordinate the video recording with the private property owner, if possible. Contractor must provide City with a copy of said digital video format prior to performing any Work.

4.2.7 Aerial Drone Construction Photography.

4.2.7.1 If Agreement duration is greater than 90 calendar days, Contractor must engage a professional unmanned aerial vehicle (UAV) aerial pilot to photograph the Site prior to construction mobilization, at three-month intervals during construction, and following final inspection. Drone camera specifications must meet the following minimum requirements:

a. 1-inch CMOS
b. Pixels: 20M
c. FOV 84 8.8 mm/24 mm (35 mm format equivalent) f/2.8-f/11 auto focus at 1 m-
d. For photographing: 16.9 Aspect Ratio: 5472x3078
e. For video shooting: MP4/MOV/H.264
f. FHD: 1920x1080 120p @100Mbps
g. File format: High Definition (HD) JPEG for digital photos and HD MPEG 4 for digital video.
h. All metadata to be recorded including GPS data and preserved with photographs provided.

Interval	**JPEG**
3 month intervals	At an altitude (AGL) between 70-90 ft.
3 month intervals	Images to be taken every 50-100 ft. to be determined based on project scope.

4.2.7.2 Drone photos to be taken in sequential geographical order and then organized and provided in the same manner unless otherwise specified.

4.2.7.3 Photos to be provided digitally via an online file share service and/or by a USB drive to contractor.

4.2.7.4 Drone pilots to obey ALL local (city, county, state) UAV regulations as well as FAA UAV guidelines including, but not limited to, conducting all flights during daylight hours, not exceeding maximum altitude ceilings (depending on area), not flying over people, yielding to other aircraft.

4.2.7.5 Drone pilots must fly drone within visual line of sight (VSOL) and have visual spotter when needed. Drone pilots only to operate in favorable weather conditions when minimum visibility is 3 miles or greater.

4.2.7.6 Drone pilots to conduct a preflight checklist and visually inspect the entire flight path prior to flying to ensure a safe flight.

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4.2.7.7 Airspace Authorizations. Operations in Class G airspace are allowed without air traffic control (ATC) permission. Operations in Class B, C, D and E airspace need ATC authorization. Drone pilots to schedule each flight in advance and based on airspace if required will notify nearby airports/control towers, etc.

4.2.8 Government Approvals and Permits.

4.2.8.1 Contractor must obtain all necessary permits for the Work and pay all applicable fees, unless otherwise noted on the Plans and in the Specifications. City permit fees will be paid internally by City. For bidding purposes, an allowance for all permit fees is included in the bid schedule under the item "allowance for permit fees." The Contractor will be paid for the actual cost of the permit fees upon submitting a receipt showing the fee Contractor has paid. Excluded from the above allowance are items such as all costs incurred by the Contractor in securing the permit except for the actual permit fee established by the agency, cost for all shutdowns or outages, cost for pole bracing, cost of permits for construction water, cost of construction water, cost for any additional insurance requirements, cost for any licenses, and other similar type costs. Contractor is specifically notified of the need to obtain the necessary environmental permits or file the necessary environmental and regulatory permit notices.

4.2.8.2 Copies of all permits and the associated notices must be provided to City prior to starting the permitted activity.

4.3 PRE-CONSTRUCTION CONFERENCE

4.3.1 Prior to the commencement of any Work, City will schedule a Pre-Construction Conference.

4.3.2 The purpose of this Conference is to establish a working relationship between Contractor, the utility firms, and various City agencies. The agenda will include critical elements of the Work schedule, submittal schedule, cost breakdown of major lump sum items, Payment Requests and processing, coordination with the involved utility firms, and emergency telephone numbers for all representatives involved in the course of construction.

4.3.3 Minimum attendance by Contractor at any mandatory meeting with City must be (1) Contractor's Representative, who is authorized to execute and sign documents on behalf of the firm, (2) Contractor's on-site Superintendent, and (3) Contractor's Safety Office, or other employee responsible for safety.

4.4 PERFORMANCE OF THE WORK (INCLUDING FIELD MEASUREMENTS, SUBCONTRACTORS, AND SUPPLIERS)

4.4.1 Unless otherwise provided in the Agreement Documents to be the responsibility of City or a separate Contractor, Contractor must provide through itself or Subcontractors the necessary supervision, labor, inspection, testing, start-up, material, equipment, machinery, temporary utilities and other temporary facilities to permit Contractor to complete the Work consistent with the Agreement Documents.

4.4.2 Contractor must perform all construction activities efficiently and with the requisite expertise, skill and competence to satisfy the requirements of the Agreement Documents. Contractor must at all times exercise complete and exclusive control over the means, methods, safety, sequences and techniques of construction.

4.4.3 Contractor's Superintendent must be present at the Site at all times that material Work

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under this Agreement is taking place. Contractor's Superintendent or designee must be present at the Site at all times any other Work under this Agreement is taking place. Superintendent must not be replaced without written notice to City. Whenever the Superintendent is not present at a particular part of the Work where the City or Design Professional may desire to inform the Contractor relative to interpretation of the Drawings and Specifications or to disapproval or rejection of materials or Work performed, the City or Design Professional may provide such information in writing to the foreman or other worker in charge of the particular part of the Work in reference to which the information is given. Information so given will be as binding as if given to the Superintendent.

4.4.4 All elements of the Work must be under the direct supervision of a foreman or his designated representative on the Site who must have the authority to take actions required to properly carry out that particular element of the Work.

4.4.5 Working Hours. Except in connection with the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise indicated, all Work at the Site must be performed during regular working hours, and Contractor will not permit overtime work or the performance of Work on Saturday, Sunday or any legal holiday without City's written consent given after prior written notice to City. If it will become absolutely necessary to perform Work at night or on Saturdays, Sundays or legal holidays, the City must be informed at least 24 hours in advance of the beginning of performance of such Work. Only such Work will be done at night as can be done satisfactorily as determined by the City. Good lighting and all other necessary facilities for carrying out and inspecting the Work must be provided and maintained at all points where such Work is being done. Further, unless such non-normal work hours are performed at City's request or required by the Agreement Documents, Contractor must pay to City all additional costs incurred by City by reason of such non-normal working hours. Expenses incurred by City for overtime compensation must be reimbursed by Contractor as follows: (i) City staff at the rate set forth in current City Fee Schedule as published on City website, (ii) Design Professional and staff at the standard hourly rates previously negotiated with City, and (iii) all others at actual cost plus ten percent administrative overhead. Such costs may be deducted by City from any payments due to Contractor. Provided, however, if overtime work or work during other than normal hours is at the request of City and not due to Contractor delay, City will pay the cost of City overtime expenses.

4.4.6 Where the Agreement Documents require that a particular product be installed or applied by an applicator approved by the manufacturer, it is Contractor's responsibility to ensure the Subcontractor employed for such work is approved by the manufacturer. All materials and equipment must be stored, applied, installed, connected, erected, used, cleaned and conditioned in accordance with the instructions of the applicable manufacturer, fabricator, supplier or distributor, except as otherwise provided in the Agreement Documents; but no provisions of any such instructions will be effective to impose on City of Design Professional responsibility for the means, methods, techniques, sequences or procedures of construction or for safety precautions incident thereto.

4.4.7 Before starting the Work, Contractor must carefully study and compare the various Plans, Drawings, other Agreement Documents, and Specifications relative to that portion of the Work, as well as the information furnished by City, must take field measurements of any existing conditions related to that portion of the Work and must observe any conditions at the Site affecting it. The exactness of grades, elevations, dimensions, or locations given on any Drawings, or the Work installed by other contractors, is not guaranteed by City.

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4.4.8 Before ordering materials or doing Work, Contractor and each Subcontractor must verify measurements at the Site and will be responsible for the correctness of such measurements. No extra charge or compensation will be allowed because of differences between actual dimensions and the dimensions indicated on the Agreement Documents, including the Drawings.

4.4.9 Ground Level Construction Photography.

4.4.9.1 The Contractor must furnish progress photographs of the project. The photographer selected by the Contractor must be approved by the City and must be either a commercial photographer or an individual experienced and equipped for such photography.

4.4.9.2 The Contractor must deliver to City all photographs taken during that period with each application for payment. If the current photographs do not accompany the application, the application will not be reviewed and will be returned to the Contractor as incomplete.

4.4.9.3 Photographs must be identified by use of typewritten labels affixed to the back of the photograph. The label must provide a description of the view, the direction from which the photograph was taken, the name of the project, City's project number, the name of Contractor and the date of the photography. The stationing must also be included for all pipeline installations.

4.4.9.4 Photographs must be taken during the construction period and must be of aesthetic composition and depict the progress of the Work from the beginning of construction through and including the finished product. City may vary the specified frequency so that significant progress or changes can be recorded on the photographs.

4.4.10 Underground Facilities.

4.4.10.1 The existence and number of facilities as shown on the Plans are estimated from information furnished by the particular utility. Contractor is responsible for field verification and location of all utilities prior to the start of construction. No field work will be allowed to start until Contractor has contacted Arizona 811 and all affected utilities have been located. In addition, Contractor must expose and physically locate all potentially conflicting utilities prior to construction. The actual locations of the utilities must be compared to locations shown on the Plans and any required changes in alignment and grade must be made at the time of construction in consultation with Project Manager. It is generally recognized and Contractor should anticipate that information from Arizona 811 or information from utility companies during project design, frequently fails to disclose all underground facilities. The fact that more utility lines or other underground facilities are located in the Project Site than shown on the Project Plans does not constitute an "unforeseen Condition" and such undisclosed underground facilities do not differ materially from the conditions which Contractor should expect. The provisions of Sections 105.4, 105.6, 107.11 and 109.8.1 of the MAG Uniform Standard Specifications for Public Works Construction apply and are incorporated herein by this reference.

4.4.10.2 Contractor is responsible for all coordination with utility companies. The provisions of Sections 105.4, 105.6, 107.11 and 109.8.1 of the MAG Uniform Standard Specifications for Public Works Construction strictly apply and no additional compensation will be paid to Contractor for delays due to utility work on the project.

4.4.11 Relocation of Existing Water Meters. When a service line has been extended and a line

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setter installed in a meter box, City forces will re-install meter. No compression fittings will be utilized.

4.4.12 Water Turn-On or Turn-Off.

4.4.12.1 Contractor must coordinate all water line turn-ons and turn-offs through the City. Application must be made to the Municipal Utility Division and Contractor must pay the established charges. The City will close existing valves, but will not guarantee a bone-dry Shutdown.

4.4.12.2 Contractor must notify all customers affected by the turn-off not less than 48 hours in advance. Notification must be in writing, must give the reason for the turn-off and must give the estimated time and duration that water service will be interrupted. Contractor is also notified that water turn-off will not be permitted on the Day before and after Thanksgiving Day and Christmas Day.

4.4.12.3 No direct payment will be made to Contractor for turn-ons or turn-offs. Costs associated therewith will be included in other items for which direct payment is made.

4.4.13 Tests and Inspections.

4.4.13.1 Contractor must give City timely (at a minimum, twenty-four hours) notice of readiness of the Work for all required inspections, tests or approvals. Contractor must give timely notice to City in advance of backfilling or otherwise covering any part of the Work so that city representative may, if desired, observe such part of the Work before it is concealed. Whenever Contractor varies the normal period during which Work or any portion of it is carried on each Day, Contractor must give timely notice to City so that city representative may, if desired, be present to observe the Work in progress. If Contractor fails to give such timely notice, any Work done in the absence of city representative will be subject to rejection. If Contractor gives such notice to City, but then is not ready for such inspections, tests, approvals or observations at the time so noticed, Contractor must reimburse City for all costs incurred by the attendance of city representatives.

4.4.13.2 If any law, ordinance, rule, regulation, code, or orders of any public body having jurisdiction requires any Work (or part thereof) to be inspected, tested or approved, Contractor (unless another party is specified in the Agreement Documents) must assume full responsibility therefor, pay all costs in connection therewith and furnish City the required certificates of inspection, testing, or approval. Contractor must also be responsible for and must pay all costs in connection with any inspection or testing required by the Specifications in connection with City's acceptance of a manufacturer, fabricator, supplier or distributor of materials or equipment proposed to be incorporated in the Work, or of materials or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work. The cost of all other inspections, tests and approvals required by the Agreement Documents will be paid by City (unless otherwise specified).

4.4.13.3 All inspections, tests or approvals other than those required by law, ordinance, rule, regulation, code or order of any public body having jurisdiction must be performed by organizations acceptable to City and by the Design Professional if so specified.

4.4.13.4 Neither observations by City, the Design Professional nor inspections, tests or approvals by others will relieve Contractor from their obligations to perform the Work in accordance with the Agreement Documents.

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4.4.14 Uncovering Work. If any Work that is to be observed, inspected, tested or approved is covered without written concurrence of City, it must, if requested by City be uncovered for observation. Unless Contractor has given City timely notice of Contractor's intention to cover such Work and City has not acted with reasonable promptness in response to such notice, Contractor must furnish all necessary labor, material and bear all the expenses of such uncovering, exposure, observation, inspection and testing and of satisfactory reconstruction, including compensation for additional professional services, and an appropriate deductive Change Order will be issued.

4.4.15 In all cases of interconnection of its Work with existing or other Work, Contractor must verify at the Site all dimensions relating to such existing or other Work. Any errors due to Contractor's failure to so verify all such grades, elevations, locations or dimensions must be promptly rectified by Contractor without any increase in the Agreement Price. Any design errors or omissions noted by Contractor during this review must be reported promptly to City.

4.4.16 Contractor must establish and maintain all construction grades, lines, levels, and benchmarks, and will be responsible for accuracy and protection of same. This Work must be performed or supervised by a licensed civil engineer or surveyor in the State of Arizona.

4.4.17 Contractor must photograph all buried piping of greater than four (4) inches in diameter prior to backfill.

4.4.18 Contractor is responsible for the proper performance of the work of Subcontractors and any acts and omissions in connection with such performance. Nothing in the Agreement Documents is intended or deemed to create any legal or contractual relationship between City and any Subcontractor or Sub-Subcontractor, including but not limited to any third-party beneficiary rights.

4.4.19 Contractor must coordinate the activities of all Subcontractors. Contractor must coordinate performance of the Work with City's Public Works & Utilities Department and other departments or agencies within City. The Design Professional and other contractors or parties involved in the Project. If City performs other work on the Project or at the Site with separate contractors under City's control, Contractor agrees to cooperate and coordinate its activities with those of such separate contractors so that the Project can be completed in an orderly and coordinated manner without unreasonable disruption.

4.4.20 Contractor will not substitute or change any Subcontractor or Supplier without the prior written approval of City. Any substitute or replacement Subcontractor or Supplier must be required to meet the same qualifications and selection criteria and process as the original Subcontractor or Supplier. If a Subcontract/Supplier selection plan has been approved by City, Contractor will follow that plan unless otherwise approved by City in writing.

4.4.21 Contractor must not change or replace any members of its Project team, including Contractor's Representative, Project Manager, or Superintendent, without an explanation for the change being given to City, and receiving prior written approval of the change from City, which approval will not be unreasonably withheld.

4.4.22 Subcontractors whose scope of work has a value greater than 15% of the total Agreement Price are required to furnish performance and payment bonds to Contractor, unless

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otherwise approved in writing by City.

4.4.23 Contractor must comply with MAG Specification § 108.2 (E) unless otherwise specified in Agreement Documents.

4.5 **CONTROL OF THE PROJECT SITE**

4.5.1 Throughout all phases of construction, including suspension of Work, Contractor must keep the Site reasonably free from debris, trash and construction wastes to permit Contractor to perform its construction services efficiently, safely and without interfering with the use of adjacent land areas. Prior to Final Acceptance of the Work, or a portion of the Work, Contractor must remove all debris, trash, construction wastes, materials, equipment, machinery and tools arising from the Work or applicable portions thereof to permit City to occupy the Project or a portion of the Project for its intended use.

4.5.2 Contractor must take whatever steps, procedures or means necessary to prevent dust nuisance due to construction operations. The dust control measures must be maintained at all times to the satisfaction of City and in accordance with the requirements of the Maricopa County Bureau of Air Pollution Control Rules and Regulations.

4.5.3 Contractor must maintain Americans with Disabilities Act (ADA) and American National Standards Institute (ANSI) accessibility requirements during construction activities, including without limitation compliance with the 2010 regulations governing implementation of the ADA to the extent applicable. ADA and ANSI accessibility requirements must include, but not be limited to, parking, building access, areas of refuge, and emergency exit paths of travel. Contractor i s responsible for the coordination of all Work to minimize disruption to residents and the public.

4.5.4 Only materials and equipment used directly in the Work will be brought to and stored on the Site by Contractor. When equipment is no longer required for Work, it must be removed promptly from the Site. Protection of construction materials and equipment stored at the Site from weather, theft, damage and all other adversity is solely the responsibility of the Contractor.

4.5.5 Contractor agrees all persons working on the Site must act at all times in the best interest of the Project and will comply with all applicable rules and regulations reasonably set forth by City related to the Site. Notwithstanding the foregoing or anything in this Agreement to the contrary, City may remove from the Site any individual who City deems in their reasonable discretion to be creating a disturbance or causing any problem on the Site.

4.5.6 Contractor will be responsible to City for the acts and omissions of Contractor's employees, Subcontractors and their agents and employees, and any other person performing any of the Work under an Agreement with Contractor, or claiming by, through or under Contractor, for all damages, losses, costs and expenses resulting from such acts or omissions.

4.5.7 City may conduct criminal, drive history, and all other requested background checks of Contractor and Subcontractor personnel performing Work or who have access to City's information, data, or facilities in accordance with City's current background check policies, or the provisions of the Project Specific Conditions. Any officer, employee or agent that fails to background check must be replaced immediately.

4.5.8 City will have a final authority, based upon security reasons: (i) to determine when

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security clearance of Contractor's and Subcontractor's personnel is required; (ii) to determine the nature of the security clearance, up to and including fingerprinting personnel; and (iii) to determine whether or not any individual or entity may provide Services or perform Work under the Agreement.

4.5.9 If City objects to any personnel for any reasonable cause, then Contractor must, upon notice from City, remove such individual from the Project.

4.6 **PROJECT SAFETY**

4.6.1 The Project and all Work performed in relation thereto is governed by applicable provisions of the federal laws, including but not limited to, the latest amendments of the following:

a. Williams-Steiger Occupational Safety & Health Act of 1970, Public Law, 91-596.

b. Part 1910 and Part 1926 – Occupational Safety and Health Standards, Chapter XVII of Title 29, Code of Federal Regulations.

c. Part 1518 – Safety and Health Regulations for Construction, Chapter XIII of Title 29, Code of Federal Regulations.

4.6.2 Contractor is responsible for safety of the job Site for employees of Contractor as well as for members of the general public and others who may drive or walk through or be at the Site.

4.6.3 Contractor recognizes the importance of performing the Work in a safe manner so as to prevent damage, injury or loss to: (i) all individuals at the Site, whether working or visiting; (ii) the Work, including materials and equipment incorporated into the Work and stored On-Site or Off-Site; and (iii) all other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction; and (iv) the owners or tenants of adjacent property and their patrons, employees and invitees.

4.6.4 Contractor assumes responsibility for implementing and monitoring all safety precautions and programs related to the performance of the Work.

4.6.5 Contractor must provide a "competent person' as required by O.S.H.A regulations. The "competent person" must be identified at the Pre-Construction Conference with City advised in writing of any changes.

4.6.6 The "competent person" must make routine daily inspections of the Site and must hold weekly safety meetings with Contractor's personnel, Subcontractors and others as applicable.

4.6.7 Contractor and Subcontractors must comply with all legal and regulatory requirements relating to safety, as well as any City specific safety requirements set forth in the Agreement Documents, provided that such City-specific requirements do not violate any applicable legal and regulatory requirements.

4.6.8 Contractor will immediately report in writing any safety-related injury, loss, damage or accident arising from the Work to Project Manager and, to the extent mandated by Legal Requirements, to all government or quasi-government authorities having jurisdiction over safety-related matters involving the Project or the Work.

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4.6.9 Contractor's responsibility for safety under this Section is not intended in any way to relieve Subcontractors and Sub-Subcontractors of their own contractual and legal obligations and responsibility for (i) complying with all Legal Requirements, including those related to health and safety matters, and (ii) taking all necessary measures to implement and monitor all safety precautions and programs to guard against injury, losses, damages or accidents resulting from their performance of the Work.

4.6.10 As between City and Contractor, Contractor is responsible to City for any and all the safety issues relating to the Work on the Project. Contractor must administer and manage the safety program. This will include, but not necessarily be limited to review of the safety programs of each Subcontractor. Contractor must monitor the establishment and execution of compliance with all applicable regulatory and advisory agency construction safety standards. Contractor's responsibility for review, monitoring, and coordination of the Subcontractor's safety programs will not extend to direct control over execution of the Subcontractors' safety programs. Notwithstanding Contractor's safety obligations to City, it is agreed and understood that each individual Subcontractor will remain controlling employer responsible for the safety programs and precautions applicable to its own work and the activities of other's work in areas designated to be controlled by such Subcontractor for purposes of workers compensation insurance coverage.

4.6.11 Nothing in this agreement will relieve Contractor of his responsibility to maintain traffic, structures, etc., as noted on the Plans, Specifications, and Project Specific Conditions. Contractor is responsible to provide all necessary shoring, bracing and trench support as is necessary to maintain traffic structures, etc., as stipulated in the Plans, Specifications, and Special Provisions. If the stability of adjoining building, walls, roadways, etc., is endangered by Contractor's excavation, shoring, bracing, or under pinning must be provided as necessary to ensure project safety. Cost for shoring, bracing, underpinnings, and trench support will be included in the appropriate items listed in the Agreement Price, and no additional payment will be made for this work.

4.7 MATERIALS QUALITY, SUBSTITUTIONS, AND SHOP DRAWINGS

4.7.1 Quality Control and Quality Assurance Testing.

4.7.1.1 All construction materials to be used or incorporated in the Project are subject to inspection, Quality Control & Quality Assurance Testing, and approval or rejection by City. Any material rejected by City must be removed immediately and replaced in an acceptable manner to City at no additional cost to City. When QC/QA tests indicate noncompliance with the Agreement Documents, retesting must be performed by the same testing laboratory that performed the tests that indicated noncompliance.

4.7.1.2 The Contractor must establish, provide, and maintain an effective Quality Control Testing Program (QCTP). The Contractor must develop his own program or procure the services of a consultant. In either case, the party performing the tests must be currently certified by the National Bureau of Standards in the National Voluntary Laboratory Accreditation Program (NVLAP) for construction services or the AASHTO Accreditation Plan (AAP) for Soils, Asphalt and Concrete. The Contractor must provide all support necessary to perform QC and QA testing and sampling (i.e. shoring for testing trench backfill, backhoes, motor graders, loaders, etc. to facilitate testing and sampling). The City will perform the QA testing.

4.7.1.3 The Contractor must submit a written QCTP to the City as a required submittal. The Contractor must not begin Work until the Quality Control Program has been reviewed and

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accepted by the City. Resumes of all personnel that will be associated directly or indirectly with the QCTP must be included.

4.7.1.4 The QCTP must include, but not be limited to, on-site/field and laboratory testing of all material delivered to the Site and any existing materials or conditions pertinent to the project.

4.7.1.5 All testing must be under the direction of a Professional Engineer registered in the State of Arizona, knowledgeable in Materials Testing. All "Test Report" forms must be stamped by said Engineer.

4.7.1.6 The written QCTP will set forth the responsibilities of the engineer, project manager, supervisory personnel and each technician assigned to this project. Substitutions or replacement of personnel must require prior written approval by the City. All personnel must be proficient within their assigned duties and possess certification(s) commensurate with their position and responsibilities. The minimum certification(s) for each technician must be NICET Level II, Arizona Technical Testing Institute, American Concrete Institute, or other nationally recognized program applicable to the project and approved by the City of Chandler. The written QCTP must include a description of the required field and construction materials laboratory tests, including required frequencies that meet the minimums established herein.

4.7.1.7 The Contractor must establish a system to record and report all material test results. The daily test reports must include, but not be limited to:

a. Test designation;
b. Date of test;
c. Name of tester;
d. Location of test/sample (station and offset);
e. Product suppliers and product codes (as applicable);
f. Depth/elevation of test/sample;
g. Test result;
h. Control requirement(s);
i. Cause of rejection (if applicable);
j. Results of retests (if applicable); and
k. Remedial action (if applicable).

4.7.1.8 The Contractor must submit test results to the designated City representative.

4.7.1.9 The Contractor must also submit a weekly report to the City summarizing the testing and construction activities completed by emailing the report to the email addresses noted above. All weekly reports must be submitted simultaneously to the Contractor and the City of Chandler. The report must include individual summary sheets for each utility line, structure, and portion of the pavement section. Cores must be numbered sequentially throughout the Project. Re-cores must reference the original core by number and must contain the averaged values for thickness and density. Total pavement thickness must be reported**.** Vertical location of tests for underground utilities must indicate the depth of the

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excavation at the location of the test (i.e., cut to flow line [if applicable], depth to bottom or top of pipe, etc.). Density tests must be numbered sequentially. If the minimum number of tests has not been performed per the written QCTP, this must be stated in the weekly summary report with an explanation of the circumstances.

4.7.1.10 The City will maintain a copy of the Project test results and weekly reports in the Project file. In cases where quality control activities do not comply with the Agreement provisions, the City may:

a. Order the Contractor to replace ineffective or unqualified quality control personnel.

b. Order the Contractor to stop operations until appropriate corrective action is taken.

4.7.1.11 Although minimum testing requirements are specified herein, the Contractor bears full responsibility for the quality of the materials and their installation and may elect to perform additional testing beyond the requirements set forth herein to ensure compliance.

4.7.1.12 The Quality Control requirements contained in this Section are in addition to and separate from Quality Assurance Testing, which will be performed by the City of Chandler or its representative. If the Quality Assurance test results are not in agreement with the Quality Control test results, the Contractor will have the option to retain a third party consultant for referee tests. The third party consultant must meet the same requirements as the consultant performing the Quality Control Testing. The results of the third party will be binding. All cost incurred by the referee testing will be the Contractor's expense. If the Contractor elects not to retain a third party for referee testing, the City of Chandler test results will prevail.

4.7.1.13 Except as otherwise noted within this Section, Work or materials required by this Section are non- pay items. Per MAG Section 101, a non-pay item is an item of Work for which no separate payment will be made, the cost of which is to be included as an incidental cost for associated item(s) included on the Bid Schedule or Schedule of Values.

4.7.2 Trade Names and Substitutions.

4.7.2.1 Substitutions prior to bid will only be considered if in compliance with Arizona Revised Statute § 34-104.

4.7.2.2 Contractor, if requested by City, must submit Samples or any additional information that may be necessary to evaluate the acceptability of the substitution.

4.7.2.3 City will make the final decision and will notify Contractor in writing as to whether the substitution has been accepted or rejected.

4.7.2.4 If City does not respond within 15 working days, Contractor must continue to perform the Work in accordance with the Agreement Documents and the substitution will be considered rejected.

4.7.3 Shop Drawings.

4.7.3.1 Contractor must prepare and submit Shop Drawings which show details of all Work to insure proper installation of the Work using those materials and equipment specified under the approved Plans and Specifications.

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4.7.3.2 Contractor must submit a schedule of Shop Drawing submissions, which avoids bulk submissions to the extent reasonably possible, with the Project Schedule for City approval. The schedule of Shop Drawing submissions must include all of the items for which Shop Drawings are required by the Agreement Documents, including the Specifications. Unless otherwise noted, Shop Drawings will not be required for items specified or detailed in the Uniform Standard Specifications and Details or the Technical Specifications.

4.7.3.3 Shop Drawings must be numbered consecutively for each Specification section and must accurately and distinctly present the following:

a. All working and erection dimensions.

b. Arrangements and sectional views.

c. Necessary details, including complete information for making connections between work under this Agreement and work under other Agreements.

d. Kinds of materials and finishes.

e. Parts list and description thereof.

4.7.3.4 Each Drawing or page must include:

a. Project Name, City of Chandler Project Number and descriptions.

b. Submittal date and space for revision dates.

c. Identification of equipment, product or material.

d. Name of Contractor and Subcontractor.

e. Name of Supplier and Manufacturer.

f. Relation to adjacent structure of material.

g. Physical dimensions clearly identified.

h. ASTM and Federal Specifications references.

i. Identification of and justification for deviations from the Agreement Documents.

j. Contractor's stamp, initialed or signed, dated and certifying the review of submittal, certification of field measurements and compliance with Agreement.

k. Location at which the equipment or materials are to be installed.

4.7.3.5 Location will mean both physical location and location relative to other connected or attached material. City will return unchecked any submittal, which does not contain complete data on the Work and full information on related matters.

4.7.3.6 Stock or standard drawings will not be accepted for review unless full identification and supplementary information is shown thereon in ink or typewritten form.

4.7.3.7 Contractor must schedule, prepare and submit all Shop Drawings in accordance with a time-table that will allow its suppliers and manufacturers sufficient time to fabricate, manufacture, inspect, test and deliver their respective products to the project Site in a timely manner so as to not delay the complete performance of the Work.

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4.7.3.8 If the Shop Drawings show departures from the Agreement requirements, Contractor must make specific mention thereof in the Letter of Transmittal; otherwise review of such submittals by City will not constitute review of the departure. Review of the Drawings will constitute review of the specific subject matter for which the Drawings were submitted and not of any other structure, material, equipment, or apparatus shown on the Drawings.

4.7.3.9 The review of Shop Drawings will be general and will not relieve Contractor of responsibility for the accuracy of such Drawings, nor for the proper fitting and construction of the Work, nor for the furnishing of materials or Work required by the Agreement. No construction called for by Shop Drawings will be initiated until such Drawings have been reviewed and approved by City.

4.7.3.10 The procedure in seeking review of the Shop Drawings will be as follows:

a. Contractor must submit complete sets of Shop Drawings and other descriptive data as specified in this Section.

b. After Contractor's submittal or resubmittal of Shop Drawings, if Contractor has submitted Shop Drawings in accordance with the City-approved submittal schedule, or upon resubmission, City will be provided with three (3) calendar weeks for review. Should City require additional review time above and beyond the three (3) calendar weeks, Contractor may ask for a time extension or monetary compensation, if they can present valid, factual evidence that actual damages were incurred by Contractor. City will determine the amount of the time extension or the monetary compensation to be awarded Contractor, if any, in accordance with City's Policy Statement for Calculating Delays and Damages, Appendix 1.

4.7.3.11 Contractor will be responsible for all extra costs incurred by City caused by Contractor's failure to comply with the procedure outline above.

4.7.4 Long Lead Time Items. Contractor must submit Shop Drawings, as required by the Engineer, on all long lead items to be furnished and installed as part of the project within 10 Days after the date of the executed Agreement letter issued by City. In addition, Contractor must order all long lead items to be furnished and installed as part of this Project within 3 Days after receiving approved Shop Drawings. For all long lead times for which Shop Drawings are not required, Contractor must order said long lead items within 15 Days after the date of the executed Agreement letter issued by City. Within 2 Days after ordering long lead items, Contractor must supply copies of all purchase orders, along with an accurate delivery schedule from the supplier.

4.7.5 Construction Water. If Contractor uses water from City's water system for construction water, Contractor must obtain a fire hydrant meter from City of Chandler Utility Services (480-782-2280) and all construction water must be obtained through the hydrant meter. Contractor must pay all fees related to the hydrant meter and all water bills for construction water. All cost for meters and construction water will be included in the Agreement Price.

4.8 PROJECT RECORD DOCUMENTS

4.8.1 During the construction period, Contractor must maintain at the jobsite a full-size set of prints of the Construction Document Drawings and Shop Drawings for Project Record Document purposes.

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4.8.2 Contractor must mark these Drawings to indicate the actual installation where the installation varies from the original Construction Documents. Contractor must give particular attention to information on elements that will be concealed, which would be difficult to identify or measure and record later. Items required to be marked include but are not limited to:

a. Dimensional changes to the Drawings.

b. Revisions to details shown on Drawings.

c. Locations and depths of underground utilities.

d. Revisions to routing of piping and conduits.

e. Actual equipment locations.

f. Changes made by Change Order or Addendum.

g. Details not on original Agreement Drawings.

4.8.3 Contractor must mark completely and accurately Project Record Drawing sets of Construction Documents.

4.8.4 Contractor must mark Project Record Drawings sets with red erasable colored pencil.

4.8.5 Contractor must note Request for Information (RFI) Numbers and Change Order numbers, etc., as required to identify the source of the change to the Construction Documents.

4.8.6 Contractor must submit Project Record Drawing sets and Shop Drawings to City or its representative for review and comment.

4.8.7 Upon receipt of the reviewed Project Record Drawings from City, Contractor must correct any deficiencies and omissions to the Drawings and submit the final original of the Project Record Drawings to City prior to Final Payment.

4.8.8 Project Manager will review the Project Record Drawings monthly prior to the date established for the Payment Request and will be the sole judge of acceptance of these Drawings.

4.9 WARRANTY AND CORRECTION OF DEFECTIVE WORK

4.9.1 Contractor warrants to City that the construction, including all materials and equipment furnished as part of the Work, will be new unless otherwise specified in the Agreement Documents, of good quality, and free of defects in materials and workmanship. Contractor's warranty obligation excludes defects caused by abuse, alterations, or unreasonable failure to maintain the construction by persons other than Contractor, subcontractors, or others under Contractor's control. Nothing in this warranty will limit any manufacturer's warranty which provides City with greater warranty rights than set forth herein or in the Agreement. Contractor will provide City with all manufacturers' warranties and operation and maintenance manuals upon substantial completion of the Work. Contractor's warranty must be for one (1) year, in accordance with MAG Specification § 108.8, and will commence for all portions of the Work upon Final Acceptance of the entire Work as determined by City under the Agreement. All statutory or other warranties, express or implied, related to latent defects will remain in force and are not limited by this provision.

4.9.2 City May Stop the Work. If the Work is defective, or Contractor fails to supply sufficient skilled workmen or suitable materials or equipment, City may order Contractor to stop the

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Work without cost to City, or any portion thereof, until the cause for such order has been eliminated; however, this right of City to stop the Work will not give rise to any duty on the part of City to exercise this right for the benefit of Contractor or any other party.

4.9.3 Correction or Removal of Defective Work.

4.9.3.1 If required by City, Contractor must promptly, without cost to City and as specified by City, either correct any defective Work, whether or not fabricated, installed or completed, or, if the Work has been rejected by City, remove it from the Site and replace it with non-defective Work. Contractor must correct any Work which may be displaced in correcting, removing or replacing defective Work. No compensation will be allowed Contractor for such removal, replacement or remedial Work. Contractor must reimburse City for costs incurred by City due to such correction or removal including but not limited to additional expenses for inspection, testing or observation and for repeated reviews by the City or Design Professional.

4.9.3.2 Upon failure on the part of the Contractor to comply within a reasonably prompt time with any written order of City to correct or remove defective Work, City has authority to cause nonconforming materials or rejected Work to be remedied, removed, or replaced at the Contractor's expense and to deduct the costs from any moneys due or to become due the Contractor.

4.9.4 City May Correct Defective Work. If Contractor fails within a reasonable time after written notice of City to proceed to correct defective Work or to remove and replace rejected Work as required by City or if Contractor fails to perform the Work in accordance with the Agreement Documents (including any requirements of the progress schedule), City may, after 7 Days' written notice to Contractor, correct and remedy any such deficiency. To the extent necessary to complete corrective and remedial action, City may exclude Contractor from all or part of the Work, and suspend Contractor's services related thereto, take possession of Contractor's tools, appliances, construction equipment and machinery at the Site and incorporate in the Work all materials and equipment stored at the Site or for which City has paid Contractor, but which are stored elsewhere. Contractor must allow City, city representatives, agents and employees such access to the Site as may be necessary to enable City to exercise City’s rights under this Section. All direct and indirect costs of City in exercising such rights will be charged against Contractor in an amount verified by City representative, and a Change Order will be issued incorporating the necessary revisions in the Agreement Documents and a reduction in the Agreement Price. Such direct and indirect costs will include, in particular but without limitation, compensation for additional professional services required and all costs of repair and replacement of Work or others destroyed or damaged by correction, removal or replacement of Contractor's defective Work. Contractor will not be allowed an extension of the Agreement Time because of any delay in Contractor’s performance of the Work attributable to the exercise by City or City's rights hereunder.

4.9.5 Correction or Removal of Unauthorized Work.

4.9.5.1 Any Work done beyond the lines and grades shown on the Drawings or established by the Design Professional or any changes in, additions to, or deductions from the Work done without written authority will be considered as unauthorized and will not be paid for. Work so done may be ordered remedied, removed, or replaced at the Contractor's expense.

4.9.5.2 Upon failure on the part of the Contractor to comply promptly with any order of the City,

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City will have authority to cause unauthorized Work to be remedied, removed, or replaced at the Contractor's expense and to deduct the costs from any moneys due or to become due the Contractor.

4.9.6 Correction Period - One Year Guarantee.

4.9.6.1 If, within one year after the date of Final Acceptance, or such longer period of time as may be prescribed by law or by the terms of any applicable special guarantee required by the Agreement Documents, or by any specific provision of the Agreement Documents, any Work is found to be defective, Contractor must promptly, without cost to City and in accordance with City's written instructions, either correct such defective Work, or, if it has been rejected by City, remove it from the Site and replace it with non-defective Work. If Contractor does not promptly comply with the terms of such instructions, or in an emergency where delay would cause serious risk of loss or damage, City may have the defective Work corrected or the rejected Work removed and replaced, and all direct and indirect costs of such removal and replacement, including compensation for additional professional services, must be paid by Contractor. Such action by the City will not relieve the Contractor of the guarantees required by this Section or elsewhere in the Agreement Documents.

4.9.6.2 If, in the opinion of the City, defective Work creates a dangerous condition or requires immediate correction or attention to prevent further loss to the City or to prevent interruption of operation of the City, the City will attempt to give the notice required by this Section. If the Contractor cannot be contacted or does not comply with the City's request for correction within a reasonable time as determined by the City, the City may, notwithstanding the provisions of this Section, proceed to make such correction or provide such attention; and the costs of such correction or attention will be charged against the Contractor. Such action by the City will not relieve the Contractor of the guarantees required by this Section or elsewhere in the Agreement Documents.

4.9.6.3 This Section does not in any way limit the guarantee on any items for which a longer guarantee is specified or on any items for which a manufacturer or supplier gives a guarantee for a longer period. The Contractor agrees to act as co-guarantor with such manufacturer or supplier and must furnish the City all appropriate guarantee or warranty certificates upon completion of the Project. No guarantee period, whether provided for in this Section or elsewhere, will in any way limit the liability of Contractor or their sureties or insurers under the indemnity or insurance provisions of these General Conditions and the Project Specific Special Conditions.

4.9.7 Acceptance of Defective Work.

4.9.7.1 If, instead of requiring correction or removal and replacement of defective Work, City may accept Work when in the best interest of the City to do so with appropriate monetary credit from Contractor. If any such acceptance occurs prior to final payment, a Change Order will be issued incorporating the necessary revisions in the Agreement Documents, including appropriate reduction in the Agreement Price; or, if the acceptance occurs after final payment, an appropriate amount must be paid by Contractor to City.

4.9.7.2 Alternatively, City may require Contractor to furnish at Contractor's expense, a special performance guarantee or other surety prior to acceptance of defective work.

4.9.8 The Warranty period begins on the Final Acceptance date noted in the Certificate of Completion, irrespective of early completion by some Subcontractors of their work.

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4.9.9 Contractor's warranty obligation must be in accordance with MAG Specifications.

4.9.10 Nothing in the warranties contained in the Agreement Documents are intended to limit any manufacturer's warranty which provides City with greater warranty rights than set forth in this Section or the Agreement Documents. Contractor must provide City with all manufacturers' warranties prior to Substantial Completion, if applicable, or Final Acceptance.

4.9.11 Contractor agrees that it will be responsible to manage and administer the correction of any Work that is not in conformance with the Agreement Documents during the warranty periods set forth in this Section, or during any longer periods to the extent required by the Agreement Documents. A progress payment, or partial or entire use or occupancy of the Project by City, will not constitute acceptance of Work not in accordance with the Agreement Documents.

4.9.12 When notified of a warranty issue, Contractor must respond in writing within 48-hours and must perform warranty Work as soon as material for said repairs are available (as judged solely by City), and in any event Contractor must, take immediate steps to commence and complete correction of nonconforming Work no later than the time period set forth in City's written notification in accordance with the Agreement Documents. This includes the correction, removal or replacement of the nonconforming Work and any damage caused to other parts of the Work affected by the nonconforming Work. If defects develop which are determined by City to be an emergency, City will notify Contractor, via the most expeditious means regarding the nature and condition of the defects. In turn, Contractor must immediately dispatch necessary forces to correct the defect or the emergency condition in accordance with Agreement Documents.

4.9.13 The time periods referenced in this Section apply only to Contractor's obligation to correct nonconforming Work and is not intended to constitute a period of limitations for any other rights or remedies that City may have regarding Contractor's other obligations under the Agreement Documents.

4.9.14 Without limiting the foregoing or anything in these General Conditions or the Agreement to the contrary, Contractor must obtain and provide to City all warranties for any portion of the Project offered by the manufacturer, installer or provider thereof. City and the user of the facility will have the right to the full value and benefit of all such warranties. Contractor must ensure all such warranties are fully transferrable to facilitate the full value of this Section.

4.9.15 Contractor's warranty excludes damages or defects caused by abuse, alterations to the Work not executed by or through Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage.

4.9.16 In the event of any noncompliance with this entire Section 4, City may require Contractor to stop or suspend the Work in whole or in part.

SECTION 5 - CITY RESPONSIBILITIES

5.1 CITY PROJECT MANAGER AND INSPECTORS

5.1.1 Project Manager is responsible for providing City-supplied information and approvals in a timely manner to assist Contractor to fulfill its obligations under the Agreement Documents.

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5.1.2 Project Manager will also provide Contractor with prompt notice when it observes any failure on the part of Contractor to fulfill its contractual obligations, including any default or defect in the Project or non-conformance with the Drawings and Specifications.

5.1.3 City may utilize Field Inspectors to assist Project Manager during construction in observing performance of Contractor. City's use of Inspectors is for the purpose of assisting Project Manager.

5.1.4 The Inspectors are authorized to inspect all Work and materials furnished. Such inspections may extend to all or part of the Work and to preparation, fabrication or manufacture of the materials to be used. The Inspectors have the authority to issue instructions contrary to the Construction Documents if approved and coordinated with the directions of Project Manager.

5.1.5 The Inspectors have the authority to reject work or materials until any questions at issue can be decided by Project Manager.

5.1.6 The use of Inspectors by City will not make City responsible for or give City control over construction means, methods, techniques, sequences or procedures or for safety precautions or programs or responsibility for Contractor's failure to perform the Work in accordance with Agreement Documents. The Inspectors are not authorized to direct any of Contractor's activities, employees or Subcontractors.

5.2 **DESIGN PROFESSIONAL SERVICES**

City may contract separately with one or more Design Professionals to provide construction administration of the Project. The Design Professional's Agreement, as well as other firms hired by City may be furnished to Contractor. Contractor does not have the right to limit or restrict or reject any Agreement modifications that are mutually acceptable to City and Design Professional.

5.3 **CITY'S SEPARATE CONTRACTORS**

City is responsible for all work performed on the Project or at the Site by separate contractors retained by City. City will contractually require its separate contractors to reasonably cooperate with, and reasonably coordinate their activities so as not to interfere with Contractor in order to enable Contractor to timely complete the Work consistent with the Agreement Documents. Contractor must immediately notify the Project manager, and address the matter in the next monthly status report, if any activities of such separate contractors are expected to interfere, or are interfering, with Contractor and such interference will or could result in any delay in Contractor's performance of the Work.

5.4 **PERMIT REVIEW AND INSPECTIONS**

5.4.1 If requested by Contractor, Project Manager will provide assistance and guidance in obtaining necessary reviews, permits and inspections.

5.4.2 The regulating agencies of City, such as Development and Sustainability, Fire and Planning Departments, enforce legal requirements. The enforcement activities of City are independent and separate from this Agreement.

5.5 **PLANS AND SPECIFICATIONS TO THE CONTRACTOR**.

Contractor will be provided up to five copies of the Agreement Documents as are reasonably necessary for the execution of the Work. Additional copies will be furnished,

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upon request, at the cost of reproduction.

SECTION 6 - AGREEMENT TIME

6.1 AGREEMENT TIME

6.1.1 The Agreement Time will start with the Notice to Proceed ("NTP") and end with Final Acceptance.

6.1.2 Beginning on the date of the NTP, Contractor must begin to fulfill Contractor's obligations under the Agreement. Contractor's obligations include providing City and other agencies with any submittals required by the Project Specific Special Provisions, including but not limited to, an approved Project Schedule, Traffic Control Plans, and a Stormwater Pollution Prevention Plan. Contractor must submit all such required submittals before any physical construction work commences on the Site. NTP does not authorize construction work until all agreement insurance, bonds, and schedules are submitted to and accepted by the City.

6.1.3 The Agreement Time will be as set forth in the Project Schedule. Contractor agrees that it will commence performance of the Work and complete the Project through both Substantial Completion and Final Acceptance within the Agreement Time.

6.1.4 Time is of the essence of this Agreement, for the Project, for the Work, and for each phase and designated Milestone thereof.

6.1.5 Failure of Contractor to perform any covenant or condition contained in the Agreement Documents within the time periods specified herein, will constitute a material breach of this Agreement entitling City to terminate the Agreement unless Contractor applies for and receives an extension of time, in accordance with the procedures set forth in the Agreement Documents.

6.1.6 Failure of City to insist upon the performance of any covenant or condition within the time periods specified herein, will not constitute a waiver of Contractor's duty to perform every other covenant or condition within the designated periods, unless a specific waiver is granted in writing for each such covenant or condition.

6.1.7 City's agreement to waive a specific time provision or to extend the time for performance will not constitute a waiver of any other time provisions contained in the Agreement Documents. Failure of Contractor to complete performance promptly within the additional time authorized in the waiver or extension of time agreement constitutes a material breach of this Agreement entitling City to all the remedies set forth herein or provided by law.

6.2 PROJECT SCHEDULE

6.2.1 The Project Schedule must be in Microsoft Project standard file format, must be updated and maintained throughout the Agreement Time, and must contain the following:

6.2.1.1 Detailed representation of all activities for the project, both on-site construction and major procurement. All significant activities together with the resource loading requirements for each and all items appearing on the schedule of values or bid schedule for progress payments must be shown on the Project Schedule or in attached transmittal letter as described in Section 6.2.8.

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6.2.1.2 Dependencies between activities must be indicated so that it may establish as to the effect the progress of any one activity would have on other activities and on the Schedule.

6.2.1.3 Activities for submission, review, and approval of all required submittals.

6.2.1.4 An amount of time will be established prior to the final completion date for "punch list and cleanup". No other activities will be scheduled during this period. Punch list and cleanup must be shown on the Project Schedule and must be entirely completed prior to the expiration of the Agreement Time.

6.2.2 Within 10 Days of receipt of City's comments, Contractor must make all required corrections, adjustments, and additions to complete the Project Schedule and resubmit to City for review. City's review of and response to the Project Schedule is for the purpose of: (1) City planning and staffing for the Project as may be required from time to time; (2) ensuring Contractor's general conformance with the scheduling requirements of the Agreement Documents and completion of the Project within the Agreement Time; and (3) monitoring and evaluating the construction status for purposes of approving monthly progress payments. Acceptance of a submitted schedule by City should in no way be construed as an affirmation or admission that the schedule is reasonable or workable by Contractor. The responsibility for completing the Work on the Project within the Agreement Time remains the obligation of Contractor. City's review does not relieve Contractor from compliance with the requirements of the Agreement Documents or be construed as relieving Contractor of its complete and exclusive control over the means, methods, sequences and techniques for executing the work.

6.2.3 The Project Schedule must show milestones, including milestones for City-furnished information, and must include activities for City-furnished material and construction by other contractors when those activities are interrelated with Contractor activities.

6.2.4 The Project Schedule must be revised as required by conditions and progress of the Work, but such revisions do not relieve Contractor of its obligations to complete the Work within the Agreement Time, as adjusted in accordance with the Agreement Documents. No modification to the Agreement Documents or the Agreement Time will be effective unless approved in advance by City.

6.2.5 For all items of materials and equipment that are critical or may require long lead times to acquire, the Project Schedule must show dates for submission, review and approval of submittals, ordering, and delivery.

6.2.6 An updated Project Schedule must be submitted monthly to City as part of the Payment Request. The monthly submittal must include one full size plot of the entire schedule and one electronic copy containing the schedule in Microsoft Project standard file format. In addition, Contractor must, upon request by City, provide a copy of all submitted schedule data in electronic format which must be clearly labeled with the Project description, scheduling program name and version number, and schedule print/data date.

6.2.7 Contractor must provide City with a monthly status report with each Project Schedule detailing the progress of the Work, including: (i) if the Work is proceeding according to schedule, (ii) any discrepancies, conflicts, or ambiguities found to exist in the Agreement Documents that require resolution, and (iii) other information detailing items that require resolution so as not to jeopardize the ability to complete the Work in the Agreement Time.

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6.2.8 With each Project Schedule submittal, Contractor must include a transmittal letter including the following:

a. Description of problem tasks, referenced to field instructions or requests for information (RFI's), as appropriate.

b. Current and anticipated delays including:

(i) Cause of the delay.

(ii) Corrective action and schedule adjustments to correct the delay.

(iii) Known or potential impacts and their delay on other activities, milestones, and their impact on the Substantial Completion and Final Acceptance dates.

(iv) Changes in construction sequence.

c. Pending items and status thereof including but not limited to:

(i) Time Extension requests;

(ii) Substantial Completion date status;

(iii) Final Acceptance date status.

d. If ahead of schedule, the number of calendar Days ahead.

e. If behind schedule, the number of calendar Days behind.

f. Other Project or scheduling concerns.

6.2.9 Critical Path Method (CPM).

6.2.9.1 Unless otherwise specified in the Agreement, the Project Schedule must include a Critical Path Method (CPM) diagram schedule showing the sequence of activities, the interdependence of each activity and identifies the Critical Path.

6.2.9.2 The CPM diagram schedule must be in calendar Days and indicate duration, earliest and latest start and finish dates for all activities, and total Float Times for all activities except critical activities. The CPM diagram must be presented in a time scaled graphical format for the Project as a whole.

6.2.9.3 The CPM diagram schedule must indicate all relationships between activities.

6.2.9.4 The activities making the Project Schedule must contain sufficient detail to assure that adequate planning has been done for proper execution of the Work and such that it provides an appropriate basis for monitoring and evaluation the progress of the Work. Individual activities must not exceed 30 Days in length, in most cases.

6.2.9.5 The CPM diagram schedule must be based upon activities, which coincide with the Schedule of Values.

6.2.9.6 The CPM diagram schedule must show all submittals associated with each work activity and the review time for each submittal.

6.2.10 Float Time.

6.2.10.1 The total Float Time within the overall schedule is for the exclusive use of City, but City may approve Contractor's use of Float as needed to meet Agreement Milestones and

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the Project completion date.

6.2.10.2 Contractor will not be allowed to sequence, hide, or reallocate Float Time through such strategies, as extending activity duration estimates to consume available Float, using preferential logic, or using extensive crew/resource sequencing, tec. No time extensions will be granted nor delay damages paid until a delay occurs which extends the Work beyond the Agreement Time.

6.2.11 City-Caused Delays. City-caused delays on the Project, if any, may be offset by City-caused time savings (i.e., Critical Path submittals returned in less time than allowed by the Agreement, approval of substitution requests and credit changes which result in savings of time to Contractor, etc.) In such an event, Contractor will not be entitled to receive a time extension or delay damages until all City-caused time savings are exceeded and the Agreement Time is also exceeded.

6.2.12 Rain-Related Delays. Contractor is required, in preparing the Project Schedule to take into account all relevant weather conditions, including normal rainfall and distribution. No additional compensation will be given for any rain-related delays or impacts on the Work or the Project Schedule. No time extension will be granted in the Project Schedule unless the rainfall during the construction of Work is unusually severe, was not reasonably anticipated, and the total rainfall was significantly in excess of the normal rainfall for the Project Site location. Normal rainfall for the Project will be determined from the 10-year average rainfall for the Site as measured by the National Oceanic and Atmospheric Administration or comparable source of reliable information for rainfall in Chandler, Arizona. In addition, the excessive rainfall must have actually impacted Work activities on the Critical Path and caused delay beyond any remaining Float at the time of the rain- caused delay. The burden of documenting normal rainfall, the excessive rainfall and the impact on Critical Path activities is on Contractor. All other provisions in the Agreement Documents relating to claims, including without limitation notice requirements, apply to any claim by Contractor for a rain delay.

6.2.13 City's "Policy Statement for Calculating Delays and Damages," Appendix 1 to these General Conditions, will apply to all claims of delay and delay damages.

6.2.14 Force Majeure. If Contractor is delayed or prevented from the performance of any Work required under this Agreement by reason of acts of God or other causes beyond the control and without fault of Contractor (financial inability excepted), performance of that Work will be excused, but only for the period of the delay. The time for performance of the Work will be extended for a period equivalent to the period of delay. In addition, the parties agree if Contractor's delayed or suspended performance directly arises out of or directly results from the COVID-19 pandemic, Contractor's delayed or suspended performance may be excused as set forth in this clause. Provided, however; Contractor must give the City written notice within 30 days of the occurrence of the event giving rise to COVID-19 pandemic related delayed or suspended performance. For COVID-19 pandemic related delay or suspended performance, the parties must agree in writing to the length of the excused delay or suspended performance. Further, Contractor must obtain the City's written approval to use any allowance established as part of the project for delays and costs related to the COVID-19 pandemic.

6.3 SUBSTANTIAL COMPLETION

6.3.1 When Contractor considers that the Work, phase or a portion thereof, which City agrees in

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writing to accept separately, is substantially complete, City will prepare and submit to Contractor a comprehensive Punch List of items to be completed or corrected prior to Final Acceptance and Final Payment. Failure to include an item on such Punch List does not alter the responsibility of Contractor to complete all Work in accordance with the Agreement Documents.

6.3.2 Upon receipt of Contractor's Punch List, Project Manager will make an inspection to determine whether the Work or designated portion thereof is substantially complete. Project Manager may, at Project Manager's sole option, be assisted in such inspection by the Design Professional for the Project. If the inspection by the Project Manager discloses any item, whether or not included on Contractor's Punch List, which is not sufficiently completed in accordance with the Agreement Documents so that City can occupy or utilize the Work, phase or designated portion thereof for its intended use, Contractor must, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by Project Manager. In such case, Contractor must then submit a request for another inspection by Project Manager to determine Substantial Completion.

6.3.3 Certificate of Substantial Completion.

6.3.3.1 The Project Manager will not issue a Certificate of Substantial Completion unless and until the Work (or separable units or Phases as provided in the Agreement Documents) is essentially and satisfactorily complete in accordance with the Agreement Documents, such that the Project is ready for use by City for its intended purpose, opening to the general public, full occupancy or use by City (including, without limitation, all separate units, or rooms, facilities, access, income-generating areas, and all areas serving the general public, as applicable, must be ready for full-operation without material inconvenience or discomfort), including, to the extent applicable to the Work, the following: all materials, equipment, systems, controls, features, facilities, accessories and similar elements are installed in the proper manner and in operating condition, inspected and approved; surfaces have been painted; masonry and concrete cleaned with any sealer or other finish applied; utilities and systems connected and functioning; site work complete; permanent heating, ventilation, air condition, vertical transportation and other systems properly operating with proper controls; lighting and electrical systems installed, operable and controlled; paving completed, signage installed, and other Work as applicable, has been performed to a similar state of essential and satisfactory completion. A minor amount of Work, as determined by and at the discretion of the Project Manager, such as installation of minor accessories or items, a minor amount of painting, minor replacement of defective work, minor adjustment of controls or sound systems, or completion or correction of minor exterior work that cannot be completed as a result of weather conditions, will not delay determination of Substantial Completion. If prior written approval is obtained from City for purposes of Substantial Completion, specified areas of the entire Work or Project may be individually certified as Substantially Complete. In no event will Substantial Completion be deemed to have occurred unless and until: (i) a temporary certificate of occupancy has been issued by the appropriate Governmental Authorities (as applicable) and (ii) all terms and Work required under this Agreement have been fulfilled by Contractor and same will have also been approved and accepted by City, subject only to the Punch List items.

6.3.3.2 If requested by City, Contractor must complete and turn-over to City the Project on a phased basis. Each phase will have a separate inspection by the Project Manager, a Punch List generated, and then an inspection by City with final approval and acceptance only after the

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Project Manager's Punch List.

6.4 **PARTIAL UTILIZATION**

6.4.1 City at City's option may use and occupy any substantially completed parts of the Work which has specifically been identified in the Agreement Documents, or which City, the Design Professional and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by City for its intended purpose, without significant interference with Contractor's performance of the remainder of the Work, provided, however, if the portion of the Work to be used or occupied has not been found to be substantially complete, City must do so in accordance with Section 6.3 prior to such occupancy.

6.4.2 In lieu of the issuance of a Certificate of Substantial Completion as to part of the Work, City may take over operation of a facility constituting part of the Work whether or not it is substantially complete if such facility is functionally and separately usable; provided that prior to any such takeover, City and Contractor agree in writing as to the division of responsibilities between City and Contractor for security, operation, safety, maintenance, correction period, heat, utilities and insurance with respect to such facility.

6.4.3 Substantial Completion of or City's beneficial occupancy of a part of the Project will not alter the fact that the one-year warranty for the whole Project starts at the date of Final Completion of the whole Project.

6.5 **FINAL ACCEPTANCE**

6.5.1 Unless otherwise expressly agreed to in writing by City, Final Acceptance must be obtained by no later than 30 Days (60 Days for federally funded agreements) after the date of Substantial Completion. Failure to timely obtain Final Acceptance will be a material breach of the Agreement.

6.5.2 Upon receipt of written notice that the Work is ready for final inspection and acceptance, City and Contractor will jointly inspect to verify that the remaining items of Work have been completed. There will be no partial acceptance. Final Acceptance will not occur until all items of Work, including Punch List Items, have been completed to City's satisfaction as reflected in the written Final Acceptance.

6.5.3 Final Payment will not be due, owing, or paid by City until Final Acceptance is issued.

6.5.4 Landscape Establishment Period. Unless otherwise expressly agreed to in writing by City, the Landscape Establishment Period will begin on the date of Final Acceptance of the Project and will run 90 Calendar Days thereafter. Landscape Establishment Period requirements are detailed in General Conditions Appendices, attached herein.

6.6 **CONTINUATION OF WORK**

6.6.1 Permitting Contractor to continue and finish the Work or any part of it after the time fixed for its completion (whether milestone, phase, Substantial Completion or Final Acceptance) or after the date to which the time fixed for any completion may have been extended, does not operate as a waiver by City of any rights under the Agreement Documents, law or equity.

6.6.2 Furthermore, the timely completion of the Work being of the utmost importance under this Agreement, notwithstanding the existence of one or more disputes between the parties

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concerning the scope of the Work, the Project Schedule, Agreement Time, payments or any other matter, and further notwithstanding a party's invocation of the Dispute Resolution provisions specified in Appendix 6 of these General Conditions, unless City suspends the Agreement or Contractor's performance pursuant to Section 10 of these General Conditions, Contractor will continue to prosecute the Work, including any Change Order work or Extra Work Orders, in a diligent and timely manner and not stop, slow down or impede by action or inaction the progress of the Work, including commencing performance of and thereafter completing any additional work called out in any Change Order or Extra Work Order issued by Project Manager with the approval of City, so long as City makes payment to Contractor in accordance with Section 8 of these General Conditions.

SECTION 7 - AGREEMENT PRICE

7.1 UNIT PRICE AGREEMENTS

7.1.1 The Agreement Price for all Unit Price Agreements will be the amount set forth in the Agreement or Change Order multiplied by the verified quantity provided.

7.1.2 Measurements of quantities to determine the total Agreement Price must be in accordance with MAG Specification §§ 109.1 and 109.2.

7.1.3 The Unit Price may only be changed as set forth in Section 9 below.

7.2 CHANGE ORDERS

7.2.1 Unit Price Change Orders. The Change Order Price for all Unit Price Change Orders will be the amount set forth in the Change Order multiplied by the verified quantity provided.

7.2.2 Measurements of quantities to determine the total Change Order Price must be in accordance with MAG Specifications §§ 109.1 and 109.2.

7.2.3 The Unit Price may only be changed as set forth in Section 9 below.

7.2.4 MAG Specification § 109.4.1 is modified as follows: Before § 109.4.1, the following is added: Any deduction or increase in the Agreement Price must be supported by a signed, written Change Order fully executed by City, and supported by such backup as the Project Manager may require.

7.3 SALES TAX

Contractor is required to pay all applicable sales tax in accordance with the law of the state of Arizona and this cost must be included in all Agreement Prices. When equipment, materials or supplies generally taxable to Contractor are eligible for a tax exemption due to the nature of the Project, Contractor must assist City in applying for and obtaining such tax credits and exemptions which will be paid or credited to City.

SECTION 8 - PAYMENT

8.1 PAYMENT FOR CONSTRUCTION SERVICES

8.1.1 Payment for the Work will be made in accordance with MAG Standard Specification § 109 as amended below.

8.1.2 Contractor must submit to City for review a completed Contractor Payment Request signed

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by Contractor, covering the Work completed as of the date of the Request and accompanied by such supporting documentation as is required by the Agreement Documents and also as City may reasonably require. A Contractor Payment Request will not be considered complete unless it is accompanied by an updated Project Schedule and a certification that the on-site, red lined, as built Drawings are up to date. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably, securely stored at the Site or at another location (such as a bonded warehouse) agreed to in writing, the Contractor Payment Request must also be accompanied by such data, satisfactory to City, as will establish City's title to the material and equipment and protect City's interest therein, including applicable insurance. Each subsequent Contractor Payment Request must include an affidavit of Contractor stating that all previous progress payments received on account of the Work have been applied to discharge in full all of Contractor's obligations reflected in prior Contractor Payment Requests.

8.1.3 Except for Work performed under a JOC Agreement, the Contracting Agency will retain 10 percent of all estimates as a guarantee for complete performance of the Agreement in accordance with Arizona Revised Statutes Section 34-221 or 34-607. The Contractor may elect to deposit securities in lieu of retention in accordance with Arizona Revised Statutes Section 34-221, Paragraph C.5. or 34-607, Paragraph B.5.

8.1.4 The payment process functions as follows: Prior to the payment cycle date, Contractor must send a draft Contractor Payment Request to Project Manager. The Project Team will review the Request and agree upon any necessary adjustments. Contractor must certify the final Request by signing and returning to Project Manager.

8.1.5 When construction of the Project is fifty percent (50%) completed, Contractor may request payment of one-half of the retention pursuant to A.R.S. § 34-609(B)(3), subject to all of City’s rights to withhold or offset payments, and other rights of City, under the Agreement.

8.1.6 City reserves the right under A.R.S. § 34-609(B)(3) to reinstate the ten percent (10%) retention if City determines that satisfactory progress is not being made.

8.1.7 Contractor’s Warranty of Title.

8.1.7.1 Contractor warrants and guarantees that title to all Work, materials and equipment covered by any Contractor Payment Request, whether incorporated in the Project or not, will pass to City at the time of payment, free and clear of all liens, claims, security interests, and encumbrances, provided that this will not preclude the Contractor from installing metering devices or other equipment of utility companies or municipalities, the title of which is commonly retained by the utility company or municipality.

8.1.7.2 No materials, supplies, or equipment for the Work under this Agreement will be purchased subject to any chattel mortgage or under a conditional sale contract or other agreement by which an interest therein, or any part thereof, is retained by the seller or supplier.

8.1.7.3 Nothing contained in this Section will defeat or impair the right of such persons furnishing materials or labor under any bond given by the Contractor for their protection, or any right under any law permitting such persons to look to funds due the Contractor in the hands of the City. The provisions of this Section must be inserted in all subcontracts and material agreements, and notices of its provision must be given to all persons furnishing materials for the Work when no formal agreement is entered into for such materials.

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8.2 **PAYMENT UPON SUBSTANTIAL COMPLETION**

8.2.1 No payment will be made upon Substantial Completion, except for a regularly-scheduled monthly progress payment, as allowed by Section 8.2.2.

8.2.2 No further payments will be made to Contractor until Final Acceptance.

8.3 **FINAL PAYMENT**

8.3.1 Subject to all of City's rights to withhold or offset payment, and other rights under the Agreement, Final Payment including remaining retainage will be paid only after:

a. Work has been fully completed (including completion of all incorrect or incomplete work items) and the written Final Acceptance has been issued by City;

b. Necessary operating manuals, any excess materials and supplies necessary for matching materials and supplies incorporated into the Work, acceptable sewer video results (if applicable), and complete "as-built" Drawings (including the Building Information Model, if required by the Agreement Documents) have been delivered to City, as specified in this Section 8.3;

c. Full and unconditional lien waivers and releases by Contractor and any person performing labor or supplying material, machinery, fixtures, or tools for the Work have been delivered to Contractor;

d. All conditions and requirements imposed by City or any financing entity for the corresponding disbursement have been met; and

e. Contractor delivers to City a Contractor Payment Request requesting Final Payment.

8.3.2 Contractor must also submit a signed copy of Contractor's Affidavit Regarding Settlement of Claims, Appendix 3 to these General Conditions, and Certificate of Completion, Appendix 7 to these General Conditions, prior to Final Payment.

8.3.3 In addition, if required under the Project Specific Special Provisions, Contractor must compile a complete equipment list and maintenance manual to be submitted to City as a precondition to Final Payment. The list must include the following items for all equipment supplied under the Plumbing, Electrical, Air Conditioning, Elevator, and other Special Equipment Specifications:

a. Name, Model and Manufacturer.

b. Complete parts lists and Drawings.

c. Local source of supply for replacement parts along with suppliers' telephone numbers.

d. Local service organizations serving the equipment and their telephone numbers.

e. All tags, inspection slips, instruction packages, etc., removed from equipment must be properly identified as to pieces of equipment from which they were taken.

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8.3.4 Contractor must also deliver to City, prior to Final Payment, one (1) digital (in the format specified by City), and if requested by City, one (1) hard copy, of any applicable Maintenance manuals. Each manual must include all manufacturer's operation and maintenance instructions and "as-built" Drawings with the list herein specified. It must also include all other diagrams and instructions necessary to properly operate and maintain the equipment, the name, address and telephone number of Contractor and all Subcontractors involved.

8.4 **CITY'S RIGHT TO WITHHOLD PAYMENT**

City may withhold payment to such extent as may be necessary in City's opinion to protect City from loss for which Contractor is responsible, including, without limitation, if any of the following conditions exist:

a. Defective Work not remedied;

b. Third party claims filed or reasonable evidence indicating probable filing of such claims unless security acceptable to City is provided by Contractor;

c. Failure of Contractor to make payments properly to Subcontractors or for labor, materials or equipment;

d. Reasonable evidence that the Work cannot be completed for the unpaid balance of the Agreement Price;

e. Damage to City or another Contractor;

f. Reasonable evidence that the Work will not be completed within the Agreement Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay;

g. Failure to carry out the Work in accordance with the Agreement Documents; or

h. Contractor is in default of any of its other obligations under the Agreement Documents.

8.5 **JOINT/DIRECT CHECKS**

To promote the timely completion and progress of the Work or when appropriate and necessary, payments to Contractor may be made jointly to Contractor and its employees, agents, Subcontractors and suppliers, or any of them. For federally funded agreements, see federal provisions for additional requirements for the joint check process.

8.6 **PAYMENT NOT A WAIVER**

No payment (nor use or occupancy of the Project by City) will be deemed acceptance or approval of the Work or as a waiver of any claims, rights, or remedies of City.

8.7 **LIENS AND BOND CLAIMS**

Contractor must make all payments, in the time required, of all labor and materials furnished to Contractor in the course of the Work and must promptly furnish evidence of such payments as City may require. Contractor must pay when due all claims arising out of performance of the Work covered by this Agreement for which a lien may be filed either against the real estate or leasehold interest of City, or against payments due from City to Contractor, or for which a claim may be made against any payment or performance bond or both. To the fullest extent permitted by law, Contractor agrees that no liens or other claims in the nature of a lien against the real estate, leasehold, or other interest of City,

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against payment due from City to Contractor, or against any payment or performance bond, must be filed or made in connection with the Work by any party who has supplied professional services, labor, materials, machinery, fixtures, tools, or equipment used in or in connection with the performance of this Agreement, and Contractor agrees to remove or to cause to be removed any such liens or claims in the nature of a lien or bond claim within 10 Days upon receiving notice or obtaining actual knowledge of the existence of such liens or claim. In addition, Contractor agrees to defend, indemnify, and hold harmless City from and against any and all such liens and claims. This paragraph does not apply to claims and liens of Contractor due to non-payment for work performed.

8.8 **FINANCIAL RECORDKEEPING AND CITY'S AUDIT RIGHT**

8.8.1 Records for all Agreements between City and Contractor must, upon reasonable notice, be open to inspection and subject to audit, scanning, and reproduction during normal business working hours. Such audits may be performed by any City's representative or any outside representative engaged by City for the purpose of examining such records. City or its designee may conduct such audits or inspections throughout the term of this Agreement and for a period of five years after Final Payment or longer if required by law. City's representatives may (without limitation) conduct verifications such as counting employees at the Site, witnessing the distribution of payroll, verifying information and amounts through interviews and written confirmations with Contractor employees, field and agency labor, Subcontractors, and vendors.

8.8.2 Contractor's "records" must include any and all information, materials and data of every kind and character, including without limitation, records, books, papers, documents, subscriptions, recordings, agreements, purchase orders, leases, contracts, commitments, arrangements, notes daily diaries, superintendent reports, drawings, receipts, vouchers and memoranda, and any and all other agreements, sources of information and matters that may in City's judgment have any bearing on or pertain to any matters, rights, duties or obligations under or covered by any Agreement Document. Such records must include (hard copy, as well as computer readable data if it can be made available), written policies and procedures; time sheets; payroll registers; payroll records; cancelled payroll checks; subcontract files (including proposals of successful and unsuccessful bidders, bid recaps, negotiation notes, etc.); original bid estimates; estimating work sheets; correspondence; Change Order files (including documentation covering negotiated settlements); back-charge logs and supporting documentation; invoices and related payment documentation; general ledger, information detailing cash and trade discounts earned, insurance rebates and dividends; and any other Contractor records which may have a bearing on matters of interest to City or the Project in connection with Contractor's dealings with City or the Project (all foregoing hereinafter referred to as "records") to the extent necessary to adequately permit evaluation and verification of any or all of the following:

a. Compliance with Agreement requirements for deliverables;

b. Compliance with approved Plans and Specifications;

c. Compliance with § 14.9 below;

d. Compliance with Agreement provisions regarding the pricing of Change Orders;

e. Accuracy of Contractor representations regarding the pricing of invoices; or

f. Accuracy of Contractor representations related to claims submitted by

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Contractor or any of their employees.

8.8.3 Contractor must require all payees (examples of payees include Subcontractors, Suppliers, Insurance Carriers, etc.) to comply with the provisions of this Section by including the requirements hereof in a written agreement between Contractor and payee. Contractor will ensure that all payees (including those entering into lump sum agreements) have the same right to audit provisions contained in this Agreement included in their agreements with Contractor.

8.8.4 City's authorized representative(s) (including, without limitation, Project Manager) must have reasonable access to Contractor's facilities, must be allowed to interview all current or former employees to discuss matters pertinent to the performance of this Agreement and must be provided adequate and appropriate work space, in order to conduct audits in compliance with this Section.

8.8.5 If an audit inspection or examination in accordance with this Section, discloses overpricing or overcharges to City (of any nature) by Contractor or Contractor's Subcontractors in excess of $100,000 in addition to making adjustments for the overcharges, the reasonable actual cost of City's audit must be reimbursed to City by Contractor. Any adjustments or payments which must be made as a result of any such audit or inspection of Contractor's invoices or records must be made within a reasonable amount of time (not to exceed 90 Days) from presentation of City's findings to Contractor.

8.8.6 In addition to the normal paperwork documentation Contractor typically furnishes to City, Contractor agrees to furnish, upon written request from City, any of the documentation necessary for City to exercise its audit rights under this Section 8.8 in computer readable file formats (Word, Excel, or .pdf), as City may designate.

8.8.7 City, its authorized representative, and the appropriate agency, reserve the right to audit Contractor's records in compliance with local, state or federal policies, statutes or at City's discretion, within three (3) years of Final Acceptance of the Work.

SECTION 9 - CHANGES TO THE AGREEMENT

9.1 **FIELD ORDERS**

City may authorize minor changes in the Work not involving an adjustment in the Agreement Price or the Agreement Times, which are consistent with the overall intent of the Agreement Documents. These may be accomplished by a written Field Order on the standard form approved and executed by City. Such Field Orders must be binding and Contractor must perform the change promptly. If Contractor believes that a Field Order justifies an increase in the Agreement Price or Agreement Time, Contractor may make a claim therefor as provided in Section 7.2.

9.2 **EXTRA WORK/CHANGES IN THE WORK**

9.2.1 City reserves the right to make such changes in the Plans and Specifications for the Work, as it may deem appropriate and any such change as set forth in a written Change Order must be deemed a part of this Agreement as if originally incorporated herein.

9.2.2 In the event City and Contractor cannot agree on the terms of a Change Order, or when circumstances otherwise require, the Project Manager has the authority to direct the Contractor to perform extra work, if the work in question is an item not provided for in the

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Agreement as awarded. The Project Manager will have the authority to determine, based upon factual evidence presented by the Contractor, whether the work in question is an item not provided for in the Agreement as awarded. If the Project Manager directs the Contractor to perform extra work, the Project Manager's instructions will include a price that the Contractor cannot exceed in charging the City for the extra work. Upon receipt of the Project Manager's directions to perform extra work, the Contractor must promptly proceed with the extra work and document the actual cost thereof. Contractor's right to payment for extra work will be determined under Subsection 9.2.4 below. The Contractor is responsible to manage the extra work to ensure that the price limits set by the Project Manager are not exceeded. Contractor must perform the extra work and submit documentation for the actual cost of the extra work to the City. A Change Order will be issued to cover this work.

9.2.3 Contractor will not be entitled to payment for extra work unless a written Change Order, in form and content prescribed by City, has been executed by City. On all requests for Change Orders, Contractor must specify the increased or decreased costs and whether it believes any extensions of time will be necessary to complete its Work as modified by the Change Order. If extra work is performed under Subsection 9.2.2 above, a corresponding Change Order will be prepared, approved and processed by City before payment can be made to Contractor.

9.2.4 In general, pricing for Change Orders will include the same mark-up percentages that were in effect when the Agreement was awarded. The cost or credit to the City resulting from a change in the Work is subject to Appendix 1 (Policy Statement for Calculating Delays and Damages) and will be determined, based on the type of pricing for the Agreement involved, as follows:

a. By mutual acceptance of a lump sum properly itemized in a form acceptable to City;

b. By unit prices stated in the Agreement Documents;

c. When the City determines that a Unit Price Book Job Order associated with a Job Order Agreement requires a Change Order, by using the same Total Cost Data and CCI that are in effect when the Change Order is anticipated to be issued; or

d. By actual cost and a percentage fee covering overhead and profit, as follows:

(i) Contractor will perform the extra work and be compensated for actual cost of labor, materials and equipment.

(ii) Contractor will have the right to add the fee percentage applicable to the Work under the Agreement, or if no such fee has been agreed to by the parties, not more than five percent (5%) to the Subcontractor's prices for authorized extra work performed solely by Subcontractors. Such percentage will include all of Contractor's charges for overhead, profit, administration and supervision.

(iii) Contractor or Subcontractor will have the right to add the fee percentage applicable to Work under the Agreement for self-performed extra work, or if no such fee has been agreed to by the parties, Contractor's or Subcontractor's maximum total allowable additions for overhead, profit, administration and supervision will

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not exceed ten percent (10%) of actual verifiable labor, materials and equipment for such self- performed extra work.

9.2.5 Any agreement which modifies the terms of the Agreement (including Change Orders) will be approved in writing by the Project Manager. Once properly executed by both parties, these modifications to the Agreement will have the same effect as if they had been included in the original Agreement.

9.3 **ACCURACY OF CHANGE ORDER PRICING INFORMATION**

9.3.1 Subject to Sections 9.3.2 through 9.3.4, signature by the contracting parties constitutes full accord and satisfaction between City and Contractor for all costs, damages, and expenses of whatever kind of nature, including delay, impact or acceleration damages, which may be occasioned by a Change Order of other modification of the Agreement agreed to in writing.

9.3.2 Accurate Change Order Pricing Information: Contractor agrees that it is responsible for submitting accurate cost and pricing data to City to support its Fixed Price, Unit Price, or Cost Plus Change Order Proposals or other Agreement Price adjustments under the Agreement. Contractor further agrees to submit Change Order proposals with cost and pricing data which is accurate, complete, current, and in accordance with the terms of the Agreement with respect to pricing of change orders. Contractor agrees that any "buy-out savings" on Change Orders will accrue 100% to Owner. "Buy-out savings" are defined as any savings negotiated by the Contractor with a Subcontractor or a Material Supplier after receiving approval of a Change Order amount that was designated to be paid to a specific Subcontractor or Supplier for the Approved Change Order work.

9.3.3 Right to Verify Change Order Pricing Information: Contractor agrees that City, through its designated representative, will have the right to examine, copy, and scan the records of the Contractor, Subcontractor or Sub-Subcontractor's records (during the Agreement period and up to three years after final payment is made on the Agreement) to verify the accuracy and appropriateness of the pricing data used to price all Change Order proposals or claims. Contractor agrees that if City determines the cost and pricing data submitted (whether approved or not) was inaccurate, incomplete, not current, or not in compliance with the terms of the Agreement regarding pricing of Change Orders, an appropriate Agreement Price adjustment will be made. Such post-approval Contact Price adjustments will apply to all levels of contractors and Subcontractors and to all types of Change Order proposals, specifically including Fixed Price, Unit Price, and Cost Plus Change Orders.

9.3.4 Requirements for Detailed Change Order Pricing Information: Contractor agrees to provide a detailed breakdown of allowable labor and labor burden cost (i.e., base wage rate of applicable classifications of workers, payroll taxes, and insurance and benefits costs). This information will be used to evaluate the potential cost of labor and labor burden related to Change Order work. It is intended that this information represent an accurate estimate of the Contractor's actual labor and labor burden cost components. Information is not intended to establish fixed billing or Change Order pricing labor rates. However, at the time Change Orders are priced, the submitted cost data for labor rates may be used to price Change Order work. The accuracy of any such agreed upon labor rate cost components used to price Change Orders will be subject to later audit. Approved Change Order amounts may be adjusted later to correct the impact of inaccurate labor cost components if the agreed upon labor cost components are determined to be inaccurate.

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9.4 **EMERGENCIES**

In any emergency affecting the safety of persons or property, Contractor will act, at its discretion, to prevent threatened damage, injury or loss. Any change in the Agreement Price or Agreement Time resulting from emergency work will be determined as provided in this Section.

9.5 **DIFFERING SITE CONDITIONS**

9.5.1 If Differing Site Conditions are encountered at the Project Site, then notice by the observing party must be given to the other party promptly before conditions are disturbed (to the extent practicable) and in no event later than 14 Days after first observance of the conditions. City will promptly investigate such conditions and, if City determines that Differing Site Conditions exist and they materially cause an increase in the cost of, or time required for, performance of any part of the Work, Contractor will be entitled to equitable adjustment in the Agreement Price or Construction Schedule (and other time requirements), or both. If it is determined by City that the conditions at the Project Site are not Differing Site Conditions and no change is justified, then City will so notify Contractor in writing, stating the reasons. Claims in opposition to such determination must be made within 14 Days after City has given notice of its decision. If City and Contractor cannot agree on an adjustment in the Agreement Price or Construction Schedule (and other time requirements), the adjustment may be submitted to dispute resolution as provided these General Conditions.

9.6 **CHANGES IN LAWS, REGULATIONS, OR LEGAL REQUIREMENTS OR TAXES**

In the event of a material change in applicable Laws, Regulations, or Legal Requirements, or taxes subsequent to the date of the Agreement by the parties, Contractor may be entitled to a Change Order, in City's discretion, to the extent Contractor can document to the satisfaction of City that such change significantly increases Contractor's actual cost of performance of the Work.

SECTION 10 -SUSPENSION AND TERMINATION

10.1 **SUSPENSION**

City may suspend the Agreement and Contractor's performance in accordance with MAG Specifications § 105.1 and 108.7.

10.2 **TERMINATION BY THE CITY FOR CAUSE**

10.2.1 MAG Specifications § 108.11 applies to the Agreement.

10.2.2 City may also terminate the Agreement if City determines, in its sole discretion that Contractor has:

a. After prior written notice, refused or failed to supply enough properly skilled workers or proper materials;

b. After prior written notice, failed to make payment to Subcontractors for materials or labor in accordance with the respective agreements between Contractor and the Subcontractors;

c. After prior written notice, disregards laws, ordinances, or rules, regulations or orders of a public authority having jurisdiction;

d. After prior written notice, repeatedly failed to comply with written directives from City;

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e. Is adjudged as bankrupt or insolvent;

f. Made a general assignment for the benefit of creditors;

g. Appointed a trustee or receiver for itself or any of its property;

h. Filed a petition to take advantage of any debtor's act, or to reorganize under the bankruptcy or similar laws; or

i. Otherwise breached a provision of the Agreement Documents or any other Agreement between City and Contractor.

10.2.3 When any of the above reasons exist, City may terminate the Agreement, without prejudice to any other rights or remedies of City, after giving Contractor and Contractors' surety, if any, 7 Days written notice of City's intent to terminate the Agreement and Contractor's failure to cure any such reasons. Upon such termination, City may: (1) take possession of the Site and of all materials thereon owned by Contractor; or (2) finish the Work by whatever reasonable method City may deem expedient. When City terminates the Agreement for one of the reasons state above, Contractor will not be entitled to receive further payment until the Work is finished. If the unpaid balance of the Agreement Price existing at the time of such termination exceeds the costs and expenses of finishing the Work and any other damages incurred by City, such excess will be paid to Contractor. If such costs, expenses and damages exceed such unpaid balance, Contractor must pay the difference to City. This obligation for payment will survive termination of the Agreement.

10.3 **TERMINATION BY CITY FOR CONVENIENCE**

City may also terminate the Agreement at any time for its convenience upon 7 Days written notice to Contractor specifying the termination date. In the event of termination which is not the fault, in whole or in part, of Contractor, City will pay to Contractor only such compensation, including reimbursable expenses, due for Work properly performed on the Project prior to the termination date. Upon any termination of the Agreement, no further payments will be due from City to Contractor.

10.4 **A.R.S. § 38-511**

The Agreement is subject to, and may be terminated by City in accordance with, the provisions of A.R.S. § 38-511.

SECTION 11 -INSURANCE AND BONDS

11.1 **INSURANCE REQUIREMENTS**

11.1.1 After Agreement award, the Contractor must furnish the City a certificate of insurance on a standard insurance industry ACORD form. The ACORD form must be issued by an insurance company authorized to transact business in the State of Arizona possessing a current A.M. Best, Inc. rating of A-7, or better and legally authorized to do business in the State of Arizona with policies and forms satisfactory to City. Provided, however, the A.M. Best rating requirement may not be deemed to apply to required Worker's Compensation coverage.

11.1.2 The Contractor and any of its Subcontractors must procure and maintain, until all of their obligations have been discharged, including any warranty periods under this Agreement are satisfied, the insurances set forth below.

11.1.3 The insurance requirements set forth below are minimum requirements for this Agreement and in no way limit the indemnity covenants contained in this Agreement.

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11.1.4 The City in no way warrants that the minimum insurance limits contained in this Agreement are sufficient to protect Contractor from liabilities that might arise out of the performance of the Agreement services under this Agreement by Contractor**,** its agents, representatives, employees, or Subcontractors and the Contractor is free to purchase any additional insurance as may be determined necessary.

11.1.5 Failure to demand evidence of full compliance with the insurance requirements in this Agreement or failure to identify any insurance deficiency will not relieve the Contractor from, nor will it be considered a waiver of its obligation to maintain the required insurance at all times during the performance of this Agreement.

11.1.6 Use of Subcontractors: If any Work is subcontracted in any way, the Contractor must execute a written agreement with Subcontractor containing the same Indemnification Clause and Insurance Requirements as the City requires of the Contractor in this Agreement. The Contractor is responsible for executing the Agreement with the Subcontractor and obtaining Certificates of Insurance and verifying the insurance requirements.

11.2 **MINIMUM SCOPE AND LIMITS OF INSURANCE**

11.2.1 The Contractor must provide coverage with limits of liability not less than those stated below.

11.2.1.1 Commercial General Liability-Occurrence Form. Contractor must maintain "occurrence" form Commercial General Liability insurance with a limit of not less than $2,000,000 for each occurrence, $4,000,000 aggregate. Said insurance must also include coverage for products and completed operations, independent contractors, personal injury and advertising injury. If any Excess insurance is utilized to fulfill the requirements of this paragraph, the Excess insurance must be "follow form" equal or broader in coverage scope than underlying insurance.

11.2.1.2 Automobile Liability-Any Automobile or Owned, Hired and Non-Owned Vehicles. Contractor must maintain Business/Automobile Liability insurance with a limit of $1,000,000 each accident on Contractor owned, hired, and non-owned vehicles assigned to or used in the performance under this Agreement. If any Excess or Umbrella insurance is utilized to fulfill the requirements of this paragraph, the Excess or Umbrella insurance must be "follow form" equal or broader in coverage scope than underlying insurance.

11.2.1.3 Workers Compensation and Employers Liability Insurance. Contractor must maintain Workers Compensation insurance to cover obligations imposed by federal and state statutes having jurisdiction of Contractor employees engaged in the performance of Work under this Agreement and must also maintain Employers' Liability insurance of not less than $1,000,000 for each accident and $1,000,000 disease for each employee.

11.2.1.4 Builders' Risk/Installation Floater Insurance. The Contractor bears all responsibility for loss to all equipment or Work under construction. Unless waived in writing by the City the Contractor will purchase and maintain in force Builders' Risk/Installation Floater insurance on the entire Work until completed and accepted by the City. This insurance will be Special Causes of Loss policy form, (minimally including perils of fire, flood, lightning, explosion, windstorm and hail, smoke, aircraft and vehicles, riot and civil commotion, theft, vandalism, malicious mischief, and collapse), completed value, replacement cost policy form equal to the Agreement Price and all subsequent modifications. The Contractor's Builders'

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Risk/Installation Floater insurance must be primary and not contributory.

a. Builders' Risk/Installation Floater insurance must cover the entire Work including reasonable compensation for architects and engineers' services and expenses and other "soft costs" made necessary by an insured loss. Builders' Risk/Installation Floater insurance must provide coverage from the time any covered property comes under the Contractor's control and or responsibility, and continue without interruption during course of construction, renovation and or installation, including any time during which any Project property or equipment is in transit, off Site, or while on Site for future use or installation. Insured property must include, but not be limited to, scaffolding, false work, and temporary buildings at the Site. This insurance must also cover the cost of removing debris, including demolition as may be legally required by operation of any law, ordinance, regulation or code.

b. The Contractor must also purchase and maintain Boiler and Machinery insurance with the same requirements as Builders' Risk/Installation Floater insurance cited above if the Work to be performed involves any exposures or insurable property normally covered under a Boiler and Machinery insurance policy or made necessary as required by law or testing requirements in the performance of this Agreement. The Contractor will be responsible for any and all deductibles under these policies and the Contractor waives all rights of recovery and subrogation against the City under the Contractor- Builders' Risk/Installation Floater insurance described herein.

c. Builders' Risk/Installation Floater Insurance must be maintained until whichever of the following first occurs: (i) final payment has been made; or, (ii) until no person or entity, other than the City, has an insurable interest in the property required to be covered.

d. The Builders' Risk/Installation Floater insurance must be endorsed so that the insurance will not be canceled or lapse because of any partial use or occupancy by the City.

e. The Builders Risk/Installation Floater insurance must include as named insureds, the City, the Contractor, and all tiers of Subcontractors and others with an insurable interest in the Work who will be named as additional insureds unless they are able to provide the same level of coverage with the City and Contractor named as additional insureds. Certificates must contain a provision that the insurance will not be canceled or materially altered without at least 30 Days advance notice to the City. The City must also be named as a Loss Payee under the Builders' Risk/Installation Floater coverage.

f. The Builders Risk/Installation Floater insurance must be written using the Special Causes of Loss policy form, replacement cost basis.

g. All rights of subrogation under the Builders Risk/Installation Floater insurance are, by this Agreement, waived against the City, its officers, officials, agents and employees.

h. The Contractor is responsible for payment of all deductibles under the Builders' Risk/Installation Floater insurance policy.

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11.2.1.5 Pollution Liability Insurance (Including Errors and Omissions). For Job Orders, Pollution Liability Insurance is only required if applicable and determined on a project specific basis. Contractor must maintain Pollution Liability Insurance with a limit of not less than $5,000,000 per loss, $5,000,000 aggregate for losses caused by pollution conditions including coverage for bodily injury, property damage, defense costs, clean-up costs, and completed operations that arise from the operations of Contractor as described in this Agreement.

a. The policy must provide for complete professional service coverage, including coverage for pollution liability that is a result of a breach of professional duties.

b. The policy must provide for protection again claims for third-party bodily injury, property damage, or environmental damage caused for pollution conditions resulting from general contracting activities for which Contractor is legally liable.

c. The policy must provide for cleanup costs when mandated by governmental entities, when required by law, or as a result of third-party claims.

d. Completed Operations Coverage must be kept in place for up to the statute of repose.

e. The policy must be endorsed to include the following additional insured language: “City, its elected officials, trustees, employees, agents, and volunteers must be named as additional insureds with respect to liability arising out of the activities performed by, or on behalf of Contractor”.

f. If Work under this Agreement requires the transportation of any hazardous material or regulated substances, Contractor must carry Auto Liability with a CA 9948 endorsement or equivalent.

g. If Work under this Agreement requires the disposal of any hazardous materials from the job site, Contractor must obtain a certificate of insurance for Pollution Legal Liability from the disposal site operator with a limit of not less than $5,000,000 per loss, $5,000,000 aggregate.

11.3 **ADDITIONAL POLICY PROVISIONS REQUIRED**

11.3.1 Self-Insured Retentions or Deductibles. Any self-insured retentions and deductibles must be declared and approved by the City. If not approved, the City may require that the insurer reduce or eliminate any deductible or self-insured retentions with respect to the City, its officers, officials, agents, employees, and volunteers.

11.3.2 The Contractor’s insurance must contain broad form contractual liability coverage.

11.3.3 The Contractor's insurance coverage must be primary insurance with respect to the City, its officers, officials, agents, and employees. Any insurance or self-insurance maintained by the City, its officers, officials, agents, and employees will be in excess of the coverage provided by the Contractor and must not contribute to it.

11.3.4 The Contractor's insurance must apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability.

11.3.5 Coverage provided by the Contractor must not be limited to the liability assumed under the

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indemnification provisions of this Agreement.

11.3.6 The policies must contain a severability of interest clause and waiver of subrogation against the City, its officers, officials, agents, and employees, for losses arising from Work performed by the Contractor for the City.

11.3.7 The Contractor, its successors and or assigns, are required to maintain Commercial General Liability insurance as specified in this Agreement for a minimum period of 3 years following completion and acceptance of the Work. The Contractor must submit a Certificate of Insurance evidencing Commercial General Liability insurance during this 3 year period containing all the Agreement insurance requirements, including naming the required Additional Insureds set forth herein.

11.3.8 If a Certificate of Insurance is submitted as verification of coverage, the City will reasonably rely upon the Certificate of Insurance as evidence of coverage but this acceptance and reliance will not waive or alter in any way the insurance requirements or obligations of this Agreement.

11.3.9 Insurance Cancellation During Agreement Term.

11.3.9.1 If any of the required policies expire during the life of this Agreement, the Contractor must forward renewal or replacement Certificates to the City within 10 Days after the renewal date containing all the required insurance provisions.

11.3.9.2 Each insurance policy required by the insurance provisions of this Agreement must provide the required coverage and must not be suspended, voided or canceled except after 30 Days prior written notice has been given to the City, except when cancellation is for non-payment of premium, then 10 Days prior notice may be given. Such notice must be sent directly to Chandler Law-Risk Management Department, Post Office Box 4008, Mailstop 628, Chandler, Arizona 85225. If any insurance company refuses to provide the require notice, the Contractor or its insurance broker must notify the City of any cancellation, suspension, non-renewal of any insurance within 7 Days of receipt of insurers' notification to that effect.

11.3.10 City as Additional Insured. The above-referenced policies are to contain, or be endorsed to contain, the following provisions:

11.3.10.1 The Commercial General Liability and Automobile Liability policies are to contain, or be endorsed to contain, the following provisions: The City, its officers, officials, agents, and employees are additional insureds with respect to liability arising out of activities performed by, or on behalf of, the Contractor including the City's general supervision of the Contractor; Products and Completed Operations of the Contractor; and automobiles owned, leased, hired, or borrowed by the Contractor.

11.3.10.2 The City, its officers, officials, agents, and employees must be additional insureds to the full limits of liability purchased by the Contractor even if those limits of liability are in excess of those required by this Agreement.

11.4 BONDS AND OTHER PERFORMANCE SECURITY

11.4.1 After Agreement award, Contractor must provide a Performance Bond and a Payment Bond, each in an amount equal to the full amount of the Agreement Price.

11.4.2 Each such bond must be executed by a surety company or companies holding a Certificate

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of Authority to transact surety business in the State of Arizona, issued by the Director of the Arizona Department of Insurance and must be named in the current list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (amended) by the Audit Staff Bureau of Accounts, U.S. Treasury Department. A copy of the Certificate of Authority must accompany the bonds. The Certificate must have been issued or updated within two (2) years prior to the execution of this Agreement. The bonds must be written or countersigned by an authorized representative of the surety who is either a resident of the state of Arizona or whose principal office is maintained in this state, as by law required.

11.4.3 The bonds must be made payable and be acceptable to City. The bond forms for the performance and payment bonds must be in the forms required under A.R.S. § 34-221, *et. Seq.,* as in Appendices 4 and 5 of these General Conditions.

11.4.4 Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Agreement Documents, Contractor must promptly furnish a copy of the bonds or must permit a copy to be made.

11.4.5 All bonds submitted for this Project must be provided by a company which has been rated AM Best rating of A- or better for the prior four quarters by the latest edition of the 'Results Best's Key Rating Guide (Property/Casualty)" published by the A.M. Best Company.

11.4.6 Personal or individual bonds are not acceptable.

11.4.7 If the surety on any Bond furnished by Contractor is declared a bankrupt or becomes insolvent, or Contractor's right to do business is terminated in any state where any part of the Project is located, or it ceases to meet the requirements of this Section 11.4, Contractor must within 5 Days thereafter substitute another Bond and surety, both of which must be acceptable to City.

SECTION 12 - INDEMNIFICATION

12.1 To the extent permitted by law, the Contractor and its owners, officers, directors, agents, employees, and subconsultants (collectively "lndemnitor") must indemnify, save, and hold harmless the City and its officers, officials, agents, and employees (collectively "lndemnitee") from any and all claims, actions, liabilities, damages, losses, or expenses (including court costs, attorneys' fees, and costs of claim processing, investigation, and litigation) (collectively "Claims") caused or alleged to be caused, in whole or in part, by the negligent, reckless, wrongful, or willful acts, errors, or omissions of Indemnitor in connection with this Agreement. This indemnity includes any Claim or amount arising out of or recovered under workers' compensation laws or on account of Indemnitor's failure to conform to any federal, state, or local law, statute, ordinance, rule, regulation, or court decree. Indemnitor must indemnify lndemnitee from and against any and all Claims, except those arising solely from lndemnitee's own negligent, reckless, wrongful, or willful acts, errors, or omissions. Indemnitor is responsible for primary loss investigation, defense, and judgment costs where this indemnification applies. In consideration of the award of this Agreement, Indemnitor agrees to waive all rights of subrogation against lndemnitee for losses arising from or related to this Agreement. Indemnitor's obligations under this provision survive the termination or expiration of this Agreement.

SECTION 13 -DISPUTE RESOLUTION

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13.1 All disputes arising out of or relating to the Agreement, the Work or the Project, other than termination under Section 10, will be resolved pursuant to the Dispute Resolution process set forth in Appendix 6 of these General Conditions, and not pursuant to MAG Specifications § 110.

13.2 Contractor agrees that during any dispute between the parties, Contractor will continue to perform its obligations under the Agreement until such dispute is resolved.

13.3 Notwithstanding any other provision in this Agreement, City has the right to immediately file in court and pursue an action for a temporary restraining order and injunctive relief against Contractor if City determines that such action is necessary to protect its interests under the Agreement, to obtain specific performance of any provision of the Agreement, to advance the completion of the Project, or to protect health, welfare and safety.

SECTION 14 - MISCELLANEOUS PROVISIONS

14.1 AGREEMENT DOCUMENTS

14.1.1 The Agreement Documents are intended to permit the parties to complete the Work and all obligations required by the Agreement Documents within the Agreement Times for the Agreement Price. The Agreement Documents are intended to be complementary and interpreted in harmony so as to avoid conflict, with words and phrases interpreted in a manner consistent with construction and design industry standards.

14.1.2 It is the intent of the Agreement Documents to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Agreement Documents. Any labor, documentation, services, materials, or equipment that may reasonably be inferred from the Agreement Documents or from prevailing custom or trade usage as being required to produce the intended result must be provided by Contractor whether or not specifically called for at no additional cost to City.

14.1.3 The Agreement Documents establish the rights and obligations of the parties and include the Agreement, Addenda (which pertain to the Agreement Documents), Contractor's Bid or Proposal (including documentation accompanying the Bid and any post-Bid documentation submitted prior to Agreement award) when attached as an exhibit to the Agreement, the accepted Project Schedule, the Notice to Proceed, the Performance Bond, the Payment Bond, Project Design, Engineering and Specifications, these General Conditions, the Project Specific Special Provisions, Technical Specifications, Agreement Drawings, as the same may be more specifically identified in the Agreement, Change Orders, Work Change Directives, Field Orders and the written interpretations and clarifications of the Design Professional or City representative and Modifications issued after execution of the Agreement. Approved Shop Drawings and the reports and drawings of subsurface and physical conditions are not Agreement Documents.

14.1.4 In the event of any inconsistency, conflict, or ambiguity between or among the Agreement Documents, the Agreement Documents will take precedence as follows from highest to lowest: Change Orders, Addenda, Agreement, Project Specific Special Provisions, General Conditions, Technical Specifications, Drawings/Plans, Chandler Amendments to MAG Standard Specifications and Chandler Standard Details, and MAG Uniform Standard Specifications and Details for Public Works Construction. If applicable to this Agreement, Federal Provisions prevail.

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14.1.5 On the Drawings, given dimensions will take precedence over scaled measurements and large scale drawings over small-scale drawings.

14.1.6 Clarifications and interpretations of the Agreement Documents will be issued by the Design Professional through the City.

14.1.7 The headings used in this Agreement or any other Agreement Documents, are for ease of reference only and must not in any way be construed to limit or alter the meaning of any provision.

14.1.8 The Agreement Documents form the entire agreement between City and Contractor. No oral representations or other agreements have been made by the parties except as specifically stated in the Agreement Documents.

14.1.9 The Agreement Documents may not be changed, altered, or amended in any way except in writing signed by a duly authorized representative of each party in the form of a Change Order.

14.1.10 Re-Use of Documents. Neither Contractor nor any Subcontractor, manufacturer, fabricator, supplier or distributor will have or acquire any title to or ownership rights in any of the Drawings, Specifications or other documents (or copies of any thereof) prepared by or bearing the seal of the Design Professional; and they must not re-use any of them on extensions of the Project or any other project without written consent of City and the Design Professional and specific written verification or adaptation by the Design Professional.

14.2 **REFERENCE STANDARDS**

14.2.1 Reference to standards, specifications, manuals, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, will mean the standard, specification, manual, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Agreement if there were no Bids), except as may be otherwise specifically stated in the Agreement Documents.

14.2.2 The provisions of any such standard, specification, manual or code, or any instruction of a Supplier will not change the duties or responsibilities of City, Contractor, Design Professional or Project Manager, or any of their Subcontractors, consultants, agents, or employees from those set forth in the Agreement Documents, nor will any such provision or instruction assign to City, Contractor, Design Professional, or any of their agents, or employees any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the Agreement Documents.

14.3 **COMPLIANCE WITH ARIZONA LAW AND FEDERAL LAW**

14.3.1 Compliance with A.R.S. § 41-4401. Pursuant to the provisions of A.R.S. § 41-4401, the Contractor hereby warrants to the City that the Contractor and each of its subcontractors ("Subcontractors") must comply with all Federal Immigration laws and regulations that relate to the immigration status of their employees and the requirement to use E-Verify set forth in A.R.S. §23-214(A).

14.3.2 A breach of the Contractor Immigration Warranty constitutes a material breach of this Agreement and subject to penalties up to and including termination of this Agreement.

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14.3.3 The City retains the legal right to inspect the papers of any Contractor or Subcontractor employee who works on this Agreement to ensure that the Contractor or Subcontractor is complying with the Contractor Immigration Warranty. The Contractor agrees to assist the City in the conduct of any such inspections.

14.3.4 The City may, at its sole discretion, conduct random verifications of the employment records of the Contractor and any Subcontractors to ensure compliance with Contractors Immigration Warranty. The Contractor agrees to assist the City in performing any such random verifications.

14.3.5 The provisions of this Article must be included in any agreement the Contractor enters into with any and all of its subcontractors who provide services under this Agreement or any subcontract. "Services" are defined as furnishing labor, time or effort in the State of Arizona by a contractor or subcontractor. Services include construction or maintenance of any structure, building or transportation facility or improvement to real property.

14.4 **HAZARDOUS ENVIRONMENTAL CONDITIONS**

14.4.1 Contractor will not be responsible for any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in Drawings or Specifications or identified in the Agreement Document to be within the scope of the Work. Contractor will be responsible for a Hazardous Environmental Condition created with any materials brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible.

14.4.2 If Contractor encounters a Hazardous Environmental Condition or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition. Contractor must immediately:

a. Secure or otherwise isolate such condition;

b. Stop all Work in connection with such condition and in any area affected thereby; and

c. Notify City and promptly thereafter confirm such notice in writing.

14.4.3 City will promptly retain a qualified expert to evaluate such condition or take corrective action, if any.

14.4.4 Contractor will be responsible for any and all civil or criminal penalties, fines, damages, or other charges imposed by any regulatory agency or court for sewage discharges that are in violation of applicable statutes and laws and that are a result, direct or indirect, of work performed under this Agreement. Contractor will also be responsible for reimbursement to City for administration, reporting, and tracking expenses required as a result of any spill event. In the event the regulatory agency or court imposes a probationary period, Contractor must post bond for the probationary period to ensure that all such costs are reimbursed to City. This responsibility will apply whether penalties are imposed directly on Contractor or any of its Subcontractors, or the City of Chandler. Contractor must defend and indemnify City against such penalties. Regulatory agencies may include, but are not limited to, the Arizona Department of Environmental Quality (ADEQ) and the United States Environmental Protection Agency (USEPA).

14.5 **COOPERATION AND FURTHER DOCUMENTATION**

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Contractor agrees to provide City such other duly executed documents as may be reasonably requested by City to implement the intent of the Agreement Documents.

14.6 **ASSIGNMENT**

Neither Contractor nor City will, without the written consent of the other assign, transfer or sublet any portion of this Agreement or part of the Work or the obligations required by the Agreement Documents, any such assignment will be void, will transfer no rights to the purported assignee, and would be a material breach of the Agreement.

14.7 **SUCCESSORS**

Contractor and City intend that the provisions of the Agreement Documents are binding upon the parties, their employees, agents, heirs, successors and assigns.

14.8 **LAWFUL PRESENCE**

Pursuant to A.R.S. §§ 1-501 and 1-502, City is prohibited from awarding an agreement to any natural person who cannot establish that such person is lawfully present in the United States. To establish lawful presence, a person must produce qualifying identification and sign a City-provided affidavit affirming the identification provided is genuine. This requirement will be imposed at the time of agreement award. This requirement does not apply to business organizations such as corporations, partnerships, or limited liability companies.

14.9 **NO BOYCOTT OF ISRAEL CERTIFICATION**

By Contractor's signature on this Agreement, Contractor certifies under A.R.S. § 35-393.01 that Contractor is not currently engaged in and for the duration of this Agreement will not engage in a boycott of Israel.

14.10 **NO THIRD PARTY BENEFICIARY**

Nothing under the Agreement Documents will be construed to give any rights or benefits in the Agreement Documents to anyone other than City and Contractor, and all duties and responsibilities undertaken pursuant to the Agreement Documents will be for the sole and exclusive benefit of City and Contractor and not for the benefit of any other party, unless otherwise expressly set forth in the Agreement Documents.

14.11 **GOVERNING LAW AND VENUE**

The Agreement and all Agreement Documents will be deemed to be made under, and will be construed in accordance with and governed by the laws of the State of Arizona without regard to the conflicts or choice of law provisions thereof. Any court action to enforce any provision of the Agreement or to obtain any remedy with respect hereto must be brought in the Superior Court, Maricopa County, Arizona, and for this purpose, each party hereby expressly and irrevocably consents to the jurisdiction and venue of such Court.

14.12 **SEVERABILITY**

If any provision of the Agreement Documents or the application thereof to any person or circumstance will be invalid, illegal or unenforceable to any extent, the remainder of the affected provision, the remainder of the Agreement Documents, and the application thereof will not be affected and will be enforceable to the fullest extent permitted by law.

14.13 **LEGAL REQUIREMENTS**

At all times relevant to its entry into this Agreement and performance of the Services and the Work, Contractor must fully comply with all Laws, Regulations, or Legal Requirements applicable to City, the Project, and the Agreement, including, without limitation, those set

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forth on Exhibit C of the Agreement.

14.14 **PARTIAL INVALIDITY**

If any provision of the Agreement is held by a court of competent jurisdiction to be invalid, void or unenforceable, the remaining provisions will nevertheless continue in full force without being impaired or invalidated in any way.

14.15 **ATTORNEYS' FEES**

Should either party to the Agreement bring an action to enforce any provision of the Agreement, the prevailing party will be entitled to recover reasonable attorneys' fees and costs in connection therewith.

14.16 **CONFLICT OF INTEREST**

14.16.1 Contractor agrees to disclose any financial or economic interest with the Project property, or any property affected by the Project, existing prior to the execution of the Agreement. Further, Contractor agrees to disclose any financial or economic interest with the Project property, or any property affected by the Project, if Contractor gains such interest during the course of this Agreement. If Contractor gains financial or economic interest in the Project during the course of this Agreement, this may be grounds for terminating this Agreement. Any decision to terminate the Agreement must be at the sole discretion of City.

14.16.2 Contractor will not engage the services on this Agreement of any present City employee who was involved as a decision maker in the selection or approval processes, or who negotiated or approved billings or Agreement Modifications for this Agreement.

14.16.3 Contractor agrees that it will not perform services on this Project for a contractor, subcontractor, or any supplier, not covered under this Agreement.

14.17 **INDEPENDENT CONTRACTOR**

Contractor is and must be an independent contractor. Any provisions in the Agreement Documents that may appear to give City the right to direct Contractor as to the details of accomplishing the Work or to exercise a measure of control over the Work means that Contractor must follow the wishes of City as the results of the Work only. These results must comply with all applicable laws and ordinances.

14.18 **NOTICE OF INJURY**

Should City or Contractor suffer injury or damage to their person or property because of any error, omission or act of the other party or of any of the other party's employees or agents or others for whose acts the other party is legally liable, claim must be made in writing to the other party within 7 Days of the first observance of such injury or damage.

14.19 **CONFIDENTIALITY**

Contractor, for the benefit of City, hereby agrees it will not release or cause or permit to be released to the public any press notices, publicity (oral or written) or advertising promotion relating to, any statement regarding, or any other public announcement or disclosure or cause or permit to be publicly announced or disclosed, in any manner whatsoever, the specific terms and conditions of this Agreement or any comment relating to the Project or the Site. Notwithstanding the foregoing, Contractor will be entitled to disclose the terms of the Agreement to the extent required by law or in the course of enforcing or defending a claim or action hereunder. Contractor must give City reasonably prompt notice of any disclosure or statement made pursuant to this provision.

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14.20 **DATA CONFIDENTIALITY**

14.20.1 As used in the Agreement, "data" means all information, whether written or verbal, including plans, specifications, renderings, photographs, studies, investigations, audits, analyses, samples, reports, calculations, internal memos, meeting minutes, data field notes, work product, proposals, correspondence and any other similar documents or information prepared by, obtained by, or transmitted to the City in the performance of this Agreement.

14.20.2 Contractor agrees that all data, regardless of form, including originals, images, and reproductions, prepared by, obtained by, or transmitted to City in connection with the Contractor's performance of this Agreement is confidential and proprietary information belonging to City.

14.20.3 Except as specifically provided in this Agreement, Contractor or its Subcontractors must not divulge data to any third party without prior written consent of City. Contractor or its Subcontractors must not use data for any purposes except to perform Work required under this Agreement. These prohibitions will not apply to the following data provided Contractor has first given the required notice to City:

a. Data which was known to Contractor or its Subcontractors prior to its performance under this Agreement unless such data was acquired in connection with Work performed for City;

b. Data which was acquired by Contractor or its Subcontractors in its performance under this Agreement and which was disclosed to Contractor or its Subcontractors by a third party, who to the best of Contractor's or its Subcontractor's knowledge and belief, had the legal right to make such disclosure and Contractor or its Subcontractors are not otherwise required to hold such data in confidence; or

c. Data which is required to be disclosed by virtue of law, regulation, or court order, to which the Contractor or its Subcontractors are subject.

14.20.4 In the event the Contractor or its Subcontractors are required or requested to disclose data to a third party, or any other information to which the Contractor or its Subcontractors became privy as a result of any other agreement with City, the Contractor must first notify City as set forth in this Section of the request or demand for the data. The Contractor or its Subcontractors must give City sufficient facts so that City can be given an opportunity to first give its consent or take such action that City may deem appropriate to protect such data or other information from disclosure.

14.20.5 Unless prohibited by law, within 10 Days after completion of services for a third party on real or personal property owned or leased by City, the Contractor must promptly deliver, as set forth in this Section, a copy of all data to City. All data will continue to be subject to the confidentiality agreements of this Agreement.

14.20.6 Contractor or its Subcontractors assume all liability for maintaining the confidentiality of the data in its possession and agree to compensate City if any of the provisions of this Section are violated by Contractor, its employees, agents, or Subcontractors. Solely for the purposes of seeking injunctive relief, it is agreed that a breach of this Section will be deemed to cause irreparable harm that justified injunctive relief in court. Contractor agrees that the requirements of this Section will be incorporated into all subcontracts entered into by Contractor. A violation of this Section may result in immediate termination of this

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Agreement without notice.

14.21 **SURVIVAL**

All warranties, representations and indemnifications by Contractor must survive the completion or termination of this Agreement.

14.22 **COVENANTS AGAINST CONTINGENT FEES**

Contractor warrants that no person has been employed or retained to solicit or secure this Agreement upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee, and that no member of City Council, or any employee of City has any interest, financially, or otherwise, in the firm. For breach or violation of this warrant, City will have the right to annul the Agreement without liability or at its discretion to deduct from the Agreement Price or consideration, the full amount of such commission, percentage, brokerage, or contingent fee.

14.23 **NO WAIVER**

The failure of either party to enforce any of the provisions of the Agreement Documents or to require performance of the other party of any of the provisions hereof must not be construed to be a waiver of such provisions, nor will it affect the validity of the Agreement Documents or any part thereof, or the right of either party to thereafter enforce each and every provision.

14.24 **NONEXCLUSIVE REMEDIES**

The remedies set forth in this Agreement are cumulative and not exclusive, and failure to exercise any remedy (including, without limitation, any right to terminate) will not preclude any party from exercising any other right in seeking any other remedy available to it at law or in equity.

14.25 **PROJECT COMMUNICATIONS**

14.25.1 All communications concerning the performance of the Work or the Project will be provided to the designated Project Manager and Contractor's Representative set forth in Article 1 of the Agreement. City may change the designated Project Manager and, subject to Section 4.4.20 of these General Conditions, Contractor may change Contractor Representative, by written notice to the other.

14.25.2 Project communications may be exchanged by e-mail, but email communications cannot change the terms of the Agreement or the Scope of Work, or effectuate any change that requires a written Change Order.

14.25.3 When any provisions of the Agreement Documents requires Contractor or the Design Professional to give written notice to City, it will be deemed to have been validly given if delivered in person or if delivered at or sent by registered or certified mail, postage prepaid, to the Parties indicated in Agreement Article 1, incorporated by reference.

14.25.4 When any provisions of the Agreement Documents requires City, Project Manager, or the Design Professional to give written notice to Contractor, it will be deemed to have been validly given if delivered in person to the person designated in the Agreement Documents as Contractor's Resident Superintendent, or if delivered at or sent by registered or certified mail, postage prepaid, to Contractor at the last address in the Agreement Documents or such substitute address which Contractor designates in writing, or to the business address known to the giver of notice.

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14.26 **DRUG FREE WORKPLACE PROGRAM**

14.26.1 City has adopted a policy establishing a drug free workplace for itself and as a requirement for Contractors doing business with City, to ensure the safety and health of employees working on City projects.

14.26.2 Contractor must require a drug free workplace for all employees working under the Agreement. Specifically, all employees of Contractor who are working under an agreement with City must be notified, in writing, by Contractor that they are prohibited from the manufacture, distribution, dispensation, possession or unlawful use of a controlled substance in the workplace.

14.27 Failure to require a drug free workplace in accordance with the City's policy may result in termination of the Agreement and possible debarment form bidding on future City projects.

SECTION 15 - PROVISIONS APPLICABLE SOLELY TO GMP AND COST-BASED AGREEMENTS, CHANGE ORDERS, AND JOB ORDERS

15.1 **ADDITIONAL DEFINITIONS**

The definitions set forth in Section 2 apply to GMP and Cost-Based Agreements, Change Orders, and Job Orders, together with the additional definitions set forth below.

Baseline Cost Model –
A breakdown and estimate of the scope of the Project developed by CM@Risk pursuant to Section 17.5 of these General Conditions.

CM@Risk or Construction Manager at Risk –
The person or firm selected by City to provide pre-construction and/or construction services as detailed in a Construction Manager at Risk Agreement with City. In these General Conditions, the term "Contractor" includes CM@Risk under both Pre-Construction and Construction Services Agreements.

CM@Risk Fee or Contractor's Fee –
An agreed to percentage in an accepted GMP that represents the Contractor's fee for performance of the Work.

Agreement Documents –
Where compensation under the Agreement is based upon a GMP accepted by City, the term "Agreement Documents" also includes the accepted GMP Proposal.

Agreement Price –
Where compensation under the Agreement based upon a GMP accepted by City, the term "Agreement Price" refers to the GMP.

Cost-Based Agreement, Change Order, or Job Order –
A Agreement, Change Order, or Job Order where the Agreement Price is based upon the actual cost of performing the Work, subject to the terms of the Agreement Documents, including this Section 15. These would include those generally referred to as "Cost of the Work plus a Fee with a GMP," "Time and Materials," or "Cost Plus a Fee."

Cost of the Work –
The direct costs necessarily incurred by Contractor in the proper, timely, and complete performance on the Work. The Cost of the Work will include only those costs set forth in Section 15.2 of these

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General Conditions.

Deliverables –
The work products prepared by Contractor in performing the scope of work described in the Agreement. Some of the major deliverables to be prepared and provided by Contractor during pre-construction may include but are not limited to: the Baseline Cost Model and Schedule that validate City's plan and budget, Construction Management Plan, Detailed Project Schedule, Schedule of Values, alternative system evaluations, procurement strategies and plans, Detailed Cost Estimates, construction market surveys, cash flow projections, GMP Proposals, Subcontractor procurement plan, Subcontractor agreements, Subcontractor bid packages, Supplier agreements, Constructability Review, Cost Control Log, Traffic control and phasing plans and others as indicated in this Agreement or required by the Project Team.

Pre-Construction Services Agreement –
The Agreement entered into between City and the CM@Risk for Pre-Construction Services to be provided by the CM@Risk, including, without limitation, the generation of a GMP Proposal. If the GMP Proposal is accepted by City and a Construction Agreement is entered into between City and CM@Risk, the duties, obligations and warranties of the CM@Risk under the Pre-Construction Services Agreement survive and are incorporated into the resulting Construction Agreement.

Pre-Construction Services –
The services to be provided under the Pre-Construction Services Agreement, including Section 17 of these General Conditions.

Detailed Project Schedule –
The Detailed Project Schedule developed by the CM@Risk for the review and approval of the Project Manager in accordance with Section 17.3 of these General Conditions, if applicable.

General Conditions Costs –
Those costs set forth in Section 4 of Appendix 9 to these General Conditions.

GMP Plans and Specifications –
The plan and specifications upon which the Guaranteed Maximum price Proposal is based.

GMP Proposal –
The proposal of Contractor submitted pursuant to Section 17.7 of these General Conditions for the entire Work and/or portion (phases) of the Work.

Guaranteed Maximum Price or GMP –
The Guaranteed Maximum Price set forth in the Agreement, Change Order, or Job Order if applicable.

15.2 **AGREEMENT PRICE**

15.2.1 The Agreement Price for all Agreements, Change Orders, and Job Orders based upon payment of the Cost of the Work plus a Fee with a GMP, time and materials, or cost-plus a fee will be the Cost of the Work incurred plus the Fee agreed to in writing by City, limited to the amount of the GMP, if agreed to. Unless otherwise expressly provided in the Agreement, Change Order, or Job Order, all Cost Based pricing will be subject to and limited to GMP.

15.2.2 The Agreement Price may only be changed as set forth in Section 9 above.

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15.2.3 Only costs specifically designated as reimbursable costs are eligible for payment by City or may be charged against the Agreement Price. All other costs will not be paid by City and will not be chargeable against the Agreement Price.

15.2.4 Cost-Based Agreements. For Agreements, Change Orders, or Job Orders, reimbursable costs must be determined pursuant to Appendix 9 to these General Conditions, Cost of the Work, and not by MAG Specifications §109.5.

15.3 **ALLOWANCES**

15.3.1 Contractor must include in the Agreement Price all Allowances stated in the Agreement Documents and agreed to in writing by City. Items covered by these Allowances must be supplied for such amounts and by such persons as City may direct, provided Contractor will not be required to employ persons against whom Contractor makes a reasonable objection. Materials, labor, and equipment under an Allowance will be selected by City in accordance with a schedule to be mutually agreed upon by City, Design Professional and Contractor or otherwise in reasonably sufficient time to avoid delay in the Work.

15.3.2 Unless otherwise provided in the Agreement Documents:

15.3.2.1 These Allowances must cover the cost to Contractor, less any applicable trade discount, of the materials, labor, and equipment required by the Allowances, delivered at the Site, and all applicable taxes;

15.3.2.2 Contractor's costs for unloading and handling on the Site, labor, installation costs, overhead, profit and other expenses relating to materials, labor, and equipment required by the Allowance must be included in the Agreement Sum and not in the Allowance; and

15.3.2.3 Whenever the cost is more or less than the Allowance, the Agreement Sum must be adjusted accordingly by Change Order, the amount of which will recognize the difference between actual costs for an Allowance item and the amount of the Allowance item and changes, if any, in handling costs on the Site, labor, installation costs, overhead, profit and other expenses.

15.4 **CONTINGENCY**

An agreed to amount in the GMP that may only be used in accordance with the terms set forth in these General Conditions and with prior written approval by the City.

15.4.1 Construction Contingency. This GMP includes a dollar amount listed as a Construction Contingency which will be readily available for increased costs for subcontractors, material, and equipment subject to prior approval of City, which approval will not be withheld unreasonably. The Construction Contingency may also be used, at the discretion of City, to reimburse CM@Risk for unexpected costs due to (a) scope gaps between trade subcontractors; (b) agreement default by trade subcontractors; (c) unforeseen field conditions, but only as defined in Section 9.5 above; (d) work completed to meet the intent of the design, but which was not indicated on the plans; (e) costs overruns not covered by allowances; (f) costs of corrective work not provided for elsewhere; and (g) implementation of any Recovery Plan. Cost for which CM@Risk desires to be paid from the Construction Contingency must be documented by CM@Risk on a time and materials basis and are subject to verification by City. If agreed to by City, a "Use of Contingency" form will be executed by both parties authorizing the actual cost of the work to be paid and included in the Work Item Direct Costs. The Construction Contingency is not allocated to any particular

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item of the Project but may be used for any portion of the work as determined above. Any amount not used in the Construction Contingency will belong to City and will reduce the GMP.

15.4.2 Owner's Contingency. This GMP also includes a dollar amount listed as an Owner's Contingency which may be used only by the City (owner department) for upgrades and changes in scope or other changes not already included within the intent of the Project Program. City will provide CM@Risk with a Work Change Directive authorizing CM@Risk to perform the additional work and to transfer funds from the Owner's Contingency to the Work Item Direct Costs category to be paid with such direct costs. These additional costs will be in an amount mutually agreed upon by CM@Risk and City or will be documented by CM@Risk on a time and materials basis and are subject to verification by City. Any amount not used in the Owner's Contingency will belong to the City and will reduce the GMP.

15.5 **REDUCTION IN RETENTION**

If the Agreement Price is based upon a GMP, in order to receive payment of one-half of the retention as set forth in Section 8.1.5 above, Contractor must also submit to the Project Manager a complete accounting of the Actual Reimbursable Cost of the Work to date, including all such documentation (including, without limitation, invoices, subcontract, subcontractor change orders, purchase orders, records of payment, etc.) as City may require, to establish whether the payments made to Contractor equal, exceed, or are less than the actual reimbursable Cost of the Work to date. Any excess payments by City, as determined by the Project Manager, will be deducted from the one-half retention payment to be made to Contractor, and any additional excess amounts paid to Contractor will be refunded by Contractor to City. The Project Manager's determinations as to Actual Reimbursable Cost of the Work will be the basis of payment until final Project Closeout and Final Payment under the Agreement.

15.6 **FINAL PAYMENT**

If the Agreement Price is based upon a GMP, as a further condition precedent to Final Payment by City, Contractor must submit to the Project Manager a complete final accounting of the Actual Reimbursable Cost of the Work, including all such documentation (including, without limitation, invoices, subcontracts, subcontractor change orders, purchase orders, records of payment, etc.) as City may require, to establish whether the payments made to Contractor equal, exceed, or are less than the Actual Reimbursable Cost of the Work to date. Any excess payments by City, as determined by the Project Manager, will be deducted from the one-half retention payment to be made to Contractor, and any additional excess amounts paid to Contractor will be refunded by Contractor to City. Disputes relating to the Final Cost of the Work will be subject to City's audit rights under Sections 8.8 above and 15.7 below, and the dispute resolution process under Section 13 above.

15.7 **OPEN BOOK**

On any GMP-based or Cost-Based Agreement, Job Order, or Change Order, City may attend any and all meetings or discussions pertaining to the Project, including bid openings, and must have access to all books, invoices, accounts, memoranda, correspondence, and written communications or records of any kind pertaining to the Project, including without limitation, those stored in electronic format.

15.8 **DIFFERING SITE CONDITIONS AND/OR CHANGE IN LAWS**

A Change Order for increased costs under Section 9.5 or 9.6 above will only be considered

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or granted by City to the extent such actual, documented costs are justified.

SECTION 16 - PROVISIONS APPLICABLE SOLELY TO JOB ORDER AGREEMENTS (JOC)

16.1 **ADDITIONAL DEFINITIONS**

The definitions set forth in Sections 2 and below will apply to all Job Order Agreements and Job Orders. In addition, the definitions set forth in Section 15.1 above will apply to all Cost-Based Job Orders.

Agreement –
Includes the Job Order Master Agreement and Job Order Project Agreements issued and agreed to by City and JOC Contractor.

JOC Contractor's Coefficient –
A numerical factor that represents JOC Contractor total costs (indirect and direct costs, sales tax, profit, etc.) and other adjustments for market conditions.

Job Order Request for Proposal (RFP) –
The Request for Proposals issued by City for each Job Order Project Agreement relating to a specific Project.

Job Order Cost Proposal –
The Proposal submitted by JOC Contractor in response to a Job Order Request for Proposal (RFP) issued by City to develop a Job Order Project Agreement for a specific Project.

Guaranteed Maximum Price (GMP) Job Order –
Job Order under which JOC Contractor is compensated for actual costs incurred.

Job Order Project Agreement (Job Order) –
The agreement for a specific project, as it may be modified by all Change Orders, executed by the Parties, which incorporates the terms and conditions of the Job Order Master Agreement.

16.2 **ORDERING AND PROCESSING PROCEDURES FOR JOB ORDERS**

16.2.1 The process for developing and issuing a Job Order for a particular Project consists of three (3) procedures: (1) issuance of a RFP by City; (2) JOC Contractor's response to the RFP in the form of JOC Contractor's Job Order Cost Proposal; and (3) Issuance of a Job Order by City, as set for below.

16.2.2 RFP's For Job Orders

16.2.2.1 City will provide to JOC Contractor RFP with a Scope of Work (SOW) describing the Work to be performed, which may include special instructions and conditions, material submittal requirements, and, if applicable, a complete set of sketches, construction drawings and specifications for the Job Order.

16.2.2.2 Some Job Order RFP's will be issued by City without detailed sketches, drawing and specifications and will rely on JOC Contractor to produce them for City review and approval and is considered to be Pre-Construction and incidental design services included in JOC Contractor's overhead for GMP Job Orders. In addition JOC Contractor will not be reimbursed for any Pre-Job Order costs, including proposal preparation, attendance during negotiations, or site visits.

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16.2.3 JOC Contractor's Job Order Cost Proposal

16.2.3.1 JOC Contractor must respond within ten (10) calendar days of the RFP date or site visit, whichever is later or as otherwise indicated on a case-by-case basis, by submitting JOC Contractor's Job Order Cost Proposal to the City representative.

16.2.3.2 Unless otherwise required under the terms of the RFP, JOC Contractor's Job Order Cost Proposal must include the following.

a. JOC Contractor's Job Order Cost Proposal in PDF and electronic format;

b. A Project Schedule and schedule of values that reflects the costs of each work element on the schedule. The schedule must show all milestones (e.g., permits, submittals, ordering materials, demolition, work phases, closeout and completion date); and

c. Necessary documentation will be required to indicate that adequate scoping, layout, setup and planning to accomplish the Work has been done. Examples of documentation that might reasonably be expected include sketches, drawings, calculations, catalog cuts and specifications produced to a level of detail and skill that could be expected of experienced, competent Project Managers with five or more periods experience in their respective trade.

16.2.3.3 JOC Contractor must select Subcontractors based on qualifications alone or on a combination of qualifications and price and must not select Subcontractors based on price alone. A qualifications and price selection may be a one-step selection based on a combination of qualifications and price or two-step selection. In a two-step selection, the first step must be based on qualifications alone and the second step may be based or a combination of qualifications and price or on price alone.

16.2.3.4 Upon request, JOC Contractor must provide City with copies of Subcontractor quotes and the basis for selection of each Subcontractor.

16.2.3.5 If City objects to a selected Subcontractor, City will make the objection and the reasons for the objection known to the JOC Contractor. JOC Contractor must then present an acceptable Subcontractor for the applicable discipline. City will not unreasonably object to or withhold approval of a Subcontractor.

16.2.3.6 For self-performed work, the City retains the right to have the JOC Contractor establish JOC Contractor's costs by bidding their costs against at least three (3) other interested trade Contractors. No self- performed work will be allowed to be performed on a lump sum basis.

16.2.4 Issuance of Job Order

16.2.4.1 City Representative will compare the JOC Contractor's Job Order Cost Proposal with the City's estimate, schedules and other requirements, and then, if the City Representative determines it is in the best interest of City, arrange a meeting with JOC Contractor, at which time the JOC Contractor's Job Order Cost Proposal will be discussed and negotiated.

16.2.4.2 If the City Representative determines that it is in the best interest of the City, City will then issue a Job Order to JOC Contractor for execution.

16.2.4.3 Specific Job Orders may vary, but unless agreed to by City in writing otherwise, the content

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of Job Orders under the Agreement will generally be as follow, all of which will be signed and/or initialed by JOC Contractor's designated representative:

a. The description of the Scope of the Work and Project Schedule (attached as Exhibit A to the Job Order);

b. The address or location of the Work;

c. The Agreement Price for Work (Construction) included in the Project (attached as Exhibit B to the Job Order);

d. The name of the JOC Contractor representative for the Project;

e. The Drawings and Specifications for the Project;

f. If any shop drawings, project date and/or samples are required for the Job Order, the date for delivery of each required item (included in the Project Schedule, Exhibit A to the Job order); and

g. Project Specific Provisions, if any, in Exhibit A to the Job Order, including, without limitation, whether any of the following are required: Pre-Construction Conference, weekly progress meetings, field office, storage enclosure, materials and equipment handling facility, submittals, shop drawings, product data, equipment list, samples, project manual, schedule of values, Construction progress schedule, narrative reports, progress report, progress charts, progress photographs, materials status report, Construction diagram, Construction status report, operation and maintenance data, operating maintenance instructions and parts list, and as-build drawings.

16.2.5 Job Order Intent. Each Job Order will be interpreted to include all items reasonably necessary to complete the Project under that Job Order as described in the scope of the Work in that Job Order. All Work must be performed in a professional manner and all materials used must be new and of the highest quality and of the type best adapted to their purpose, unless otherwise specified. The Notice to Proceed date, and the award date established therein, will be deemed an integral part of the Job Order the same as if set forth therein.

16.3 **INCIDENTAL DESIGN SERVICES**

16.3.1 This effort includes all "extensions of design" for systems that are typically specified in a performance oriented manner by consultants and designers. Examples include: fire sprinkler systems, fire alarm and sprinkler systems, DDC controls, control systems, prefabricated metal building and similar situations. These designs are normally provided under submittals as a shop drawing with engineering backup and as appropriate, seals of registered engineers specializing in the particular system.

16.3.2 Incidental design includes all documents, sketches, schematic diagrams, floor plan layouts, equipment schedules and other documents produced by the JOC Contractor to define the work required for projects that the City does not develop formal or abbreviated designs requiring a seal by a registered engineer. Incidental design does not include preparation of designs requiring an architect or engineer seal.

16.3.3 JOC Contractor represents, covenants, and agrees, and contractually assumes the obligation to furnish, all of the required Design Services through properly licensed and

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experienced Design Professionals in complete accordance with all of the duties imposed on a Design Professional under the Agreement Documents, Laws, Regulations, or Legal Requirements, and the common law.

16.3.4 All Design Documents (and all other Project-related documents, models, computer drawings and other electronic expression, photographs and other expressions CADD, and BIM files and images included) that JOC Contractor and/or JOC Contractor's Design Professional(s) prepare in connection with a Job Order and the copyrights therein (collectively, the "Instruments of Service") will be the property of City. JOC Contractor covenants and agrees to execute any additional document reasonably requested by City to confirm such assignment without any additional compensation.

16.4 **CONSTRUCTION SERVICES**

16.4.1 The following subsections of this Section 16.4 set forth requirements beyond those set forth in Section 4 above which apply to Construction Services performed under a Job Order.

16.4.2 JOC Contractor must perform the Work using only those firms, team members and individuals designated by JOC Contractor consistent with each Job Order or otherwise approved by City pursuant to the General Conditions. No other entities or individuals may be used without the prior written approval of the Project Manager.

16.4.3 Construction Phasing

16.4.3.1 City use of the facilities is anticipated while the Work is being performed. The Work must be planned and accomplished so that there will be a minimum of interference and inconvenience to occupants in the building and agencies in the vicinity and to other craftsmen who may have to do work in the affected facilities. Any blockage of building exits or driveways must be coordinated in advance.

16.4.3.2 If applicable, furniture, portable office equipment and wall appurtenances not rigidly fastened to the walls must be moved by JOC Contractor, protected from damage and replaced to the original position upon completion of the work. If the work required by the Job Order will not allow furniture and portable office equipment to be replaced to its original position, new locations will be designated by City. Incidental costs associated with moving one-piece furnishings up to approximately 150 pounds to perform such tasks as painting, carpet or tile replacement, etc., are considered a general cost of building renovation and must be included in the JOC Contractor's Coefficient. Costs for large scale or wholesale removal and replacement of large quantities of desks or modular workstations, copiers, multiple full file cabinets, etc. to another location or storage outside the work space, or disassembly and reassembly of modular furniture is not considered part of the JOC Contractor's Coefficient and will be priced separately.

16.4.3.3 The work must, so far as practicable, be done in definite sections or divisions and confined to limited areas which must be completed before work in other sections or divisions are begun.

16.4.4 Work Site Conflicts. In the event of a conflict between JOC Contractor and others in an occupied facility or where other Contractors are performing work on the same facility under other Agreements, City will decide to dispute and that decision will be final.

16.4.5 Ownership of Work Product. Work Product prepared or otherwise created in connection

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with the performance of this Agreement, including the Work, are to be and remain the property of City. For purposes of this provision, "Work Product" will include all designs, drawings, plans, specifications, ideas, renderings and other information or matter, in whatever form created (e.g., electronic or printed) and in all media now known or hereinafter created. All Work Product will be considered Work Made for Hire as defined in the United States Copyright Act 17 U.S.C. §101 (Copyright Act). If for any reason any such Work is found not to be a work for hire, JOC Contractor hereby transfers and assigns ownership of the copyright in such Work to City. The rights in this Section are exclusive to City in perpetuity.

16.5 **OPTIONAL LIQUIDATED DAMAGES**

16.5.1 Specific Job Orders. City will have the right to assess liquidated damages in relation to any specific JOC Project Agreement as set forth below.

16.5.2 Substantial Completion Liquidated Damages. JOC Contractor acknowledges and agrees that if JOC Contractor fails to obtain Substantial Completion of the Work within the Agreement Time, City will sustain extensive damages and serious loss as a result of such failure. The exact amount of such damages will be extremely difficult to ascertain. Therefore, City and JOC Contractor agree that if JOC Contractor fails to achieve Substantial Completion of the Work within the Agreement Time, City will be entitled to retain or recover from JOC Contractor, as liquidated damages and not as a penalty, the sum per calendar day as indicated in MAG § 108.9.

16.5.3 Final Acceptance Liquidated Damages. For the same reasons set forth in Section 16.5.2 above, City and JOC Contractor further agree that if JOC Contractor fails to achieve Final Acceptance of the Work within the Agreement Time, City will be entitled to retain or recover from JOC Contractor, as liquidated damages and not as a penalty, the sum per calendar day as indicated in MAG § 108.9 commencing from the actual date of Substantial Completion or Final Acceptance as required under any specific JOC Project Agreement.

16.5.4 MAG Liquidated Damages. Liquidated damages provisions in MAG § 108.9 may apply to any specific JOC Project Agreement.

16.5.5 City may deduct liquidated damages assessed pursuant to this Section 16.5 from any unpaid amounts then or thereafter due JOC Contractor under the Agreement or any specific JOC Project Agreement between JOC Contractor and City. Any liquidated damages not so deducted from any unpaid amounts due JOC Contractor must be payable to City at the demand of City, together with interest from the date of the demand at the highest lawful rate of interest payable to JOC Contractor.

16.6 **PERFORMANCE MEASUREMENT**

16.6.1 Performance Assessment. After the Final Acceptance of Work under each Job Order, City will complete a written evaluation of the performance of JOC Contractor on the Job Order.

16.6.2 Consideration in Assignment of Work. JOC Contractor's record of cost, schedule and quality performance and comparative assessments will be significant considerations in City's determination whether to award future Job Orders. JOC Contractor agrees that any determination by City not to not award future Job Orders or Option periods based on performance will be at the sole discretion of City.

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SECTION 17 - PROVISIONS APPLICABLE SOLELY TO PRE-CONSTRUCTION SERVICES FOR CONSTRUCTION MANAGER AT RISK

17.1 ADDITIONAL DEFINITIONS

The definitions set forth in Section 2 and 15.1 above will apply to all Pre-Construction Services Agreements.

17.2 GENERAL

17.2.1 CM@Risk must perform the Services required by, and in accordance with the Agreement Documents and as outlined in Exhibit A of the Agreement to the satisfaction of the Project Manager, exercising the degree of care, skill, diligence and judgment a professional construction manager experienced in the performance of such services for construction and/or facilities of similar scope, function, size, quality, complexity and detail to the Project in urban areas throughout the United States, would exercise at such time, under similar conditions. CM@Risk must, at all times, perform the required services consistent with sound and generally accepted engineering principles and construction management and construction contracting practices.

17.2.2 As a participating member of the Project Team, CM@Risk must provide to City and Design Professional a written evaluation of City's Project Program and budget, each in terms of the other, with recommendations as to the appropriateness of each. CM@Risk must prepare a Baseline Cost Model that validates City's budget. The Baseline Cost Model must include all assumptions and basis of estimates in enough detail so that the Project Team can compare future detail estimates to the Baseline Cost model for variances. City and Design Professional will provide all the reasonably required data that is available in order to reach agreement between the team members that the Baseline Cost Model is an accurate projection of the costs of the Project.

17.2.3 CM@Risk must attend Project Team meetings, which may include, but are not limited to, bi- weekly Project management meetings, Project workshops, special Project meetings, construction document rolling reviews, public meetings and partnering sessions. CM@Risk attendance at design or other meetings in which CM@Risk is provided the opportunity but does not actively participate and/or is not properly prepared is not acceptable. Repeated instances of non-participation and/or lack of preparedness will be grounds for termination of CM@Risk Agreement for default.

17.2.4 CM@Risk must provide Pre-Construction Services, described herein, in a timely manner and consistent with the intent of the most current Drawings and Specifications. CM@Risk must promptly notify City in writing whenever CM@Risk determines any Drawings or Specifications are inappropriate for the Project and/or cause changes in the scope of Work that deviates more than the allowed contingencies within the Baseline Cost Model or requires an adjustment in the Baseline Cost Model, Detailed Cost Estimate, Detailed Project Schedule, GMP Proposals and/or in the Agreement Time for the Work, to the extent such as established.

17.2.5 CM@Risk when requested by City, must attend, make presentations and participate as may be appropriate in public agency and or community meetings, relevant to the Project. CM@Risk must provide drawings, schedule diagrams, budget charges and other materials describing the Project when their use is required or appropriate in any such public agency meetings.

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17.2.6 Ownership of Work Product. All Work Product prepared or otherwise created in connection with the performance of this Agreement, including the Work, are to be and remain the property of City. For purposes of this provision, "Work Product" will include all designs, drawings, plans, specifications, ideas, renderings and other information or material, in whatever form created (e.g., electronic or printed) and in all media now know or hereinafter created. All Work Product will be considered Work Made for Hire as defined in the United States Copyright Act 17 U.S.C.
§101 (Copyright Act). If for any reason any such Work is found not to be a work for hire, Contractor hereby transfers and assigns ownership of the copyright in such Work to City. The rights in this Section are exclusive to City in perpetuity.

17.2.7 CM@Risk represents to City in completing Pre-Construction Services and providing the reports and analysis required thereunder, that Work can be properly and timely constructed within the GMP Proposal, if accepted. CM@Risk does not assume any design responsibilities unless specifically called for in the scope of work, but CM@Risk will be responsible for their errors, omissions or inconsistencies included in the Work.

17.3 **DETAILED PROJECT SCHEDULE**

17.3.1 The fundamental purpose of the Detailed Project Schedule is to identify, coordinate and record the tasks and activities to be performed by all of the Project Team members and then for the Project Team to utilize that Deliverable as a basis for managing and monitoring all member's compliance with the schedule requirements of the Project. Each Project Team member is responsible for its compliance with the Detailed Project Schedule requirements. CM@Risk must, however, develop and maintain the Detailed Project Schedule on behalf of and to be used by the Project Team based on input from the other Project Team members. The Baseline Project Schedule must be developed as part of the Baseline Cost Model. The Detailed Project Schedule must use the Critical Path method ("CPM") technique, unless required otherwise, in writing by City. CM@Risk must use scheduling software acceptable to City to develop the Detailed Project Schedule. The Detailed Project Schedule must be presented in graphical and tabular reports as agreed upon by the Project Team. If Project phasing as described below is required, the Detailed Project Schedule must indicate milestone dates for the phases once determined. As part of construction phase, City may require CM@Risk to prepare a "resource loaded" schedule for all work, including work performed by Subcontractors, detailing each of the project tasks and the required/anticipated number of personnel per day for each task. CM@Risk must also indicate on the schedule its ability to meet said required/anticipated personnel requirements.

17.3.2 CM@Risk must include and integrate in the Detailed Project Schedule the services and activities required of City, Design Professional and CM@Risk including all construction phase activities based on the input received from City and the Design Professional. The Detailed Project Schedule must define activities as determined by City to the extent required to show: (a) the coordination between preliminary design and various pre-construction documents, (b) any separate long-lead procurements, (c) any permitting issues, (d) any land, right-of-way, or easement acquisition, (e) bid packaging strategy and awards to Subcontractors and Suppliers, (f) major stages of construction, (g) start-up and commissioning, and (h) occupancy of the completed Work by City. The Detailed Project Schedule must include by example and not limitation, proposed activity sequences and durations for design, procurement, construction and testing activities, milestone dates for actions and decisions by the Project Team, preparation and processing of shop drawings

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and samples, delivery of materials or equipment requiring long-lead time procurement (if any), milestone dates for various construction phases, Total Float for all activities to the extent authorized by City, relationships between the activities, City's occupancy requirements showing portions of the Project having occupancy priority, and proposed dates for Final Acceptance.

17.3.3 A Baseline Project Schedule must be initiated with the project Baseline Cost Model and agreed to by the project team at the same time. CM@Risk must update and maintain a detailed Project Schedule throughout pre-construction such that it will not require major changes at the start of the construction phase to incorporate CM@Risk's plan for the performance of the construction phase Work. CM@Risk must provide updates and/or revisions to the Detailed Project Schedule for use by the Project Team, whenever required, but no less often than at the Project Team meetings. CM@Risk must include with such submittals a narrative describing its analysis of the progress achieved to-date vs. the Baseline Project Schedule, including any concerns regarding delays or potential delays, and any recommendations regarding mitigating actions.

17.3.4 If phased construction is deemed appropriate at the time of developing the Baseline Cost Model or during the development of the Detailed Project Schedule, and City approves, CM@Risk must review the design and make recommendations regarding the phased issuance of Construction Documents to facilitate phased construction of the Work, with the objective of reducing the Project Schedule and/or Cost of the Work. CM@Risk must take into consideration such factors as natural and practical lines of work severability, sequencing effectiveness, access and availability constraints, total time for completion, construction market conditions, labor and materials availability, and any other factors pertinent to saving time and cost.

17.3.5 Long Lead Time Items. As part of developing the Detailed Project Schedule, CM@Risk must identify all long lead time materials, fabrications, equipment, or other items which may impact the Project Schedule and may require early action on the part of the Project Team. Dates for selecting and ordering long lead time items will be included and highlighted in the Detailed Project Schedule

17.3.6 Equipment Plan. Contractor must develop an Equipment Plan that addresses all rental and owned equipment, regardless of whether such equipment will be provided by CM@Risk or subcontractor(s), that will be necessary to construct the Project and the cost of which will be included as a Cost of the Work in the GMP Proposal. The Equipment Plan will seek to minimize the cost of the equipment to City and maximize the efficient and coordinated use of the equipment for completion of the Project. The Equipment Plan will not only include the costs and allowable lease rates for the equipment, but will also include an equipment schedule that will be incorporated into the Detailed Project Schedule and the Schedule of Values submitted with the GMP Proposal.

17.4 DESIGN DOCUMENT REVIEWS

17.4.1 CM@Risk must evaluate periodically the availability of labor, materials/equipment, cost-sensitive aspects of the design; and other factors that may create an unacceptable variance to the Baseline Cost Model and/or Baseline Project Schedule.

17.4.2 CM@Risk must recommend, in conjunction with the Project Team, those additional surface and subsurface investigations that, in its professional opinion, are required to provide the necessary information for CM@Risk to construct the Project. These additional

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investigations, if agreed to be necessary by the Project Manager and the Design Professional, will be acquired by City and copies of the reports will be provided to CM@Risk.

17.4.3 CM@Risk must meet with the Project Team as required to review designs during their development. CM@Risk must familiarize itself with the evolving documents through pre- construction. CM@Risk must proactively advise the Project Team and make recommendations on factors related to construction costs, and concerns pertaining to the feasibility and practicality of any proposed means and methods, selected materials, equipment and building systems, and, labor and material availability. CM@Risk must furthermore advise the Project Team on proposed site improvements, excavation and foundation considerations, as well as, concerns that exist with respect to coordination of the Drawings and Specifications. CM@Risk must use established value analysis principles in recommending cost effective alternatives.

17.4.4 CM@Risk must routinely conduct constructability and bid-ability reviews of the Drawings and Specifications as necessary to satisfy the needs of the Project Team. The reviews must attempt to identify all discrepancies and inconsistencies in the Construction Documents especially those related to clarity, consistency, completeness and coordination of Work of Subcontractors and Suppliers.

17.4.4.1 CM@Risk must evaluate whether: (a) the Drawings and Specifications are configured to enable efficient construction; (b) design elements are standardized; (c) construction efficiency is properly considered in the Drawings and Specifications; (d) module/preassembly design is prepared to facilitate fabrication, transport and installation; (e) sequences of Work required by or inferable from the Drawings and Specifications are practicable; (f) the design has taken into consideration efficiency issues concerning access and entrance to the site, laydown and storage of materials, staging of site facilities, construction parking, and other similar pertinent issues; and (g) the design maintains continued operation of the existing City systems and maintains traffic on adjacent roadways. CM@Risk must also review the Drawings and Specifications to ensure that what is depicted therein can be constructed as designed and must promptly inform the Project Team of any issues.

17.4.4.2 CM@Risk must check cross-reference and complementary Drawings and sections within the Specifications and in general evaluate whether: (a) the Drawings and Specifications are sufficiently clear and detailed to minimize ambiguity and to reduce scope interpretation discrepancies; (b) named materials and equipment are commercially available and are performing well, or otherwise, in similar installations; (c) Specifications include alternatives in the event a requirement cannot be met in the field; and (d) in its professional opinion, the Project is likely to be subject to Differing Site Conditions.

17.4.4.3 The results of the reviews must be provided to Project Team in formal, written reports clearly identifying all reviewed documents and the discovered discrepancies and inconsistencies in the Drawings and Specifications with notations and recommendations made on the Drawings, Specifications and other documents. CM@Risk must meet with Project Team to discuss any findings and review reports.

17.4.4.4 CM@Risk's reviews must be from a Contractor's perspective, and though it will serve to eliminate/reduce the number of RFIs) and changes during the construction phase, responsibility for the Drawings and Specifications will remain with the Design Professional and not CM@Risk.

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17.4.5 It is CM@Risk's responsibility to assist the Design Professional in ascertaining that, in CM@Risk's professional opinion, the Construction Documents are in accordance with applicable Laws, Regulations, or Legal Requirements, building codes, sound engineering principle's rules and regulations. If CM@Risk recognizes that portions of the Construction Documents are at variance with applicable laws, statutes, ordinances, building codes, sound engineering principle's rules and regulations, it must promptly notify the Project Team in writing, describing the apparent variance of deficiency. However, the Design Professional is ultimately responsible for the compliance of the Drawings and Specifications with those laws, statutes, ordinances, building codes, rules and regulations.

17.4.6 The Project Team will routinely identify and evaluate using value analysis principles and alternate systems, approaches, design changes that have the potential to reduce Project costs while still delivering a high quality and fully functional Project consistent with the Project Program. If the Project Team agrees, CM@Risk in cooperation with the Design Professional, will perform a cost/benefit analysis of the alternatives and submit such in writing to the Project Team. City, through the Project Manager, will direct which alternatives will be incorporated into the Project. The Design Professional will have full design responsibility for the review and incorporation of CM@Risk suggested alternatives into the Drawings and Specifications. CM@Risk must analyze the costs and schedule impacts of the alternatives against the Baseline Cost Model and Schedule and provide a recommendation for the Project Team's consideration and City's approval prior to the establishment of the GMP.

17.5 **BASELINE COSTS MODEL, DETAILED COST ESTIMATES, AND SCHEDULE OF VALUES**

17.5.1 At the conclusion of the Master Planning and Programming, if required, CM@Risk will review all available information regarding the design and scope of the Project using CM@Risk's experience in performing similar work, knowledge of similar projects and current and projected construction costs and, based upon that review, must develop a Baseline Cost Model for review by the Project Team and approval by City. Once approved by City, the Baseline Cost Model will be continually referenced as detailed estimates are created as the design progresses throughout Pre-Construction until the final GMP for the entire Project is established. A final GMP for the entire Project must be established and approved by City prior to the start of construction. It is the responsibility of CM@Risk to ensure City has sufficient information to evaluate and approve a final GMP prior to the time necessary to start construction so construction can be completed within the Agreement Time. The Project Detailed Cost Estimate will be the best representation from CM@Risk of what the complete functional Project's construction costs will be as indicated by the most current available documents and will be constantly checked against the Baseline Cost Model. CM@Risk must communicate to the Project Team and assumptions made in preparing the Baseline Cost Model. The Baseline Cost Model must support CM@Risk's Detailed Cost Estimates and may be broken down initially as dictated by the available information, as required by City.

17.5.2 After receipt of the Design Professional's most current documents from certain specified pre- construction milestones, CM@Risk must provide a draft Detailed Cost Estimate including a detailed written report detailing any variances to the Baseline Cost Model and Baseline Project Schedule. The Design Professional and CM@Risk will reconcile any disagreements on the estimate to arrive at an agreed upon Detailed Cost Estimate for the construction costs based on the scope of the Project through that specified pre-construction milestone. Pre-Construction milestones applicable to this paragraph are:

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Master Planning and Programming, Schematic Design, 50% Design Development, 100% Design Development, and 50% Construction Drawings, If no consensus is reached, City will make the final determination. If the Project Team requires additional updates of the Detailed Cost Estimate beyond that specified in this paragraph, CM@Risk must provide the requested information in a timely manner.

17.5.3 If at any point the Detailed Cost Estimate submitted to City exceeds the previously accepted Baseline Cost Model or previously approved Detailed Cost Estimate agreed to as set forth in Section 17.5.2 above, CM@Risk must make appropriate recommendations to project Team on means/methods, materials, and or other design elements that it believes will reduce the estimated construction costs, such that it is equal to or less than the established Project Team's Baseline Cost Model.

17.5.4 Unless other levels of completion are agreed to in writing in the Construction Documents, at 50% Construction Drawings and included with the associated report, CM@Risk must also submit to the Project Team for review and approval a Schedule of Values that complies with the following requirements. The Schedule of Values must be based on City standard bid schedule and highlight significant variances from any previously submitted Schedule of Values. The Schedule of Values must be directly related to the breakdowns reflected in the Detailed Project Schedule and CM@Risk's Detailed Cost Estimate. In addition, the Schedule of Values must: (a) detail unit prices and quantity take-offs, (b) detail all other contingencies and unit price Work shown and specified in the detailed design documents.

17.5.5 CM@Risk is to track, estimate/price and address the Project Team's overall project cost issues that arise outside of the Baseline Cost Model and the latest approved Detailed Cost Estimate such as: City generated changes, Project Team proposed changes, alternate system analysis, constructability items and value engineering analysis. The system used to implement this process will be referred to as the Design Evolution Log. This is to be addressed between the Baseline Cost Model and the Master Planning and Programming Detailed Cost Estimate, and then (unless other levels of completion are agreed to in writing in the Construction Documents) between the Detailed Cost Estimates for each of the pre-construction milestones thereafter, Schematic Design, 50% Design Development, 100% Design Development, and 50% Construction Documents, and the bid packages for all Phases.

17.5.6 Upon request by City, CM@Risk must submit to City a cash flow projection for the Project based on the current updated/revised Detailed Project Schedule and the anticipated level of payments for CM@Risk during the design and construction phases. In addition, if requested by City and based on information provided by City, CM@Risk must prepare a cash flow projection for the entire Project based on historical records for similar types of projects to assist City in the financing process.

17.5.7 Construction Water. CM@Risk must estimate the quantity of water to be used and include the cost thereof in each Detailed Cost Estimate and GMP Proposal provided by City.

17.6 SUBCONTRACTOR AND MAJOR SUPPLIER SELECTIONS

17.6.1 There are two ways to select Subcontractors and major Suppliers prior to submission of a GMP Proposal: (1) qualifications-based selection; or (2) a combination of qualifications and price. Except as noted below, the selection of Subcontractors/Suppliers is the sole responsibility of CM@Risk. In any case, CM@Risk is solely responsible for the performance of the selected Subcontractors/Suppliers, and for compliance with the requirements of

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Title 34 of the Arizona Revised Statutes in the selection of a Subcontractors/Suppliers, to the extent applicable. CM@Risk must comply with its Subcontractor Selection Plan submitted with its Statement of Qualifications.

17.6.2 City may approve the selection of a Subcontractor(s) or Suppliers(s) based only on their qualifications when CM@Risk can demonstrate it is in the best interest of the Project. All Work that is performed, after such a qualifications-based selection, for a price that is negotiated by CM@Risk will be billed in accordance with the GMP for actual costs and may be subject to audit by City.

17.6.2.1 Qualifications based selection of a Subcontractor(s)/Supplier(s) should only occur prior to the submittal of the GMP Proposal.

17.6.2.2 If a Subcontractor/Supplier selection plan was submitted and agreed to by City, CM@Risk must apply the plan in the evaluation of the qualifications of a Subcontractor(s) or Supplier(s) and provide City with its review and recommendations.

17.6.2.3 CM@Risk must receive written City approval for each selected Subcontractor(s) and Supplier(s).

17.6.2.4 CM@Risk must negotiate costs for services/supplies from each Subcontractor/Supplier selected under this method.

17.6.3 All Work must be competitively bid unless a Subcontractor or Supplier was selected pursuant to Section 17.6.2 above.

17.6.3.1 CM@Risk must develop Subcontractor and Supplier interest, submit the names of a minimum of three qualified Subcontractors or Suppliers for each trade in the Project for approval by City and solicit bids for the various Work categories. If there are not three qualified Subcontractors/Suppliers available for a specific trade or there are extenuating circumstances warranting such, CM@Risk may request approval by City to submit less than three names. Without prior written notice to City, no change in the recommended Subcontractors/Supplies will be allowed.

17.6.3.2 If City objects to any nominated Subcontractor/Supplier or to any self-performed Work for good reason, CM@Risk must nominate a substitute Subcontractor/Supplier that is acceptable to City.

17.6.3.3 CM@Risk must distribute Drawings and Specifications, and when appropriate, conduct a Pre- Bid Conference with prospective Subcontractors and Suppliers.

17.6.3.4 If CM@Risk desires to self-perform certain portions of the Work, it must request to be one of the approved Subcontractor bidders for those specific bid packages. CM@Risk's bid will be evaluated in accordance with the process identified below. If events warrant and City concurs that it is necessary in order to ensure compliance with the Project Schedule and/or the most recent Detailed Cost Estimate, CM@Risk may be authorized to self-perform Work without bidding or rebidding the Work. When CM@Risk self-performs work without bidding, only the actual costs associated with performing the Work in accordance with the approved GMP will be billed and may be subject to audit by City.

17.6.3.5 CM@Risk must receive, open, record and evaluate the bids; provided, however, that if CM@Risk or one of its affiliates is bidding to self-perform the Work that is the subject of the bid, then the bids must be received, opened, recorded and evaluated by Project Manager

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instead of CM@Risk. Bids for each category of Work must be opened and recorded at a pre-determined time. The apparent low bidders must be interviewed to determine the responsiveness of their proposals. In evaluating the responsiveness of bid proposals CM@Risk, in addition to bid price, may consider the following factors: past performance on similar projects, qualifications and experience of personnel assigned, quality management plan, approach or understanding of the Work to be performed, and performance schedule to complete the Work. The final evaluation of Subcontractor/Supplier bids must be done with Project Manager in attendance to observe and witness the process. CM@Risk must resolve any Subcontractor/Supplier bid withdrawal, protest or disqualification in connection with the award at no increase in the Cost of Work.

17.6.4 CM@Risk will be required to prepare two different reports on the subcontracting process.

17.6.4.1 Within fifteen days after each major Subcontractor/Supplier bid opening process; CM@Risk must prepare a report for City's review and approval identifying the recommended Subcontractors/Supplier for each category of Work. The report must detail: (a) the name of the recommended Subcontractor/Supplier and the amount of the Subcontractor/Supplier bid for each sub-agreement; (b) the sum of all recommended Subcontractor/Supplier bids received; (c) and trade work and its cost that CM@Risk intends to self-perform, if any.

17.6.4.2 Upon completion of the Subcontractor/Supplier bidding process, CM@Risk must submit a summary report to City of the entire Subcontractor/Supplier selection process. The report must indicate, by bid process, all Subcontractors/Suppliers contacted to determine interest, the Subcontractors/Suppliers solicited, the bids received and costs negotiated, and the recommended Subcontractors/Suppliers for each category of Work.

17.6.5 The approved Subcontractors/Suppliers will provide a Schedule of Values with their bid proposals, which will be used to create the overall Project Schedule of Values.

17.6.6 If after receipt of sub-bids or after award to Subcontractors and Suppliers, City objects to any nominated Subcontractor/Supplier or to any self-performed Work without any reasonable basis, CM@Risk must nominate a substitute Subcontractor or Supplier, preferably if such option is still available, from those who submitted Subcontractor bids for the Work affected. Once such substitute Subcontractors and Suppliers are consented to by City, CM@Risk's proposed GMP for the Work or portion thereof must be correspondingly adjusted to reflect any higher or lower costs form any such substitution.

17.7 **GMP PROPOSAL**

17.7.1 When a GMP Proposal is submitted for a phase of the Work, the GMP will have a Detailed Cost Estimate of the Costs of the Work (as set forth in Section 15.2) in each phase of the Work that is being proposed plus the current estimate for all other Work. City will not approve the GMP for the phase of work without a total estimate for the complete Project. City may request a GMP Proposal for all or any portion of the Project and at any time during pre-construction. Any GMP Proposals submitted by CM@Risk must be based on and consistent with Baseline Cost Model and the current update/revised Detailed Cost Estimate at the time of the request and include any clarifications or assumptions upon which the GMP Proposal(s) are based.

17.7.2 A GMP Proposal for the entire Project will be the sum of the Cost of the Work, CM@Risk Fee, and General Conditions Cost. CM@Risk guarantees to complete the Project at or less than

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the final GMP Proposal amount plus approved Change Orders. CM@Risk will be responsible for any costs for expenses that would cause the Cost of the Work actually incurred, including the Construction Fee and General Conditions Costs, to exceed the GMP.

17.7.3 CM@Risk must prepare its GMP Proposal in accordance with City's request for GMP Proposal requirements based on the most current completed Drawings and Specifications at that time, which unless otherwise directed by City in writing, will be at 100% Construction Drawings. CM@Risk must mark the face of each document of each set upon which its GMP Proposal is based. These documents must be identified as the GMP Plans and Specifications. CM@Risk must send one set of those documents to the Project Manager, keep one set and return the third set to the Design Professional.

17.7.4 An updated/revised Detailed Project Schedule, Equipment Plan, and Schedule of Values must be included in any GMP Proposal(s), all of which must reflect the GMP Plans and Specifications the Detailed Project Schedule must be shown in relationship to the Project Schedule and identify any variance to the Baseline Project Schedule. Any such Detailed Project Schedule updates/revisions must continue to comply with the requirements of Section 17.3.1 through 17.3.5.

17.7.5 GMP Proposals(s) Review and Approval

17.7.5.1 CM@Risk must meet with the Project Team to review the GMP Proposal(s) and the written statement of its basis. In the event the Project Team discovers inconsistencies or inaccuracies in the information presented, CM@Risk must make adjustments as necessary to the GMP Proposal.

17.7.5.2 If during the review and negotiation of GMP Proposals design changes are required, City may authorize and cause the Design Professional to revise the GMP Plans and Specifications to the extent necessary to reflect the agreed-upon assumptions and clarifications contained in the final approved GMP Proposal. Such revised GMP Plans and Specification will be furnished to CM@Risk. CM@Risk must promptly notify the Project Team in writing if any such revised GMP Plans and Specifications are inconsistent with the agreed upon assumptions and clarifications.

17.7.6 All portions of or items comprising the GMP Proposal are subject to audit by City, as deemed appropriate by City, including, without limitation, any based upon unit prices or Work to be self- performed by CM@Risk, or its affiliates.

17.8 **PAYMENT PROCEDURE FOR PRE-CONSTRUCTION SERVICES**

17.8.1 Requests for monthly payments by CM@Risk for Pre-Construction Services must be submitted monthly and must be accompanied by a progress report, detailed invoices and receipts, if applicable. Any requests for payment must include, as a minimum, a narrative description of the tasks accomplished during the billing period, a listing of any Deliverables submitted, and copies of any Subconsultants' requests for payment, plus similar narrative and listings of Deliverables associated with their Work. Payment for services negotiated as a lump sum will be made in accordance with the percentage of work completed during the preceding month.

17.8.2 In no event will City pay more than seventy-five (75%) of the Agreement Price until acceptance of ALL Pre-Construction Services and award of the final approved Construction Services Agreement for the entire Project by City Council. If CM@Risk does not prepare a

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GMP Proposal that is acceptable to City, or the GMP Proposal exceeds the City's Construction Budget, then CM@Risk understands and acknowledges that it will forfeit any right to receive the 25% of the Agreement Price being retained by City.

17.8.3 CM@Risk agrees that no charges or claims for costs or damages of any type will be made by it for any delays or hindrances beyond the reasonable control of City during the progress of any portion of Pre-Construction Services specified in this Agreement. Such delays or hindrances, if any, will be solely compensated for by an extension of time for such reasonable period and may be mutually agreed between the parties. It is understood and agreed, however, that permitting CM@Risk to proceed to complete any such Services, in whole or in part after the date to which the time of completion may have been extended, will in no way act as a waiver on the part of City of any of their respective legal rights herein.

17.8.4 No compensation to CM@Risk will be allowed contrary to Article I, Chapter I, Title 34 of the Arizona Revised Statutes.

17.8.5 If any service(s) executed by CM@Risk is abandoned or suspended in whole or in part, for a period of more than 180 days through no fault of CM@Risk, CM@Risk is to be paid for the services performed prior to the abandonment or suspension.

17.9 **SURVIVAL OF THE DESIGN SERVICES AGREEMENT, DUTIES, OBLIGATIONS AND WARRANTIES**

If the GMP Proposal is accepted by City and a Construction Agreement is entered into between City and CM@Risk, the duties, obligations and warranties of CM@Risk under the Pre- Construction Services Agreement survive and are incorporated into the resulting Construction Agreement.

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SECTION 15 – APPENDICES

The following Appendices attached hereto are referenced in the General Conditions and are incorporated herein.

Appendix 1 – Policy Statement for Calculating Delays and Damages
Appendix 2 – Cost Reduction Incentive Proposals for Design Bid Build Agreements
Appendix 3 – Contractor's Affidavit Regarding Settlement of Claims
Appendix 4 – Forms of Performance Bond
Appendix 5 – Forms of Payment Bond
Appendix 6 – Dispute Resolution
Appendix 7 – Certificate of Completion
Appendix 8 – Construction Sign Detail
Appendix 9 – Cost of the Work (Applicable solely to Construction Manager at Risk and Job Order Contracting)
Appendix 10 Landscape Establishment Period

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CALCULATING DELAYS AND DAMAGES

The purpose of this policy statement is to establish guidelines and procedures for negotiation between the Contractor and City of Chandler relating to compensation for delays pursuant to Arizona Revised Statutes (A.R.S.) 34-221(F). This policy statement contains notice requirements in addition to those set forth in the Agreement Documents, and will be the Agreement Provision contemplated by that statute.

NOTE: As used herein, the term "Engineer" will refer to the City of Chandler City Engineer or his/her designated representative. Nothing in this Policy Statement will be construed to void any provision in the Agreement which requires timely notice of delays or provides for arbitration or any other procedure for settlement or provides for liquidated damages.

I. TYPES OF DELAYS:

For the purposes of this document, there are essentially four types of delays encountered by City of Chandler Construction Contractors; excusable/compensable, excusable/non-compensable, non- excusable, and concurrent. Only delays that extend Agreement Completion Time set forth in the Agreement Document will be considered for issues relating to Agreement extensions or additional compensation. All other delays are considered to be activity delays and do not entitle the Contractor to either time extensions or additional compensation. Agreement Completion Time will be defined as the date set forth in Maricopa Association of Governments (MAG) Uniform Standard Specification Section 101 and as may be modified by the Agreement Documents.

A. Excusable/Compensable:

These are delays caused solely by the City's actions or inactions, are unreasonable under the circumstances, and which were not within the contemplation of the parties to the Agreement at or prior to the time of execution of the Agreement. Since the Contractor presumably has no control over the events causing the delay, he may be entitled to both Agreement time extensions and additional compensation for delay damages. Further, he/she may be entitled to additional compensation from the impact of that delay on other work. Examples of excusable/compensable (E/C) delays include: failure to properly locate an underground City-owned utility within 2 feet of the actual location; failure to relocate City-owned utilities far enough in advance of construction in an area where the Contractor is scheduled to work that it delays start or completion of the Contractor's regularly scheduled work; failure to provide City-furnished equipment or materials in a timely manner if required by the Agreement; failure to acquire necessary Right-of-Way or Public Utility Easements prior to the Contractor beginning Work in the area; failure to timely return Shop Drawings or other Agreement Submittals in accordance with the Agreement; unreasonable delay by the City in making decisions which affect critical activities; surveying errors when the City is contractually responsible for providing Project Surveying. This list is not meant to be all inclusive, but is intended merely as examples of the type of City action or inaction which can result in a Contractor's claim for additional time and compensation.

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B. Excusable/Non-compensable:

These are delays over which neither the City nor the Contractor had control. Since both parties to the Agreement have been potentially damaged by the delay, but neither have caused it, only Time Extensions are warranted. Examples of excusable, non-compensable (E/N) delays include: unusually severe weather; fire; acts of God; failure of non-City owned utilities (SRP, CenturyLink, Cable TV, Southern Pacific Railroad, and Southwest Gas, etc.) to properly or timely locate accurately; failure of non-City owned utilities to relocate in advance of construction; the voluntary or involuntary filing for Bankruptcy protection by a Supplier or Subcontractor which causes the Supplier/Subcontractor to fail to meet a contractual deadline provided the Contractor can provide documentation that he/she executed the required Purchase Orders/Subcontract Agreements and received delivery schedules which, if met, would have eliminated the delay; delays as a result of an incomplete shutdown of a City or non-City owned utility main (the City does not guarantee a complete shutdown). This list also is not necessarily all inclusive but merely indicative of type and class of E/N delays.

C. Non-excusable/Non-compensable:

These are delays caused by the actions or inactions of Contractor or an officer, employee, agent, Subcontractor, Supplier or any other party for whom the Contractor is responsible. Since the Contractor has assumed responsibility for the risks associated with the events that caused the delay, he/she are not entitled to either time extensions or monetary delay damages. All non-excusable delays are also non-compensable. Examples of non- excusable, non-compensable (N/N) delays include: failure to perform by the Contractor, its Subcontractors and/or Suppliers (except as noted in section I.B above); failure to provide adequate labor, materials, and/or equipment on the Project; failure to perform contractually-required coordination with utilities, agencies and other Contractors; failure to notify the Engineer, in writing, of delay impacts within two working days, as required by MAG 104.2.3, or the next work day, as required by MAG 109.8.2; failure to timely submit Shop Drawings; failure to pothole or otherwise visually locate utilities sufficiently ahead of the Work to allow the Engineer to direct corrective action when necessary; delays due to retesting of previously failed work, re-inspection, and/or restaking resulting from faulty workmanship, poor quality control, or lack of compliance with Agreement Specifications. Again, this list is not necessarily all inclusive.

D. Concurrent:

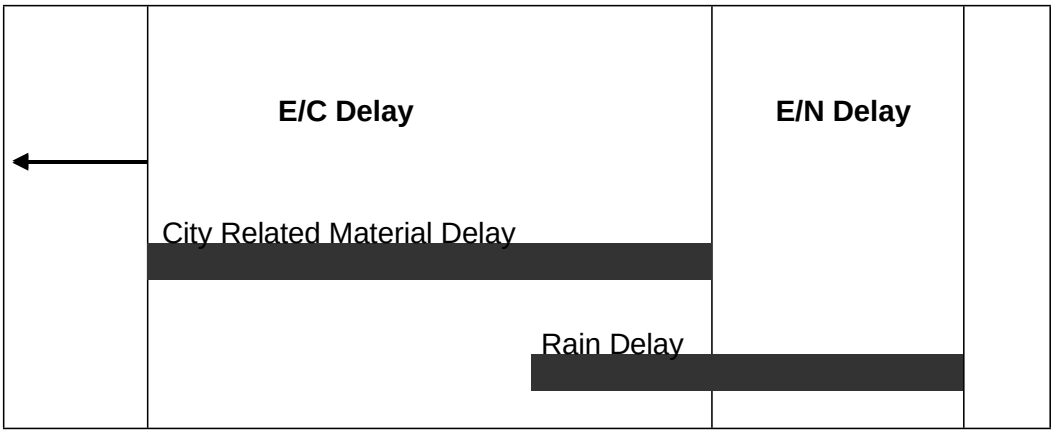
When two or more delays occur simultaneously or overlap, each delay is analyzed separately to determine its impact on the overall project completion date based on when that delay started. Once again, only those delays which actually extend the Agreement completion time are considered as delays. The concurrent delay is considered an additional delay only to the extent it prolongs the delay to the Agreement Completion Time beyond the date that the one it is concurrent with had already delayed that date. For example, if two delays are concurrent, and one is five days long and the second is seven days long, the second concurrent delay will only extend the Agreement Completion Time by two days. The same method of analysis is

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used when there are multiple concurrent delays. Only those extending the Project Completion Date are considered to be delays for the purposes of this policy. The portion of each concurrent delay that delays the completion of the work is classified in the same manner as described previously for individual delays and being either E/C, E/N or N/N.

An example of a concurrent delay is where the City delays furnishing material, but the Contractor could not have installed it anyway due to unusually severe weather. The effect of the first delaying activity will extend for the full duration and will be considered controlling on the Contractor's schedule. A subsequent, concurrent delay will thereafter only be considered to effect the project completion (if at all) once the first delaying activity has ceased to impact the project completion. In this case, if the unusually severe weather continued and delayed the work after the material was delivered, the first portion of the delay would be classified E/C (delay for material) and the second as E/N (delay due to unusually severe weather). Using the procedure set forth above, the entire concurrent portion would be considered E/C as shown in the chart which follows.

Example of a Concurrent Delay:



II. ANALYZING THE DELAY:

The Contractor must provide all documents required or requested by the Engineer to analyze the delay(s). It is important to understand that, prior to the delay analysis, delays and their impacts are alleged issues. The information the Contractor provides will be compared with the Inspector's Daily Log, Schedules and other available Project information and together they will support or refute that delays occurred and, if so, how they impact other work and the overall project completion. The Contractor's delay in providing these documents will be considered prima facie evidence that either the delay did not occur or it did not impact the Project Completion Date and any claim for time extension or damages will be denied.

The Engineer will accept delay analyses in CPM format, as these may demonstrate to his/her satisfaction whether or not Project Completion has been impacted by a specific event. If the Contractor chooses not to use CPM scheduling procedures, then the burden will be on the Contractor to prove to the Engineer's satisfaction that the Project Completion has been impacted. The procedures

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below assume that the Contractor is using CPM scheduling methods. As a minimum the Contractor must provide the following materials to the Engineer:

A. As-Planned Schedule. The initial construction schedule, required by the Agreement Documents, will be considered the baseline schedule. It is to the Contractor's advantage that the As-Planned (baseline) Schedule be as detailed as possible in order for delays, as they occur, to be incorporated into the schedule in representative locations. It is also to the Contractor's advantage to use a computer software program to generate the schedule since updated schedules are required monthly by the Agreement Documents and since updated schedules are required to support delays and requests for additional compensation for delays. The As-Planned (baseline) Schedule must be presented in network format which clearly shows the interrelationships of the activities. The Contractor must also provide a printout of the activities showing early start, early finish, late start, late finish, duration and float. The activity list printout must also indicate predecessor and successor activities.

B. As-Built Schedules. The as planned (baseline) schedule must be updated with complete progress-to-date information (actualized) up to the date of the start of the alleged delay. Each updated schedule will serve as the as-built schedule for analyzing the alleged delay and provide a new baseline as-planned schedule for the next delay. This process must be repeated for each alleged delay as it occurs. In updating the baseline schedule, the alleged delay must be treated as an activity and inserted into the schedule as a predecessor to the impacted activity (ies). When an activity that has already started is impacted, it is preferable to divide this activity into two parts and show the impact affecting the second part. For schedules which incorporate a time line (or data date), the delay activity must be inserted at the time it actually occurred. Some software scheduling programs have a PAUSE-RESUME feature that can be used to facilitate the requirements. The updated schedule must also be accompanied by a listing of activities as with the baseline schedule. This activities list must contain the alleged delay as an activity showing the duration and the activities which are predecessors and successors to it. When computer generated schedules are used, the Contractor must provide, in electronic media format, the complete data files for the updated schedule that included the delay activity, preferably either in Suretrak or in Microsoft Project. Each electronic media must contain a label identifying the Project name, Contractor's name, program name and version number, data date and project finish date.

C. Other Documents: In order to determine the amount of the alleged delay and if it is compensable, the Contractor must provide all backup documentation relevant to the issue and as required by the Engineer. This documentation must include copies of such items as: purchase orders; delivery schedules; correspondence; memoranda of telephone calls; force account daily worksheets (initialed by the Inspector); payroll data; estimating (bid) worksheets; and any other materials which may be requested by the Engineer.

D. Procedure: Only after receipt of sufficient documentation will the Engineer analyze each alleged delay and determine if it is supported or refuted. If supported, the Engineer will determine if it is excusable or non-excusable, compensable or non-

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compensable. If the Engineer determines that the delay did not affect the Project Completion, the as-planned schedule, which has been updated to the date of the alleged delay, must be revised to indicate this. If the Engineer determines the delay did occur but was N/N, then no time extension will be granted. It is imperative that an actualized schedule be submitted as soon as the occurrence of the alleged delay is known. In no event will the Contractor submit an actualized updated schedule later than 60 days after the occurrence of the alleged delay becomes known.

If the Engineer determines the delay did occur and was excusable but, due to a reason listed in section I.B. is non-compensable, he/she will determine the length of the E/N delay and prepare a Change Order to add that time to the Agreement. The Engineer's decision will be final.

If the Engineer determines the delay was excusable and compensable, he/she will determine the length of the E/C delay and proceed to review the Contractor's damage calculations in accordance with Section III. The Engineer will check the Contractor's calculations, review the backup documentation provided, and prepare a Change Order to cover both the additional compensation and the time extension. The Engineer's decision on both the time extension and additional compensation for the delay will be final.

If the issue involves a concurrent delay, the Engineer will analyze available data to determine the portions which are E/C, E/N, and/or N/N as described above. The Engineer will proceed to determine the length of E/C delay and verify the Contractor's delay damage calculations, if any are provided. Upon completion of this review, the Engineer will prepare a Change Order for the Contractor's review and signature. The Engineer's decision regarding excusable delay and additional compensation for the delay is final.

The amount of time the Engineer will require to analyze the alleged delay(s) will depend upon the Engineer's workload, the complexity of the delay analysis, availability of supporting data, extent of cooperation by the Contractor, and other factors beyond the Engineer's control. It is entirely possible other delay(s) may occur while the Engineer is analyzing particular claim for delay(s). The Engineer's failure to respond to the Contractor in a set period of time will not be used as the basis for a further delay claim or as justification for extending and existing delay claim. The time required for delay analysis by the Engineer will not be counted against the time allotted for processing Final Payment as required by (MAG Section 109.7(B)) or the release of retention and Final Payment as prescribed by A.R.S. Arizona Revised Statutes §34-221.

III. CALCULATING MONETARY DELAY DAMAGES:

Additional compensation for delay, when authorized by the Engineer, will be calculated in accordance with MAG Section 109.5 ACTUAL COST WORK with the following exceptions:

A. No additional compensation or other monetary damages will be awarded or paid for any loss of anticipated profits by the Contractor, Subcontractors or Suppliers.

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B. No additional compensation or other monetary damages will be awarded for home office overhead or non-project general conditions of the Contractor, Subcontractors or Suppliers.

C. Equipment:

1. Contractor-owned equipment rate calculations must be computed in accordance with Section 109.04(D)(3), Arizona Department of Transportation "Standard Specifications for Road and Bridge Construction," 2008 or latest edition and as modified herein. Year and regional adjustment factors must be based on the most recent publications of the Rental Rate Blue Book for Construction Equipment, published by the Equipment Guide-Book Company, San Jose, CA, same as provided by ADOT and in print as of the date of alleged delay. In no event will the compensation for Contractor-owned equipment exceed the purchase price, including tax, paid by the Contractor for the equipment. Compensation will not be allowed for small tools or equipment that show a daily equipment rental rate of less than $5.00 per day or for unlisted equipment that has a value of less than for hundred dollars ($400.00).
2. For leased and rented equipment or equipment not otherwise listed in the Blue Book, rental contracts, or other supporting data will be used to establish the hourly rate. No hourly operating expense will be allowed for delay on standby equipment. In no case will equipment be considered for rental which exceeds the hourly rate for the first eight hours and the daily rate divided by eight for all additional hours as compared with similar equipment listed in the Blue Book. The hourly standby rate must be computed as the lesser of:

    a. Dividing the monthly invoice or rental value by 176 hours per month when the equipment is utilized by the Contractor for more than three weeks;

    b. Dividing the monthly invoice or rental value by 40 hours per week when the equipment is utilized by the Contractor for more than three days.

    In no event will compensation be paid for delay at more than 8 hours per day or 40 hours per week.

3. Except for vehicles used by supervisory personnel, all equipment will be paid at the "standby" rate during the delay period.

4. Equipment brought solely to mitigate the delay (such as pumps, light plants, etc.) may be paid in accordance with ADOT section 109.04(D) (3).

5. The Blue Book regional adjustment will apply in determining rental rates.

D. Material:

Allowable material charges may include, in addition to material incorporated in the

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work material used to mitigate the delay such as barricades, plates, shoring, cold mix, etc. Except in emergencies the Contractor will not employ such material without the prior written approval of the Engineer.

E. Labor:

1. Except for Supervisory Personnel (Superintendent, Project Engineer, and Foremen), labor wages will not be paid after the first one-half day of claimed delay or impact. It is expected the Contractor will reassign or layoff unneeded employees.

2. For Foreman wages to be included, that Foreman must have been actively employed on the project prior to the commencement of the delay and be directly responsible for the activity being delayed.

3. Labor burden must be actual amounts incurred but must not exceed the ADOT approved rate.

F. All costs (equipment, material, and labor) must be substantiated by the City of Chandler's Daily Work Reports.

IV. DOCUMENT REQUIRED FOR CLAIM ANALYSIS:

For purposes of reviewing the Contractor's request for additional compensation, it will be required that the Contractor submit the following listed information. Information requested must be prepared on forms which are substantially similar to the City of Chandler's Daily Work Report form, a copy of which is attached as an exhibit.

A. Labor:

For each employee, laborer, and foreman, for which compensation is requested: Name, classification, dates of work performed, daily hours worked, total hours worked, labor rates, labor burden rates, overtime or premium time charges. Further, the Contractor must make available for inspection and copying to the Engineer the following listed documentation.

1. Certified payroll reports for the period of work claimed.
2. Accounting of Fringe Benefits – certified by a CPA.
3. Contractor's and Subcontractor's daily field reports and daily diaries.

B. Materials:

For all materials for which compensation is requested, if any, total quantities of materials, prices, extensions and transportation costs must be provided on a daily basis. Further, the Contractor must make available for inspection and copying to the Engineer the following listed documentation.

1. Invoices for all materials incorporated.
2. Weigh tickets.
3. Purchase orders.

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4. Delivery schedules.
5. Quotes or proposals from manufacturers or supplier.
6. Freight bills, Bills of Lading, or other documentation to show transportation costs.
7. Restocking charges-invoices from vendor.

C. Equipment:

For all equipment, the Contractor must provide the Engineer with the designation, dates and hours of usage, dates and hours of standby, if any, daily hours, total hours, rental rates and extension for each unit of equipment and machinery. Rental rates will be as established in Section III. Further, the Contractor must make available for inspection and copying to the Engineer the following listed documentation.

1. Owned:
   a. Purchase contracts(s).
   b. Depreciation schedule(s).
   c. Invoices for fuel, lube, repairs and other operating costs.

2. Leased:
   a. Lease agreement with hourly rate, overtime rate, double shift rate, etc.
   b. Invoices or other documentation showing hours worked on a daily basis.

D. Subcontractors/Owner-Operators:

In the event the Contractor submits a claim which includes requests for compensation for Subcontractors of Owner-Operators, the same information requested of the Contractor must be provided by the Subcontractor/Owner-Operator. Further, the Contractor must make available for inspection and copying to the Engineer the following listed documentation.

1. Bid/Estimate work sheets and/or spreadsheets.
2. Subcontract Agreements or Agreements with Owner-Operator.
3. All invoices and billing statements received from the Subcontractor/Owner-Operator which relates to the amount requested.

E. Miscellaneous:

Further, the Contractor must make available for inspection and copying to the Engineer the following listed documentation.

1. Evidence of payment for bonds and insurance premiums (MAG 109.5.6).
2. Taxes – unless the Contractor can show otherwise, taxes are reimbursable at 65% of the total cost (less bonds and insurance).

V. TIME LIMIT ON SUBMISSIONS OF CLAIM FOR DELAY OR IMPACT DAMAGES:

No claims for delay or impact damages will be considered or allowed more than 45 days after the event or occurrence which the Contractor claims gives rise to the delay or impact. In no event will a

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claim for delay or impact damages be considered after submission by the Contractor of the Final Payment Request.

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COST REDUCTION INCENTIVE PROPOSALS FOR DESIGN BID BUILD AGREEMENTS

The Contractor may submit to the Engineer proposals for modifying the Plans, Specifications, or other requirements of the Agreement for the sole purpose of reducing the total cost of Project construction. The proposals must not impair in any manner the essential functions or characteristics of the project; including but not limited to service life, economy of operations, ease of maintenance, desired appearance, compatibility with existing or planned equipment, standardization of systems, or design and safety standards.

It must not be inferred from this Policy that the Engineer is required to consider any proposal submitted.

Submissions that propose changes in the basic design of a bridge, propose changes in pipe line size, materials, bedding conditions, pipe specifications; or that propose any change in pavement design will not be considered.

Proposals submitted pursuant to this Policy will be identified as Cost Reduction Incentive Proposals. They must be submitted in writing and, at a minimum, contain the following.

1. Complete the attached or similar cost reduction incentive proposal form.

2. A description of both the existing Agreement Requirements for performing the work and the proposed changes.

3. All Engineering Drawings and computations necessary for the thorough and expeditious evaluation.

4. An itemization of the existing Agreement Requirements that must be changed if the Proposal is adopted and a recommendation as to the manner in which the change should be made.

5. A detailed estimate of the cost of performing the Work under the existing Agreement and under the proposed changes, including the cost of developing and implementing the changes.

6. The Agreement items affected by the proposed changes and any variations in quantities resulting from the changes.

7. An objective estimate of any effects the proposal will have on collateral cost to the City, costs of related items, and cost of maintenance and operation.

8. A statement as to the effect that the Proposal will have on the time for the completion of the Project.

9. A statement as to the time by which a Change Order adopting the Proposal must be executed or when the Engineer must have given verbal approval.

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Proposals will be processed expeditiously; however, the City will not be liable for any delay in acting upon any Proposal nor for any failure to accept any Proposal pursuant to this Special Provision.

The Engineer will be the sole judge of the acceptability of a Proposal and of the estimated net savings in construction costs from the adoption of all or any part of the Proposal. The Contractor will be notified in writing by the Engineer as to whether his/her Proposal has been accepted. The decision by the Engineer is final.

When the City deems such action to be appropriate, it reserves the right to require the Contractor to share equally in the cost to the City of investigating, evaluating, and processing the proposal as a condition for the consideration of such Proposal. Such cost must be shared whether the Proposal is accepted or rejected. When such a condition is imposed, the City will estimate these costs and the Contractor must indicate his acceptance thereof in writing. Such acceptance will authorize the City to deduct the Contractor's share of the costs from any monies due or that may become due to the Contractor under the Agreement.

If the Contractor's Proposal is accepted in whole or in part, the necessary Agreement Modifications and Agreement Price Adjustments will be affected by the execution of a Change Order which will specifically state that it is executed pursuant to this Special Provision.

The Contractor must continue to perform the work in accordance with the requirements of the Agreement until a Change Order incorporating the Proposal has been executed or until he/she has been given verbal approval by the Engineer that his/her Proposal has been accepted. If the Change Order has not been executed or he/she has not been given verbal approval on or before the date specified on the attached cost reduction incentive proposal form or on or before such other date as the Contractor may have subsequently specified in writing, the Proposal may be deemed to be rejected.

The executed Change Order will incorporate the changes in the Plans, Specifications, or other requirements of the Agreement which are necessary to permit the Proposal, or such part of it which has been accepted, to be put into effect, and will include any condition – upon which the City's approval thereof is based, if such approval is conditional. The executed Change Order may also extend the time for the completion of the Agreement if such an extension has been deemed to be warranted by the Engineer as a result of his evaluation of the Proposal.

The executed Change Order will also establish the estimated net savings in the cost of performing the Work attributable to the Proposal effectuated by the Change Order. In determining the net savings, the right is reserved to the Engineer to disregard the Agreement bid prices if, in his/her judgment, such prices do not represent a fair measure of the value of the Work to be performed or to be deleted. The net savings will be established by determining the Contractor's cost of performing the Work, taking into account his/her cost of developing the Proposal and implementing the change, and reducing this amount by any ascertainable collateral costs to the City. The executed Change Order may provide that the Contractor be paid 50 percent of the estimated net savings amount.

The executed Change Order may also provide for the adjustment in Agreement prices. Agreement prices may be adjusted by subtracting the City's share of the accrued net savings.

The amount specified to be paid to the Contractor in the executed Change Order which effectuates a Cost Reduction Proposal will constitute full compensation to the Contractor for the Cost Reduction

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Proposal and the performance of the work thereof pursuant to the said Change Order.

Upon acceptance of a Cost Reduction Incentive Proposal, any restrictions imposed by the Contractor on its use or on disclosure of the information will become void, and the City thereafter will have the right to use all or any part of the Proposal without obligation or compensation of any kind to the Contractor.

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COST REDUCTION INCENTIVE PROPOSAL FORM

TO: CIP City Engineer

FROM:

PROJECT NAME: RECLAIMED WATER PIPE EXTENSION – GERMANN ROAD AND HAMILTON STREET
CITY PROJECT NUMBER: WW2206.404

DATE:

Summary of Change (Brief description of proposed change including advantages and disadvantages):

ESTIMATED COST SUMMARY (Attached detailed estimate):

A.	Original Cost:	$
B.	Proposed Cost:	$ _____
C.	Construction Savings (A-B):	$ _____
D.	Gross Savings (Included OH %, Bond %)	$ _____
E.	Contractor Implementing	$_____
F.	City Implementing Cost:	$_____
	Reduction in Agreement Price (C+D-E-F) x 50%:	$ _____

Date by which a Change Order must be issued so as to obtain maximum cost reduction:

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CITY OF CHANDLER, ARIZONA
PUBLIC WORKS & UTILITIES DEPARTMENT

CONTRACTOR'S AFFIDAVIT REGARDING SETTLEMENT OF CLAIMS

_____, Arizona
Date _____

Project Name: RECLAIMED WATER PIPE EXTENSION – GERMANN ROAD AND HAMILTON STREET
City Project No.: WW2206.404

To the City of Chandler, Arizona

Gentlemen:

This is to certify that all lawful claims for materials, rental of equipment and labor used in connection with the construction of the above project, whether by subcontractor or claimant in person, have been duly discharged.

The undersigned, for the total compensation of $_____, as set out in the final pay application, as full and complete payment under the terms of the Agreement, hereby waives and relinquishes any and all further claims or right of lien under, in connection with, or as a result of the above described project. The undersigned further agrees to indemnify and save harmless the City of Chandler against any and all liens, claims or liens, suits, actions, damages, charges and expenses whatsoever, which said City may suffer arising out of the failure of the undersigned to pay for all labor performances and materials furnished for the performance of said installation.

Signed and dated at _____, this _____ day of _____ 20____.

_____
CONTRACTOR

By _____

STATE OF ARIZONA)
) SS
COUNTY OF MARICOPA)

The foregoing instrument was subscribed and sworn to before me this _____ day of _____ 20 _____.

_____
Notary Public

_____
My Commission Expires

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PERFORMANCE BOND

ARIZONA STATUTORY PERFORMANCE BOND
PURSUANT TO TITLES 28, 34, AND 41, ARIZONA REVISED STATUTES
(Penalty of this bond must be 100% of the Agreement amount)

KNOW ALL MEN BY THESE PRESENTS THAT:_____

(hereinafter "Principal"), and _____ (hereinafter "Surety"), a corporation organized and existing under the laws of the State of _____ with its principal office in the City of _____, holding a certificate of authority to transact surety business in Arizona issued by the Director of Insurance pursuant to Title 20, Chapter 2, Article 1, as Surety, are held and firmly bound unto _____(hereinafter "Obligee") in the amount of _____ (Dollars) ($_____), for the payment whereof, Principal and Surety bind themselves, and their heirs, administrators, executors, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has entered into a certain written Agreement with the Obligee, dated

the _____ day of _____, 20___ for construction of **RECLAIMED WATER PIPE EXTENSION – GERMANN ROAD AND HAMILTON STREET, City Project No. WW2206.404** which Agreement is hereby referred to and made a part hereof as fully and to the same extent as if copies at length herein.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that if the Principal faithfully performs and fulfills all the undertakings, covenants, terms, and conditions of the Agreement during the original term of the Agreement and any extension of the Agreement, with or without notice of the Surety, and during the life of any guaranty required under the Agreement, and also performs and fulfills all the undertakings, covenants, terms, conditions, and agreements of all duly authorized modifications of the Agreement that may hereafter be made, notice of which modifications to the Surety being hereby waived, the above obligation is void. Otherwise it remains in full force and effect.

PROVIDED, HOWEVER that this bond is executed pursuant to the provisions of Title 34, Chapter 2, Article 2, Arizona Revised Statutes, and all liabilities on this bond will be determined in accordance with the provisions of Title 34, Chapter 2, Article 2, Arizona Revised Statutes, to the same extent as if it were copied at length in this Agreement.

The prevailing party in a suit on this bond may recover as part of the judgment reasonable attorney fees that may be fixed by a judge of the court.

Witness our hands this _____ day of _____, 20__.

_____
PRINCIPAL SEAL

_____
AGENT OF RECORD

By _____

_____
SURETY SEAL

_____
AGENT ADDRESS

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PAYMENT BOND

ARIZONA STATUTORY PAYMENT BOND
PURSUANT TO TITLES 28, 34, AND 41, OF THE ARIZONA REVISED STATUTES
(Penalty of this Bond must be 100% of the Agreement amount)

KNOW ALL MEN BY THESE PRESENTS THAT:_____

(hereinafter "Principal"), as Principal, and _____(hereinafter "Surety"), a corporation organized and existing under the laws of the State of _____ with its principal office in the City of _____, holding a certificate of authority to transact surety business in Arizona issued by the Director of the Department of Insurance pursuant to Title 20, Chapter 2, Article 1, as Surety, are held and firmly bound unto _____ (hereinafter "Obligee") in the amount of _____ (Dollars) ($_____), for the payment whereof, the Principal and Surety bind themselves, and their heirs, administrators, executors, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has entered into a certain written Agreement with the Obligee, dated the _____ day of _____, 20___ for construction of **RECLAIMED WATER PIPE EXTENSION – GERMANN ROAD AND HAMILTON STREET, City Project No. WW2206.404** which Agreement is hereby referred to and made a part hereof as fully and to the same extent as if copied at length herein.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that if the Principal promptly pays all moneys due to all persons supplying labor or materials to the Principal or the Principal's subcontractors in the prosecution of the work provided for in said Agreement, this obligation is void. Otherwise it remains in full force and effect.

PROVIDED, HOWEVER that this bond is executed pursuant to the provisions of Title 34, Chapter 2, Article 2 Arizona Revised Statutes, and all liabilities on this bond will be determined in accordance with the provisions, conditions and limitations of Title 34, Chapter 2, Article 2, Arizona Revised Statutes, to the same extent as if it were copied at length in this Agreement.

The prevailing party in a suit on this bond may recover as part of the judgment reasonable attorney fees that may be fixed by a judge of the court.

Witness our hands this _____ day of _____, 20__.

_____
PRINCIPAL SEAL

_____
AGENT OF RECORD

By _____

_____
SURETY SEAL

_____
AGENT ADDRESS

Docusign Envelope ID: 4892B4B0-D834-4BFD-BC27-BAA8C2BD00BC

DISPUTE RESOLUTION

A. INFORMAL DISPUTE RESOLUTION

The parties to the Agreement agree that time is of the essence in relation to performance of the Agreement and completion of the Project, therefore any and all disputes in relation to the Agreement will initially be referred to the Project Manager, the Design Professional Representative and/or the Contractor Representative as applicable to the dispute, for immediate resolution. If, after good faith efforts to reach a resolution, none is reached, any party to the dispute may submit the dispute to the Dispute Resolution Representative ("DRR") process set forth below, which is intended to be an expedited process.

B. DISPUTE RESOLUTION REPRESENTATIVE ("DRR") PROCESS

1. The Parties under the Agreement agree that all claims and disputes in relation to the Project which are not resolved in the ordinary course of the Project ("Claim" or "Claims") will, as a prerequisite to any mediation, or litigation of the Claim, first be submitted for resolution between the designated Dispute Resolution Representatives of the Parties as set forth herein (the "DRR Process").

2. The DRR Process will be initiated through service of a DRR Notice as set forth below:

   a. For claims by the Contractor or the Design Professional, the DRR Process will be initiated by the party asserting the claim serving written notice on the City setting forth in detail: (i) the basis for the claim; (ii) the effect of the Claim upon the construction of, and/or Project Schedule for, the Project;
   (iii) the specific relief requested, the amount thereof, and how such was calculated; (iv) the parties involved in the Claim, and how they are involved; (v) the specific Agreement provisions in the Agreement Documents (including, if applicable, drawings and specifications) which apply; and (vi) efforts made to date to resolve the Claim.

   b. For claims by the City, the DRR process will be initiated by the City providing written notice to the other parties of the basis and amount of its claim, the parties involved in the Claim, and how they are involved, the provisions in the Agreement Documents that apply, and the relief requested.

   c. The DRR Notice will be hand-delivered and e-mailed to the other parties' designated Dispute Resolution Representatives.

3. The other parties will respond in writing to the DRR Notice ("DRR Response") within ten (10) calendar days of receipt of the DRR Notice, setting forth those items set forth in the DRR Notice that they agree with, dispute, and/or have questions concerning. The DRR Response will be hand-delivered and e-mailed to the other parties' Dispute Resolution Representatives.

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4. The designated Dispute Resolution Representatives for the Parties to the claim will then meet as soon as possible and in any event within twenty (20) calendar days of submission of the DRR Notice (regardless of whether a DRR Response has been submitted by all parties involved in the dispute), at a mutually agreed upon time and place, to attempt to resolve the Claim based upon the DRR Notice and DRR Response.

5. At any time after the first meeting required above, either party may terminate the DRR Process by written notice to the other party.

6. The parties may agree, in writing, to extend or modify the time limits or other provisions of the DRR process in relation to a specific pending Claim.

7. Unless otherwise designated in a written notice to the other parties, the City and the representatives of the Contractor and of the Design Professional will act as the parties' designated Dispute Resolution Representatives.

8. If a resolution of the Claim is reached, that resolution must be set forth in writing and must be signed by the Parties' designated Dispute Resolution Representative. If the resolution involves a change in any Agreement Documents, the Agreement Price, the Project Schedule, or any other change requiring a written Change Order or Amendment, the parties must execute an appropriate written Change Order or Amendment pursuant to the terms of the Agreement Documents.

C. MEDIATION

1. Unless extended by written agreement of the parties involved in the dispute, any Claim not resolved through the DRR process set forth above within five (5) calendar days after the meeting required under B (4) above, or after the DRR is terminated pursuant to B (5) above, whichever is earlier, will be submitted to mediation as a condition precedent to litigation by either party.

2. The mediation will be commenced by written demand upon the other party for mediation. If the parties cannot agree upon a mediator within ten (10) calendar days of the written demand, either party may make a request to the Civil Presiding Judge of the Maricopa County Superior Court to appoint a mediator. The mediation will occur within forth (40) calendar days of the written demand for mediation, unless the parties agree, in writing, to a longer period of time.

3. The qualifications for the mediator will be that he/she be: (a) an experienced mediator, arbitrator or litigator of construction disputes; and (b) having engaged a significant portion of his/her time involving and/or resolving construction disputes for at least the past five (5) years.

4. Each party will provide to the other party and the mediator all of the information and documentation required under B(1) and (2) above, together with any additional information and documentation which the party believes relevant. In addition, the parties will exchange, and provide to the mediator such additional memoranda, information and/or documentation, as the

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mediator may request, and in the form and at such times, as the mediator may direct.

5. The parties will share the mediator's fee and any filing fees equally. The mediation will be held in Chandler, Arizona, unless another location is mutually agreed upon. Agreements reached in mediation will be specifically enforceable in any court having jurisdiction thereof.

D. LITIGATION

Any claim arising out of or related to the Agreement, except Claims relating to aesthetic effect and except those claims waived as provided for in the Agreement Documents, must be resolved through litigation in the Maricopa County, Arizona Superior Court.

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CITY OF CHANDLER, ARIZONA
PUBLIC WORKS & UTILITIES DEPARTMENT

CERTIFICATE OF COMPLETION

PROJECT NAME:	**RECLAIMED WATER PIPE EXTENSION – GERMANN ROAD AND HAMILTON STREET**		
CITY PROJECT NO.:	**WW2206.404**		
If Federally Funded:			
FEDERAL NO.:		**ADOT NO:**	

(*This section to be completed by Prime*)
I HEREBY CERTIFY THAT ALL GOODS AND/OR SERVICES REQUIRED BY CITY OF CHANDLER FOR THIS PROJECT HAVE BEEN DELIVERED IN ACCORDANCE WITH THE AGREEMENT DOCUMENTS AND BID SPECIFICATIONS AND ALL ACTIVITIES REQUIRED BY THE AGREEMENTOR UNDER THE AGREEMENT HAVE BEEN COMPLETED AS OF THE COMPLETION DATE LISTED HERE:

FINAL ACCEPTANCE DATE:	

PRIME CONTRACTOR:

FIRM NAME:			
PRINCIPAL:			
TITLE:			
SIGNATURE:		DATE:	

CERTIFIED BY [*INSERT NAME AND TITLE OF PARTY THAT OVERSEES CONSTRUCTION*]:

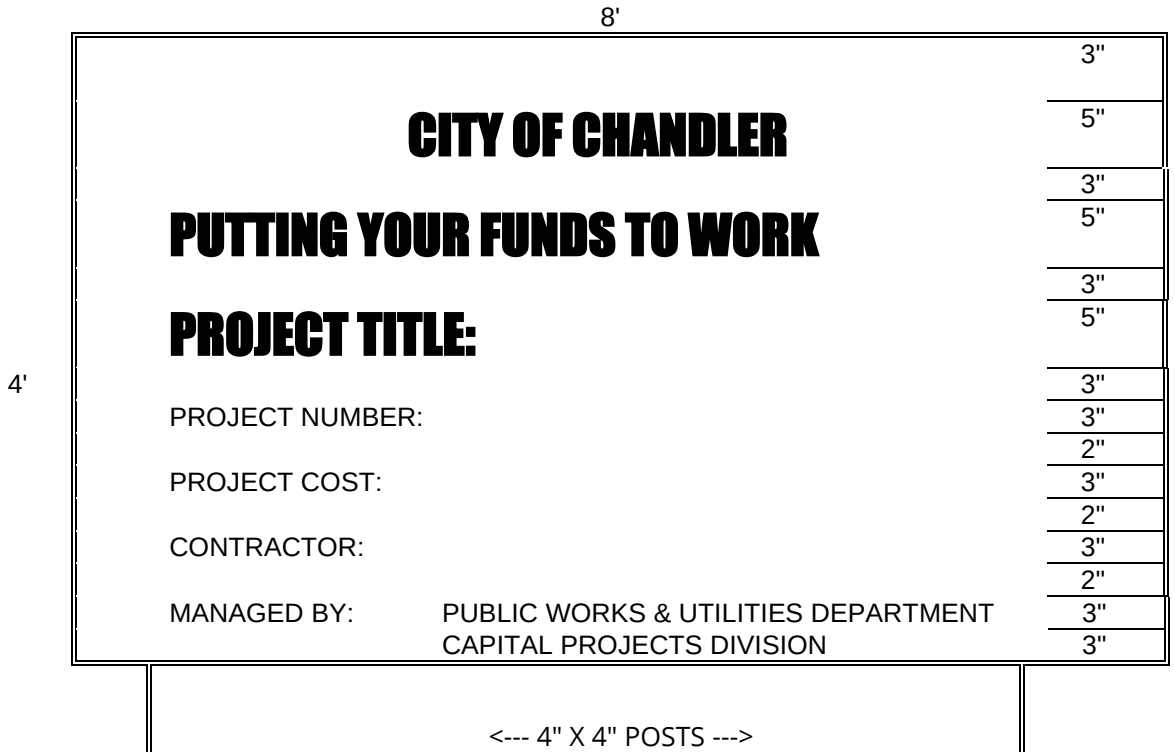
FIRM NAME:			
SIGNATURE:		DATE:	

PROJECT ACCEPTED BY CITY OF CHANDLER:

NAME:			
SIGNATURE:		DATE:	

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CONSTRUCTION SIGN DETAIL



NOTES:

SIGN(S) MUST BE FURNISHED AND ERECTED PRIOR TO COMMENCEMENT OF CONSTRUCTION. POSTS MUST BE ANCHORED A MINIMUM OF TWO FEET INTO THE GROUND. BOTTOM OF SIGN MUST BE A MINIMUM OF FOUR FEET ABOVE THE GROUND.

TYPICAL PROJECT IDENTIFICATION SIGN FOR GENERAL PROJECTS MUST BE NON-REFLECTORIZED GREEN BACKGROUND, AND NON-REFLECTORIZED WHITE LETTERS AND NUMERALS.

ONE SIGN MUST BE ERECTED FOR BUILDINGS AND OTHER LIMITED AREA SINGLE SITES. FOR MULTIPLE SITES, ONE SIGN MUST BE ERECTED AT EACH SITE.

FOR LINEAR PROJECTS ONE HALF MILE OR LONGER, PLACE ONE SIGN AT EACH END OF THE PROJECT.

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COST OF THE WORK

(APPLICABLE SOLELY TO CONSTRUCTION MANAGER AT RISK AND JOB ORDER CONTRACTING)

SECTION 1 – COSTS TO BE REIMBURSED

1.1 Cost of the Work

The term Cost of the Work will mean costs necessarily incurred by Contractor in the proper performance of the Work. Such costs must be at rates not higher than the standard paid at the place of the Project except with prior consent of City. The Cost of the Work will include only the items set forth in this Section 1.

1.2 Labor Costs

1.2.1 Wages of construction workers directly employed by the Contractor to perform the construction of the Work at the site or, with City's approval, at off-site workshops. Cost to be reimbursed will be the actual wages paid to the individuals performing the work.

1.2.2 Wages or salaries of the Contractor's supervisory and administrative personnel when stationed at the site with City's approval. No Contractor personnel stationed at the Contractor's home or branch offices will be charged to the Cost of the Work. Non-field office based Contractor management and support personnel are expected to provide service and advice from time to time throughout the job and his/her time devoted to Project matters is considered to be covered by the Contractor's Fee.

1.2.3 Wages and salaries of Contractor's supervisory or administrative personnel who would normally be stationed at the field office in accordance with Section 1.2.2 but who become engaged, at factories, workshops or on the road, in expediting the production or transportation of materials or equipment required for the Work, but only for that portion of his/her time required for the Work. Employee bonuses and/or costs associated with Employee Stock Ownership Plans ("ESOP") will not be considered reimbursable labor or labor burden costs and will be considered non-reimbursable costs considered to be covered by the Contractor's Fee.

1.2.4 Costs paid or incurred by Contractor for taxes, insurance, contributions, assessments and benefits required by law or collective bargaining agreements and, for personnel not covered by such agreements, customary benefits such as sick leave, medical and health benefits, holiday, vacations and pensions, provided such costs are based on wages and salaries included in the Cost of the Work under Subparagraphs 1.2.1 through 1.2.3.

1.2.4.1 Cost of the Work will include the actual net cost to Contractor for worker's compensation insurance attributable to the wages chargeable to the Cost of Work per this Agreement. The actual net cost of worker's compensation must take into consideration all cost adjustments due to experience modifiers, premium discounts, policy dividends, retrospective rating plan premium adjustments, assigned risk pool rebates, any applicable weekly maximums, etc. Contractor may charge an estimated amount for worker's compensation insurance costs, but will make appropriate cost adjustments to actual costs within 45 days of receipt of actual cost adjustments from the insurance carrier.

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1.2.4.3 Overtime wages paid to salaried personnel (if approved in advance in writing by City) will be reimbursed at the actual rate of overtime pay paid to the individual. No time charges for overtime hours worked on the Project will be allowed if the individual is not paid for the overtime worked.

1.2.4.4 Any overtime premium or shift differential expense to be incurred by Contractor for hourly workers will require City's advance written approval before the incremental cost of the overtime premium or shift differential will be considered a reimbursable cost. If the Contractor is required to work overtime as a result of an inexcusable delay or other coordination problems caused by the Contractor or anyone he/she is responsible for, the overtime premium and/or shift differential expense portion of the payroll expense and related labor burden costs will be considered as cost not to be reimbursed.

1.2.4.5 Reimbursable labor burden costs will be limited to payroll taxes, worker's compensation insurance, the employer's portion of union benefit costs for union employees working on the Project, and the actual verifiable fringe benefit costs incurred by Contractor for non-union individuals working on the Project subject to the following maximum percentages for the following reimbursable non-union fringe benefit costs. The following maximums (as a percentage of reimbursable actual wages by individual) will apply for each of the following types of fringe benefit costs specifically attributable to each of the non-union personnel working on the Project:

- Medical Insurance, Dental, Life & AD&D Insurance: 12.00%
- Holiday, vacation and other paid time not worked: 10.00%
- Pension Plan Contributions to Vested Employee Account, Simplified Employee Pension Plans, or 401K matching plans (Note: ESOP related costs are covered by the Contractor Fee) 10.00%

For non-union personnel, no other fringe benefit costs (other than the three specific categories listed immediately above, will be considered reimbursable Cost of Work. Any labor burden costs that are in excess of the amounts considered reimbursable or are otherwise not considered reimbursable under the terms of this agreement are intended to be covered by the Contractor Fee.

1.3 Subcontract Costs

1.3.1 Payments made by Contractor to Subcontractors in accordance with the requirements of the subcontracts.

1.3.2 For Scope of Work Bid Packages typically performed by Subcontractors, Contractor may "self- perform" such work on an actual cost basis subject to an agreed upon Guaranteed Maximum Price for the "self-performed work". The Contractor must, unless agreed to by City in writing, bid his/her proposed guaranteed Maximum Price for the work to be "self-performed" against at least three other interested trade Contractors. All savings under any such Subcontract for "self-performed work" must be applied to reduce the Cost of Work under the Agreement and the Guaranteed Maximum Price. For purposes of defining "self-performed work" subject to this provision, any division of Contractor, or any separate Contractor or Subcontractor that is partially owned or wholly owned by the Contractor or any of his/her employees or employee's relatives will be considered a related party entity and will be subject to this provision regarding "self-performed work". No self-performed work will

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be allowed to be performed on a Fixed Price basis.

1.3.3 Contractor (with respect to its Suppliers, Subcontractors and all lower tier Subcontractors) must provide City advance written notice and must obtain City's approval for any proposed Subcontract Change Order, Material Purchase Order, or other financial commitment in an amount in excess of $5,000 prior to placing such order or entering into such agreement (regardless of whether or not any such commitment will affect the prime Agreement Guaranteed Maximum Cost). It is agreed that sums applicable to any Subcontract Change Order, Purchase Order or other financial commitment entered into in violation of the above notice and approval requirement will not be included in the amounts owning to Contractor, Subcontractors or Suppliers whether as Costs of the Work or as reasonable termination costs in the event of termination.

1.4 Costs of Material and Equipment Incorporated in the Completed Construction

1.4.1 Costs, including transportation and storage, of materials and equipment incorporated or to be incorporated in the completed construction.

1.4.2 Costs of materials described in the preceding Subparagraph 1.4.1 in excess of those actually installed to allow for reasonable waste and spoilage. Unused excess materials, in any, will become City's property at the completion of the Work or, at City's option, may be sold by the Contractor. Any amounts realized from such sales must be credited to City as a deduction from the Cost of Work.

1.4.3 Proceeds from the sale of recyclable materials, scrap, waste, etc. will be credited to job cost.

1.5 Costs of Other materials and Equipment, Temporary Facilities and Related Items

1.5.1 Costs, including transportation and storage, installation, maintenance, dismantling and removal of materials, supplies, temporary facilities, machinery, equipment and hand tools not customarily owned by construction workers, that are provided by the Contractor at the site and fully consumed in the performance of the Work; and cost (less salvage value) of such items if not fully consumed, whether sold to others or retained by Contractor. Cost for items previously used by Contractor will mean fair market value.

1.5.2 Rental charges for temporary facilities, machinery, equipment, and hand tools not customarily owned by construction workers that are provided by Contractor at the site, whether rented from Contractor or others, and costs of transportation, installation, minor repairs and replacements, dismantling and removal thereof. Rates and quantities of equipment rented will be subject to City's prior written approval.

1.5.2.1 The Projected usage for each piece of equipment to be rented for use on the Project and the estimated total rentals must be considered by Contractor before the piece of equipment is rented so that an appropriate rent versus buy decision can be made. Purchased equipment must be considered "job owned". At the completion of the Project, Contractor must transfer title and possession of all remaining job-owned equipment to City, or Contractor may keep any such equipment for an appropriate fair market value credit to job cost, which will be mutually agreed to by City and Contractor.

1.5.2.2 Each piece of equipment to be rented must have hourly, daily, weekly and monthly rates and

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the most economical rate available will be reimbursed based on the circumstances of actual need and usage of the piece of equipment while it is stationed at the jobsite. When the piece of equipment is no longer needed for the work, no rental charges will be reimbursed if the piece of equipment remains at the jobsite for the convenience of Contractor.

1.5.2.3 Equipment Rental Rates

1.5.2.3.1 Compensation for equipment used on the Project will be paid in accordance with the Equipment Plan submitted by Contractor in the accepted GMP Proposal and no payments will be made in excess of the rates set forth in the Equipment Plan, or actual documented costs, whichever is less.

1.5.2.3.2 All equipment rental rates and costs are subject to City's right to audit when submitted as part of Equipment Plan and/or at any time during the Project.

1.5.2.4 The aggregate rentals chargeable for each piece of Contractor owned tools or equipment must not exceed 50% of the fair market value of such equipment at the time of its commitment to the Work. The original purchase price and date of purchase of the equipment will be documented with a copy of the purchase invoice for the piece of equipment. Such aggregate limitations will apply and no further rentals will be charged even if a piece of equipment is taken off the job and is later replaced by a similar piece of equipment. For purposes of computing the aggregate rentals applicable to aggregate rental limitations, rental charges for similar pieces of equipment will be combined if the pieces of equipment were not used at the same time.

1.5.2.5 Fair market value for used material and equipment as referred to in the Agreement Documents will mean the estimated price a reasonable purchaser would pay to purchase the used material or equipment at the time it was initially needed for the job. Note: This is usually lower than the price a reasonable purchaser would pay for similar new construction material or construction equipment.

1.5.2.6 All losses resulting from lost, damaged or stolen tools and equipment will be the sole responsibility of Contractor, and not City, and the cost of such losses will not be reimbursable under the Agreement.

1.5.2.7 Contractor will be required to maintain a detailed equipment inventory of all job-owned equipment (either purchased and charged to job cost or job-owned through aggregate rentals) and such inventory must be submitted to City each month. For each piece of equipment, such inventory should contain at a minimum (1) original purchase price or acquisition cost (2) acquisition date (3) approved Fair Market Value at the time the piece of equipment was first used on the job and (4) final disposition.

1.5.2.8 All costs incurred for minor maintenance and repairs will be reimbursed at actual cost. Such costs include routine and preventative maintenance, minor repairs and other incidental costs. Repairs and/or replacement of a capital nature are considered to be covered by the rental rates. Major repairs and overhauls are not considered routine and ordinary; consequently such costs are not reimbursable and are intended to be covered by the rental rates.

1.5.3 Costs of removal of debris from the Site.

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1.5.4 Costs of document reproductions, facsimile transmissions and long-distance telephone calls, postage and parcel delivery charges, telephone service at the site and reasonable petty cash expenses of the site office.

1.5.5 That portion of the reasonable expenses of Contractor's personnel incurred while traveling in discharge of duties connected with the Work.

1.5.5.1 No travel expenses will be reimbursed to Contractor's representatives unless Project related travel required them to travel to a destination more than 100 miles from the Project location. Any travel involving airfare will require advance written approval by an authorized City's representative.

1.5.6 Costs of materials and equipment suitably stored off the site at a mutually acceptable location, if approved in advance by the City.

1.5.7 Reproduction costs will be the actual costs of reproduction subject to a maximum of five cents ($.05) per square foot for prints and a maximum of five cents ($.05) per 8 ½ by 11-inch page for offset print or photo copied agreement documents, specifications, etc. Telephone costs will be the actual costs paid to the third party telephone company for the field office telephone.

1.6 Miscellaneous Costs

1.6.1 That portion of insurance and bond premiums that can be directly attributed to the Agreement. The City will reimburse Contractor for contractually required bond at time of first pay application for GMP and Cost-Based Agreements upon receipt of proof of payment from the Contractor. If the Contractor completes Work for less than the Agreement Price, Contractor must credit the City a pro- rated amount for the unused portion of the bond payment

1.6.1.1 Contractor's actual cost for insurance will be considered to be included within the Maximum limit for General Conditions Costs. All premiums for any insurance and bonds required for the Project must reflect the net actual costs to Contractor after taking into consideration cost adjustments due to experience modifiers, premium discounts, policy dividends, retrospective rating plan premium adjustments, assigned risk pool rebates, refunds, etc.

1.6.1.2 The amount to be reimbursed to Contractor for all contractually required insurance will be actual costs not to exceed a total of 2% of the Agreement Value, unless Contractor establishes to City's satisfaction that the actual cost is higher and City agrees to such actual higher cost in writing. If Contractor's cost of contractually required insurance is greater than the amount agreed to be reimbursed per this Agreement Provision, the difference will be considered to be covered by the Contractor's Fee. The City will reimburse Contractor for contractually required insurance on a monthly basis for GMP and Cost-Based Agreements. If Contractor can demonstrate substantial savings by paying for all insurance in advance, the City may agree to reimburse all insurance costs at time of first pay application for GMP and Cost-Based Agreements with proof of payment from Contractor.

1.6.2 Sales, use or similar taxes imposed by a governmental authority that are related to the Work.

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1.6.3 Fees and assessments for the building permit and for other permits, licenses and inspections for which Contractor is required by the Agreement Documents to pay.

1.6.4 Fees of laboratories for tests required by the Agreement Documents, except those related to defective or nonconforming Work and which do not fall within the scope of ¶ 1.7.3 below.

1.6.5 Royalties and license fees paid for the use of a particular design, process or product required by the Agreement Documents; the cost of defending suites or claims for infringement of patent rights arising from such requirement of the Agreement Documents; and payments made in accordance with legal judgments against Contractor resulting from such suites or claims and payments of settlements made with City's consent. However, such costs of legal defenses, judgments and settlements must not be included in the calculation of the Contractor's Fee or subject to the Guaranteed Maximum Price.

1.6.6 Data processing costs related to the Work. However, any such data processing costs will be limited to the cost of personal computer hardware used at the field office in the normal day to day administration, management and control of the Project. The aggregate charges for any such hardware must not exceed the Fair Market Value of the hardware at the time it was brought to the field office. If the total charges for any particular piece of hardware reach an amount equal to the Fair Market Value, that particular piece of hardware must be turned over to City whenever it is no longer needed for the Project. If Contractor elects to keep the particular piece of hardware, the job costs must be credited with a mutually agreeable amount which will represent the Fair Market Value of the particular piece of hardware at the time it was no longer needed for the job. Software or other costs associated with the use of computer programs will not be considered to be a reimbursable cost and will be considered to be covered by the Contractor's Fee.

1.6.7 Deposits lost for causes other than Contractor's negligence or failure to fulfill a specific responsibility to City as set forth in the Agreement Documents.

1.6.8 Legal, mediation and arbitration costs, including attorneys' fees, other than those arising from disputes between City and Contractor, reasonably incurred by Contractor in the performance of the Work and with City's prior written approval; which approval will not be unreasonably withheld.

1.6.9 Expenses incurred in accordance with Contractor's standard personnel policy for relocation and temporary living allowances of personnel required for the Work, if pre-approved by City in writing. If City authorizes the reimbursement of relocation costs, the reimbursable relocation expenses will be limited to a maximum of $50,000 per person. Any relocation cost incurred by Contractor in excess of the amount reimbursed by City will be considered to be covered by the Contractor's Fee.

1.7 Other Costs and Emergencies

1.7.1 Other costs incurred in the performance of the Work if and to the extent approved in advance in writing by City.

1.7.2 Costs due to emergencies incurred in taking action to prevent threatened damage, injury or

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loss in case of an emergency affecting the safety of persons and property.

1.7.3 Costs of repairing or correcting damaged or nonconforming Work executed by Contractor, Subcontractors or Suppliers, provided that such damaged or nonconforming Work was not caused by negligence or failure to fulfill a specific responsibility of Contractor and only to the extent that the cost of repair or correction is not recoverable by Contractor from insurance, sureties, Subcontractors or Suppliers.

1.8 Related Party Transactions

1.8.1 The term "related party" will mean a parent, subsidiary, affiliate or other entity having common ownership or management with Contractor; any entity in which any stockholder in, or management employee of, Contractor owns any interest in excess of ten percent in the aggregate; or any person or entity which has the right to control the business or affairs of Contractor. The term "related party" includes any member of the immediate family of any person identified above.

1.8.2 If any of the costs to be reimbursed arise from a transaction between Contractor and a related party, Contractor must notify City in writing of the specific nature of the contemplated transaction, including the identity of the related party and the anticipated cost to be incurred, before any such transaction is consummated or cost incurred. If City, after such notification, authorizes in writing the proposed transaction, then the cost incurred will be included as a cost to be reimbursed, and Contractor must procure the Work, equipment, goods or service from the related party, as a Subcontractor. If City fails to authorize the transaction, Contractor must procure the Work, equipment, goods or service from some person or entity other than a related party.

SECTION 2 – COSTS NOT TO BE REIMBURSED

2.1 The Cost of Work must not include:

2.1.1 Salaries and other compensation of Contractor's personnel stationed at Contractor's principal office or offices other than the site office, except as specifically provided in Subparagraphs 1.2.2 and 1.2.3.

2.1.2 Expenses of Contractors' principal office and offices other than the site office.

2.1.3 Overhead and general expenses, except as may be expressly included in Section 1.

2.1.3.1 Costs of Contractor's home office computer services or other outside computer processing services will be considered overhead and general expense. Accordingly, Contractor should not plan to perform any such computer related services or alternatives at the field office when such services or functions can be performed at Contractor's home or branch offices, or other outside service locations.

2.1.4 Contractor's capital expenses, including interest on Contractor's capital employed for the Work.

2.1.5 Rental costs of machinery and equipment, except as specifically provided in subparagraph 1.5.2.

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2.1.6 Except as provided in Subparagraph 1.7.3 of the Agreement, costs due to the negligence or failure to fulfill a specific responsibility of Contractor, Subcontractors and Suppliers or anyone directly or indirectly employed by any of them or for whose acts of them may be liable.

2.1.7 Any cost not specifically and expressly described in Section 1.

2.1.8 Costs, other than costs included in Change Orders approved by City that would cause the GMP to be exceeded.

SECTION 3 – DISCOUNTS, REBATES, REFUNDS AND SAVINGS

3.1 Cash discounts obtained on payments made by Contractor will accrue to City if (1) before making the payment, Contractor included them in an Application for Payment and received payment therefore from City, or (2) City has deposited funds with Contractor with which to make payments; otherwise, cash discounts will accrue to Contractor. Trade discounts, rebates, refunds and amounts received from sales or surplus materials and equipment will accrue to City, and Contractor must make provisions so that they can be secured.

3.1.1 Cost of the Work will be credited with all insurance policy discounts, performance and payment bond rebates or refunds, refunds or return premiums from any Subcontractor default insurance, refunds or rebates from any Contractor controlled insurance programs applicable to the Project, merchandise rebates of any nature, refunds of any nature, insurance dividends; and a portion of any volume rebates or free material credits earned with purchase of material or other goods and services charged to the job.

3.1.2 "Cash" discounts which may accrue to Contractor will be limited to a maximum of 1.5% of invoice cost. Any portion of "Cash" discounts greater than 1.5% will automatically accrue to City if Contractor is eligible to take advantage of the discounts.

3.2 Amounts that accrue to City in accordance with the provisions of Paragraph 3.1 will be credited to City as a deduction from the Cost of the Work.

3.3 Any and all savings on the GMP, or any separately guaranteed items comprising the GMP, will belong to City, subject to any express right in the Agreement for Contractor to share in savings. Savings are subject to City's right to audit, and may be audited separately.

SECTION 4 – GENERAL CONDITIONS COSTS

4.1 General Conditions Costs may include, but are not limited to, the following types of costs incurred by Contractor during construction of the Work to the extent they are reimbursable Costs of the Work as delineated above: payroll costs for Work conducted at the site, payroll costs for the superintendent and full-time general foremen, payroll costs for management personnel resident and working on the site workers not included as direct labor costs engaged in support (e.g. loading/unloading, clean-up, etc.), administrative office personnel, costs of offices and temporary facilities including office materials, office supplies, office equipment, minor expenses, utilities, fuel, sanitary facilities and telephone services at the site, costs of liability insurance premiums not included in labor burdens for direct labor

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costs, costs of bond premiums, costs of consultants not in the direct employ of Contractor or Subcontractors, fees for permits and licenses.

4.2 General Conditions Costs may be paid on a percentage of the Agreement Price or on a lump/stipulate sum basis as set forth in the Agreement. All costs included in the General Conditions Costs will not be separately invoiced to or paid by City.

4.3 The total amount of General Conditions Costs for the Work may be divided by the number of days allowed for performance of the Work, to determine a fixed daily rate for General Conditions Costs that may be used in computing the General Conditions Costs allocated to any period of time, or for any adjustments in the General Conditions Costs agreed to in writing by City.

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LANDSCAPE ESTABLISHMENT PERIOD

Section 1 – Description and General

Contractor is in direct control of work performed under the Landscape Establishment Period. If work is subcontracted, a representative of the Contractor will be present at the site of the work for all hours that the subcontractor works. Subcontracting of Landscape Establishment work will be permitted for weed eradication with herbicides, because of special licensing. A licensed temporary service may be used to supply labor to Contractor if Contractor has received approval from City Representatives. Contractor will submit the required subcontract documentation.

Contractor must provide adequate personnel to accomplish the required maintenance of the plant materials at intervals acceptable to City Representatives.

If not healthy at the end of the maintenance period, the maintenance must be continued until the plant material is approved by City.

1.1 Time and Schedule

Unless otherwise expressly agreed to in writing by City, the Landscape Establishment Period will be per General Conditions Section 6.5.4.

1.2 Planted Stock and Seeding Establishment

1.2.1 Tree planting and staking must be per City of Chandler Standard Detail C-801.

1.2.2 All trees will stand erect on their own without stakes when brought to this site. If the tree cannot stand on its own when nursery stakes are removed, the tree will be removed and replaced.

1.3 Pre-Emergent Herbicide and Weed Control

1.3.1 Contractor will provide three applications of an approved pre-emergent herbicide on all unpaved areas of the project, as directed by City Representatives, to control weed growth in all areas of the project. The number of applications may be increased as directed by the City Representative, and at no additional cost to City, if the City Representative deems additional applications are required to control weed growth.

1.3.2 Application sequence will be approved in advance by City. The first application of pre-emergent will be completed prior to the application of Decomposed Granite and will be included with the cost of the Decomposed Granite as specified and part of the Construction Phase portion of work. The second application of pre-emergent will be completed after installation of the Decomposed Granit and no later than half-way through the Landscape Establishment Period. The third and final application of pre-emergent will be applied 15 days prior to completion of the Landscape Establishment portion of the project. The second and third pre-emergent applications will be included with the cost of Landscape Establishment. Watering will be completed in accordance with the manufacturer's recommendations, as included and as related to each application.

1.3.3 The pre-emergent herbicide will be applied in accordance with the Technical Specifications and the recommendations of the pre-emergent herbicide manufacturer, as approved by City Representatives.

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1.3.4 The control of weeds will be accomplished by the use of herbicides. Manual removal of weeds will be required, after herbicides have taken affect.

1.3.5 Contractor is responsible for the removal and disposal of all trash and debris that during the Landscape Establishment Period. Contractor will keep the project in a neat and orderly manner during the duration of the Landscape Establishment Period.

1.4 Water

The water used during Landscape Establishment to properly maintain the plant material will be furnished by City, at designated sources from within the project limits, at no charge to Contractor. Contractor will be responsible for all equipment, materials and labor necessary to load, transport and unload water for watering purposes.

1.5 Plant Material Replacements

The plant material replacement will be considered as included in the work for Landscape Establishment, and will be made at no charge to the City.

1.5.1 Shrub and Plant Replacement - During the second half of the Landscaping Establishment period, Contractor will provide, where required, plant replacements as follows:

Original Size	**Replacement Size**
1 gallon	5 gallon
5 gallon	15 gallon
15 gallon	24-inch box
36-inch box	48-inch box

1.5.2 Tree Replacement – During the second half of the Landscape Establishment Period, Contractor will provide plant material replacements for existing plants that die as follows:

Existing Plant Material Sizes	**Replacement Size**
Trees:	
2-inch Caliper	24-inch box
4-inch Caliper	36-inch box
6-inch Caliper and greater	54-inch box
Shrubs:	
All Existing Shrubs	15 gallon

1.6 Measurement and Payment

See Technical Specifications for Measurement Payment provisions.

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EXHIBIT C

TECHNICAL SPECIFICATIONS

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CITY OF CHANDLER

PUBLIC WORKS AND UTILITIES DEPARTMENT

RECLAIMED WATER PIPE EXTENSION

GERMANN ROAD AND HAMILTON STREET

PROJECT NO. WW2206.404

TECHNICAL SPECIFICATIONS

January 2025

MAYOR
KEVIN HARTKE

CITY COUNCIL

Vice Mayor Christine Ellis
Council Member OD Harris
Council Member Jennifer Hawkins
Council Member Angel Encinas
Council Member Jane Poston
Council Member Matt Orlando

CITY MANAGER
JOSHUA WRIGHT

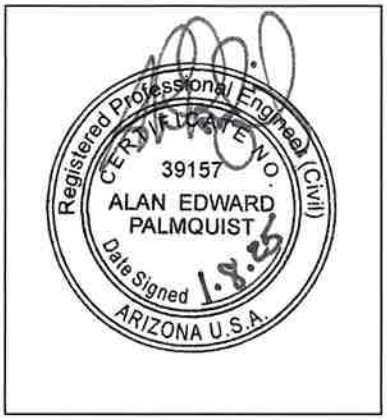
PUBLIC WORKS & UTILTIES DIRECTOR
JOHN KNUDSON, PE

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FOR
CITY OF CHANDLER
RECLAIMED WATER PIPE EXTENSION
GERMANN ROAD AND HAMILTON STREET



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SECTION 01010

SUMMARY OF WORK

PART 1 - GENERAL

1.1 SUMMARY

A. The work covered under this Contract will be performed within the City of Chandler in the following general locations:
   1. Hamilton Street – Germann Road

1.2 DESCRIPTION OF OWNER'S PROJECT

A. The overall scope project will consist of the following installation:
   1. Installation of approximately 200 linear feet of 24-inch diameter reclaimed waterline and connecting to the existing reclaimed waterlines on Hamilton Street and Germann Road.
   2. Installation of a 4-inch and 24-inch gate valve at the intersection of Hamilton Street and Germann Road.
   3. Installation of two 12-inch insertion gate valves on the existing 12-inch diameter reclaimed waterline at the intersection of Hamilton Street and Germann Road.
   4. Installation of a 24-inch gate valve on Hamilton Street approximately 350 linear feet north of Ryan Road and Hamilton Street intersection.
   5. Complete all testing and on new reclaimed waterlines prior to connecting to existing reclaimed water distribution system. Contractor to coordinate and plan construction activities with existing operational needs of the City.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

++ END OF SECTION ++

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SECTION 01025

MEASUREMENT AND PAYMENT

PART 1 - GENERAL

1.1 SUMMARY

A. Payment for Work performed by the CONTRACTOR under these Contract Documents shall be made at the approved Contract agreement prices for each of the items listed in the Bid Schedule and further broken down as listed in the Schedule of Values. Such payment shall compensate the CONTRACTOR for all materials, labor, and equipment incorporated into the Work in accordance with the Drawings and other Contract Documents. In addition, all applicable Federal, State, County, and local taxes shall be included in such payment.

B. The items listed in the Bid Schedule and the Schedule of Values constitutes all of the Bid Items for the completion of the Work. No direct or separate payment will be made for providing miscellaneous or temporary works, testing, safety, Shop and Record Drawings, and the removal of waste. Compensation for all such services and materials shall be included in the prices stipulated for the lump sum and unit pay items listed in the Schedule of Values.

C. The Bid Schedule will include items 1 through 17 listed on the Bid Schedule.

1.2 MEASUREMENT

A. Measurements of the completed Work will be made in place, with no allowance for waste.

B. Measurements of distances will be made in a horizontal plane, unless otherwise stated.

PART 2 - PRODUCTS (NOT USED)

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PART 3 - EXECUTION

BID FORM DESCRIPTION

A. The following are descriptions of the items listed on the bid form.
   1. Bid Item No. 1 – "Mobilization/Demobilization" shall be paid for at the Contract lump sum price and shall include compensation for mobilizing and demobilizing the CONTRACTOR'S construction equipment and personnel, and shall include compensation for all of the temporary facilities required to complete the Project including the CONTRACTOR'S field offices, staging area, construction photographs, permits, coordination, CONTRACTOR'S quality control testing (such as soil density), utility services, clean-up, Record Drawings, progress schedules, and all other incidental and appurtenant Work not specifically specified in the other paragraphs of this Section.

   2. Bid Item No. 2 – "Survey/Staking" shall be paid for at the Contract lump sum price and shall include compensation for the cost all surveying/staking and all incidental work as shown on Contract Documents. No additional compensation will be provided in the incident that re-staking is required.

   3. Bid Item No. 3 – "Maintenance of Plant Operation (MOPO)" shall be paid for at the Contract lump sum price and shall include compensation for the cost for all MOPO work, including labor, material, and coordination required to prepare a detailed MOPO and the associated work to meet the requirements of the approved MOPO, and all necessary incidental work as shown in Specification Section 01143 and in the Contract Documents.

   4. Bid Item No. 4 – "Sidewalk Removal & Replacement" shall be paid for at the Contract price per square foot. This item shall include compensation for all work incidental towards the removal and replacement of sidewalk as shown on the Contract Documents. All work outside of the areas specified in the Contract Documents shall be authorized by the Engineer or City Inspector and shall be paid for at the unit rate cost.

   5. Bid Item No. 5 – "Curb and Gutter Removal & Replacement" shall be paid for at the Contract price per linear foot and shall include compensation for all work incidental towards the removal and replacement of any curb and gutter as shown on the Contract Documents. All work outside of the areas specified in the Contract Documents shall be authorized by the Engineer or City Inspector and shall be paid for at the unit rate cost.

   6. Bid Item No. 6 – "4" RW Removal & Replacement" shall be paid for at the Contract price per linear foot and shall include compensation for all compensation for connection with open trenching, discovery and protection of subsurface obstructions, pipe bedding, trench backfill, trench stabilization, disposal of surface and waste material at approved locations, removal and

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replacement of the 4-inch Reclaimed Waterline, disinfection and all the incidental and appurtenant work to complete the item as specified and indicated on the Contract Documents.

7. Bid Item No. 7 – "24" RW System Piping & Fittings (DIP PC 250)" shall be paid for at the Contract price per linear foot. This shall include all compensation for connection with open trenching, discovery and protection of subsurface obstructions, pipe bedding, trench backfill, mill and overlay, pavement sawcut; pavement replacement to include pipe trench and pavement T-top per MAG standard specifications (asphaltic concrete pavement shall be 3" thick A19 EVAC base course and 2" of A12.5 EVAC surface course per City of Chandler standard detail C-203); trench stabilization, over excavation, disposal of surface and waste material at approved locations, furnishing and installing all below ground 24-inch water pipe and fittings, concrete encasement, and all incidental and appurtenant work to complete the item as specified and indicated on the Contract Documents.

8. Bid Item No. 8 – "12" Gate Valves" shall be paid for at the Contract price as each unit. This shall include compensation for all the work incidental towards installation of 12-inch diameter gate valves as specified on the Contract Documents.

9. Bid Item No. 9 – "4" Gate Valves" shall be paid for at the Contract price as each unit. This shall include compensation for all the work incidental towards installation of 4-inch diameter gate valves as specified on the Contract Documents.

10. Bid Item No. 10 – "24" Gate Valves Installation (Valves Supplied by the OWNER)" shall be paid for at the Contract price as each unit. This shall include compensation for all the work incidental towards installation of 24-inch diameter gate valves as specified on the Contract Documents.

11. Bid Item No. 11 - "Pavement Removal and Replacement" shall be paid for at the Contract price per square yard. This item shall include all compensation for labor, material and other miscellaneous items incidental for sawcut and removal of existing pavement, and mill and overlay and installing pavement base course and asphalt in areas greater than the nominal pipe trench and T-top per standard details. Asphaltic concrete pavement shall be 3" thick A19 EVAC base course and 2" of A12.5 EVAC surface course per City of Chandler standard detail C-203.

12. Bid Item No. 12 – "Permanent Pavement Marking" shall be paid for at the Contract price per linear foot. This shall include all compensation for all work incidental to replacement of temporary and permanent traffic lane

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markings as shown on the Contract Documents. Payment shall be made based on the actual quantity of markings replaced in the field.

13. Bid Item No. 13 – "SRP Power Pole Bracing" shall be paid for at the Contract lump sum price. This shall include all cost in connection with coordinating with and compensating the Salt River Project (SRP) to complete the pole bracing process as specified within the SRP Technical Provision's Guidance document.

14. Bid Item No. 14 – "Landscaping Restoration" shall be paid for at the Contract lump sum price. This shall include all compensation for all work incidental towards restoration of all existing landscaping disturbed as shown on the Contract Documents.

15. Bid Item No. 15 – "Traffic Control" shall be paid for at the Contract lump sum price. This shall include compensation for all work incidental by providing barricades, signage for traffic control during construction hours, and temporary plating during non-construction hours. CONTRACTOR shall be responsible for installing the temporary plating as required by the Contract Documents. Traffic Control is per City's General Conditions, MAG Uniform Standard Details for Public Works Construction, Section 401 "TRAFFIC CONTROL", and City of Chandler Engineering & Design Standards Manual Chapter 7 – Traffic Barricade Design.

16. Bid Item No. 16 – "Stormwater Pollution Prevention Plan" shall be paid for at the Contract lump sum price. This item shall include all cost incidental to provide SWPPP plan, installation, maintenance, and protection to prevent any storm water pollution from the project site to the adjacent areas.

17. Bid Item No. 17 – "GIS Documentation" shall be paid for at the Contract lump sum price. This shall include all cost in connection with completing all GIS documentation required by the City of Chandler and as specified within section 01050 – Field Engineering and Surveying.

18. Bid Item No. 18 – "Water Usage" The OWNER initiated allowance for water usage shall be paid at the discretion of the OWNER. The CONTRACTOR shall be responsible for obtaining a City water meter and monitor the flow used during construction activities to track and report water usage and the associated activity to the OWNER. "Water Usage" under this item shall include all cost incidental to provide dust control to prevent any dust from the project site to adjacent areas, and all construction water including use during pressure tests, earthwork, compaction efforts, and concrete mixing. Payment under this item will be based on the actual cost of the Work performed and/or the items provided.

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19. Bid Item No. 19 – "Slurry Seal Allowance" The OWNER initiated allowance to slurry seal the finished pavement at the discretion of the OWNER. This allowance is not to be used by the CONTRACTOR to complete any work already identified in the Contract Documents. Payment under this item will be based on the actual cost of the Work performed and/or the items provided.

20. Bid Item No. 20 – "Off-Duty Police Officer Allowance" shall be paid for at the Contract price per hour. The purpose of this allowance is to provide a funding source for the direct costs associated with utilizing off duty police officers for traffic control purposes as required by the City. The CONTRACTOR is to utilize City of Chandler officers for off-duty flagging services. Should City of Chandler officers not be available for the time(s) requested by the CONTRACTOR, the CONTRACTOR may utilize officers from other jurisdictions with prior approval by the OWNER. In all cases, the CONTRACTOR shall be responsible for obtaining, coordinating, and paying all costs for local enforcement officers and their vehicles. Contract reimbursement from this allowance (in whole or in part) is not ensured. The CONTRACTOR will not anticipate, nor plan, for the allowance dollar amount to be included in the total Contract amount as part of this project. No additional compensation will be provided in the incident that additional off-duty officer services is required due to duplication of work in the original scope, caused by contractor error. A uniformed off-duty law enforcement officer will not be scheduled to work more than 12 consecutive hours unless an emergency exists which, in the opinion of the City Representative, requires that the officer remains in the capacity of flagger. Flagging services will be measured for each hour a uniformed off-duty enforcement officer and authorized vehicle is employed directly by the CONTRACTOR as a flagger and authorized in advance by the City Representative. Flagging services will be rounded to the nearest hour. Uniformed off-duty law enforcement officer flagging services used outside the project limits will not be reimbursed under this item. The project limits are defined as the construction work zone as shown on the approved traffic control plan for the specific area under construction. The accepted quantities of Uniformed Off-Duty Law Enforcement Officer, measured as provided above, will be paid for at the Agreement unit price per hour, which price will be full compensation for the work, complete in place, including vehicle and workman's compensation. Reimbursement for Uniformed Off-Duty Law Enforcement Officer will be paid at actual police department invoiced amount only (law enforcement officer hourly rate + hourly workers compensation fee + hourly law enforcement vehicle fee). No additional markup (overhead or profit) is allowed or paid for.

21. Bid Item No. 21 – "Owner's Allowance" The OWNER initiated allowance for additional Work as directed by the ENGINEER/OWNER. This allowance is not be used by the CONTRACTOR to complete any work already

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identified in the Contract Documents. This allowance is designated only for OWNER-requested items not included in the original scope of work. Payment under this item will be based on the actual cost of the Work performed and/or the items provided.

++ END OF SECTION ++

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SECTION 01050

FIELD ENGINEERING/SURVEYING

PART 1 - GENERAL

1.1 SUMMARY

A. The CONTRACTOR shall hire a surveyor licensed in the State of Arizona to perform all surveying responsibilities. It is also the CONTRACTOR'S responsibility to notify the ENGINEER, in writing, of any discrepancy found between the topographic survey provided and the baseline conditions provided in the Contract Documents within 14 days of the Notice to Proceed. The CONTRACTOR further takes the responsibility to correct any discrepancies not reported to the ENGINEER within the specified construction schedule as part of the finished grading required as part of this Project at no cost to the OWNER.

B. The CONTRACTOR shall provide competent, qualified personnel and materials required to perform all construction layout staking and re-staking (as necessary) of the Work and will protect and preserve the established reference points and will make no change or relocations without the prior written approval of the OWNER.

C. The CONTRACTOR will report to the OWNER whenever any reference point is lost or destroyed or requires relocation because of necessary changes in grades or locations. The CONTRACTOR will replace and accurately relocate all reference points so lost, destroyed, or moved at no additional cost to the OWNER.

D. Field surveying shall include GIS location and data of all new construction as required by the City of Chandler. The CONTRACTOR shall provide the GIS location and data at each application of payment to verify content. If data is missing or does not meet City of Chandler requirements, portions of the new construction shall be exposed to obtain the data at no additional cost to the OWNER. The City of Chandler requirements are identified below:
   1. Contractor shall provide survey grade GPS / GIS data, meeting the following requirements for all facilities to be owned and/or operated by the City of Chandler.
      a. ESRI File Geodatabase format:
         1) All GPS point data, along with corresponding GIS Attribute data, must be submitted in ESRI File Geodatabase format.
         2) The City of Chandler will provide a copy of the File Geodatabase in ESRI ArcGIS format, upon submitting a data request form attached herewith. Please submit the data request form to Kristy.Noelson@Chandleraz.gov

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b. Data dictionary and Attribute data:
   1) Attribute data should be provided for each of the GPS'd Utility Feature listed in section 'd' below. All Attribute data should conform to the ESRI File Geodatabase format, provided by the City. A copy of the data dictionary will be made available to the CONTRACTOR.

c. Coordinate System:
   1) Horizontal Datum: Arizona State Plane Coordinates, Central Zone NAD83 (HARN) Vertical Datum: NAVD88.

d. Point Data for GPS:
   1) Reclaimed Water system Features:
      a) Reclaimed water main location (top of pipe), size, and material (one (1) coordinate provided every 100 feet minimum) and at fittings.
      b) Reclaimed water fitting location (top of feature), size, material and type including: Bend (22.5, 45, or 90), Tee, Tapping Sleeve, Cross, Coupling, End Cap, Linestop, Reducer, Saddle, Other.
      c) Reclaimed water valve location (center of valve box cover), size and type.
      d) Reclaimed water service line location (at connection to main, any bends, and termination at meter box or meter vault or at the edge of easement or ROW), size and material.
      e) Reclaimed water blow-off and air release valve location (center of cover), size, type and manufacturer.
      f) Reclaimed water manhole or vault location (center of cover), size and type.
   2) Standard GPS Metadata on all points collected: Date, Time, Height, Horiz_Precision, Vert_Precision, Northing, Easting, Surveyor, Datafile, and Comments

2. Refer to the included information, following this specification, from the City of Chandler. Contractor shall meet all requirements.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

++ END OF SECTION ++

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SECTION 01050.1

CONSTRUCTION SURVEYING AND LAYOUT

PART 1 - GENERAL

1.1 SUMMARY

A. The CONTRACTOR will furnish all labor, materials, and equipment necessary to perform all surveying, staking, laying out of control lines, and verifications of the accuracy of all existing control points that are delineated in the Agreement Documents. The work will be done under the direction of a Registered Land Surveyor (RLS) licensed to practice in the State of Arizona.

1.2 CONSTRUCTION REQUIRMEENTS:

A. Staking Outline: Prior to beginning any survey operations, the CONTRACTOR will furnish to the Engineer, for approval, a written outline detailing the method of staking, interval of stakes, marking of stakes, grade control for various courses of materials, referencing, structure control, and any other procedures and controls necessary for survey completion. A part of this outline will also be a schedule that will show the sequencing of the survey and layout work, throughout the course of the Agreement, listing a percentage of completion for each month.

B. Field Books: The CONTRACTOR will furnish field books to be used for recording survey data and field notes. These books will be available for inspection by the City at any time and will become the property of the City upon completion of the work.

C. Survey Control Verification: Control Points (horizontal and vertical) The existence and location of all survey monuments, bench marks, and control points will be verified prior to demolition or construction activity. CONTRACTOR shall Immediately notify the City of Chandler Project Manager when location discrepancies greater than 0.02 foot horizontal or 0.01 foot vertical are found. All datum will be based upon the City of Chandler datum.

D. Control Lines: Construction control lines with grade breaks, transition points, horizontal and vertical curves, etc., will be established and referenced prior to construction.

E. Temporary Bench Marks: Temporary bench marks will be established prior to construction, maintained and periodically verified for accuracy throughout the construction phase.

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F. Pre-Construction Location Survey: All existing features will be located prior to construction, referenced to survey monuments along control lines by stationing in accordance with the construction documents and by offset distance from the control lines. All features will be re-locatable after construction. Distances measured will be within 0.01 foot.

G. Survey monuments: The land surveyor will follow the requirements of A.R.S. § 33-103 when establishing, replacing or setting Public Land System Survey monuments at Section or Quarter Section corners and will follow the requirement in Section 9(C) of the Arizona Boundary Survey Minimum Standards when establishing new or replacement boundary monuments and witness corner monuments. Finally, land surveyors will also comply with the requirements of A.R.S. § 104 through 106 when establishing, replacing or setting any type of boundary monument. Whenever any monuments are established, including those set to replace missing or damaged monuments of a previous survey, those actions require the surveyor to create and record a survey drawing documenting the new monumentation as established.

H. Water and Sewer Line Appurtenances: Water and sewer line surface appurtenances such as manholes, valves, and cleanouts that lie within the construction area will be located and noted on the CONTRACTOR'S approved construction documents prior to any demolition or excavation.

I. Match Points and Removals: Verify the location (horizontal and vertical) of existing facilities to which the project connects. Immediately notify City Representatives when location discrepancies of connecting facilities greater than 0.10 foot horizontal or 0.02 foot vertical are found.

J. Construction Stakes: The CONTRACTOR will set construction stakes and marks establishing lines and grades for road work, curbs, gutters, sidewalks, structures, buildings, centerlines for utilities and necessary appurtenances, and other work as indicated in the Contract Documents and will be responsible for their conformance with the Project Plans and Technical Specifications.

The stakes will be established in accordance with the following guidelines which represent the minimum standard and the CONTRACTOR will provide additional stakes and controls necessary to perform the work. The CONTRACTOR will be held responsible for the preservation of all stakes and marks and will replace, at no additional cost to the City, any construction stakes or marks which have been carelessly or willfully destroyed by any party.

1. Roadway: Subgrade stakes will be set to subgrade elevation at 50 foot intervals on straight sections, 25 foot intervals through vertical curves, on horizontal curves with radius of 600 feet or less, and/or slopes of less than 0.4%, and the beginning and end of horizontal and vertical curves and grade breaks. Stakes will be set at crown lines, at grade break lines, and at edges of

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pavement which do not abut concrete curb and gutter or at the edge of pavement abutting vertical curbs or other structures whose surface grade will not be flush with the finished pavement grade. Quarter lines will be staked where the distance between the crown line stakes and the curb and gutter face exceeds 20 feet. ABC stakes will be set to ABC elevation at 33 foot intervals on straight sections, 25 foot intervals through vertical curves, on horizontal curves with radius of 600 feet or less, and/or slopes of less than 0.4%, and the beginning and end of horizontal and vertical curves, and grade breaks. Stakes will be set at crown lines, at grade breaks, and at edges of pavement which do not abut concrete curb and gutter or at the edge of pavement abutting vertical curbs or other structures whose surface grade will not be flush with the finished pavement grade. Quarter lines will be staked where the distance between the crown line stakes and the curb and gutter face exceeds 20 feet.

a. Where the existing pavement will be milled and inlayed, the CONTRACTOR will provide 10-foot grid interval surface control horizontally and vertically.
b. Pavement edges will be controlled by utilizing a wire control mechanism or screeding along a concrete gutter or other structure whose surface grade is flush with the finished pavement grade. Stakes will be set to finished elevation at 33 foot intervals on straight sections, 25 foot intervals on curves with radius of 600 feet or less, and/or slopes of less than 0.4%, and the beginning and end of horizontal and vertical curves, and grade breaks.

2. Sidewalk and Bike Paths: Stakes are not required for sidewalks five feet or less in width which are adjoining existing curb and gutter.
   a. Sidewalk stakes will be set to grade on an offset and tacked for line at 25 foot intervals at the beginning and end of horizontal and vertical curves and grade breaks.

3. Storm Sewer and Drainage: All cuts will be to the invert of the pipe, given to the nearest 0.01 of a foot.
   a. Stakes for storm sewer will be driven flush with the existing ground, set on an offset at 50 foot intervals. Stakes will be marked with the offset and indicated cut.
   b. Wyes for laterals will be marked with a line only stake.
   c. Manholes will be marked with the offset and indicated cut to top of manhole grade and inverts.
   d. Stakes for storm water inlets, two per inlet, will be set on a line normal to the roadway at the center line of the inlet five and ten feet from the face of curb. The stakes will be marked with the offset to the face of curb and the cut or fill to the top of curb and inverts.
   e. Cut sheets will be supplied to the CONTRACTOR and City of Chandler Inspector.

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4. Water/Reclaimed Water: All cuts will be to the invert of the pipe, given to the nearest 0.10 of a foot.
   a. Stakes for water will be driven flush with the existing ground, set on an offset at 50 foot intervals and specified grade breaks. Stakes will be marked with the offset and indicated cut.
   b. Fittings or other critical points such as tees will be marked with a line only stake.
   c. Fire hydrants will be located with two stakes per hydrant set parallel with the roadway five feet from the centerline of the hydrant. The stakes will be marked with the offset to the hydrant and indicated cut to the top of curb at the centerline of the hydrant.
   d. Water meters will be located with two stakes per meter set parallel with the roadway five feet from the centerline of the meter. The stakes will be marked with the offset to the meter and indicated cut to the top of curb at the centerline of the meter.
   e. Cut sheets will be supplied to the CONTRACTOR and City of Chandler Inspector.

5. Traffic Signing, Striping and Detector Loops: The CONTRACTOR will delineate the procedures and controls to be utilized in the Staking Outline.

6. Inspection and Acceptance of Work: The City reserves the right to make inspections and random checks of any portion of the staking and layout work. If, in the City's opinion, the work is not being performed in a manner that will assure proper control and accuracy of the work, the City may order any or all of the staking and layout work redone at no additional cost.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

++ END OF SECTION ++

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SECTION 01090

REFERENCE STANDARDS/ABBREVIATIONS

PART 1 - GENERAL

1.1 SUMMARY

A. This Section lists many of the construction industry organizations, professional and technical associations, societies and institutes, and government agencies issuing, promoting, or enforcing standards to which references may be made in the Contract Document, along with the abbreviations commonly used for those references. Also included are certain general requirements for the use of industry standards specified and for application of the standards in quality control.

1.2 USE OF REFERENCE STANDARDS

A. Work specified by reference to the published standard or specification of a government agency, technical association, trade association, professional society or institute, testing agency, or other organization shall conform to, or surpass the minimum standards of quality for materials and workmanship established by the designated standard or specification.

B. Where so specified, products or workmanship shall also conform to the additional prescriptive or performance requirements included within the Contract Documents to establish a higher or more stringent standard of quality than that required by the referenced standard.

C. Where the specific date or issue of the standard is not included with the reference to the standard, the edition, including all amendments published and available on the first published date of the Invitation to Bid, shall apply.

D. Where two or more standards are specified to establish quality, the product, and workmanship shall conform to or surpass the requirements of both.

E. In case of conflict between referenced standards, the more stringent shall apply.

F. Where both a standard and a brand name are specified for a product in the Contract Document, the proprietary product named shall conform to or surpass the requirements of the specified reference standard. The listing of a trade name in a Contract Document shall not be construed a warranting that such product conforms to the respective reference standard.

G. Copies of Standards:
   1. Copies of applicable referenced standards have not been bound in this Contract Document.

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2. Where copies of standards are needed by the CONTRACTOR for superintendence and quality control of the Work, obtain a copy or copies directly from the publication source and maintain in an orderly manner at the job site, available to the CONTRACTOR'S personnel, subcontractors, OWNER, and ENGINEER.
3. Submittals: Submit for approval the requests to use products conforming to printed standards or publications with a different publication date from that effective under the Contract. Clearly indicate the changes in product or workmanship quality involved in the proposed change, if any, and reasons for the request.

1.3 ABBREVIATIONS

A. Abbreviations for trade organizations and government agencies. The following is a list of construction industry organizations and government agencies to which references may be made in the Contract Document, with abbreviations used.

AA	Aluminum Association
AAMA	American Architectural Manufacturers Association
AAMA	Architectural Aluminum Manufacturers' Association
AASHTO	American Association of State Highway and Transportation Officials
ABPA	Acoustical and Board Products Association
ACI	American Concrete Institute
ADA	Americans With Disabilities Act
ADEQ	Arizona Department of Environmental Quality
ADHS	Arizona Department of Health Services
AFBMA	Anti-Friction Bearing Manufacturers' Association
AGA	American Gas Association
AGC	Associated General Contractors
AGMA	American Gear Manufacturers' Association
AHC	Architectural Hardware Consultant
AI	Asphalt Institute
AIA	American Institute of Architects
AIA	American Insurance Association
AIEE	American Institute of Electrical Engineers
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute

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AITC	American Institute of Timber Construction
ALS	American Lumber Standards
AMCA	Air Moving and Conditioning Association
AMG	Arizona Masonry Guild
ANSI	American National Standards Institute
APA	American Plywood Association
API	American Petroleum Institute
AREA	American Railway Engineering Association
ARI	Air Conditioning and Refrigeration Institute
ARMA	Asphalt Roofing Manufacturers Association
ASAE	American Society of Agricultural Engineers
ASCE	American Society of Civil Engineers
ASHRAE	American Society of Heating, Refrigerating, and Air Conditioning Engineers, Inc.
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
AWI	Architectural Woodwork Institute
AWPA	American Wood Preservers' Association
AWPB	American Wood Preservers Bureau
AWPI	American Wood Preservers' Institute
AWS	American Welding Society
AWSC	American Welding Society Code
AWI	Architectural Woodwork Institute
AWWA	American Water Works Association
BHMA	Builders Hardware Manufacturers' Association
BIA	Brick Institute of America
CBMA	Certified Ballast Manufacturers' Association
CDA	Copper Development Association
CGA	Compressed Gas Association
CISPI	Cast Iron Soil Pipe Institute
CLFMI	Chain Link Fence Manufacturer's Institute

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CMAA	Crane Manufacturers' Association of America
CRA	California Redwood Association
CRSI	Concrete Reinforcing Steel Institute
CS	Commercial Standards
CSI	Construction Specifications Institute
CTI	Cooling Tower Institute
FGMA	Flat Glass Manufacturer's Association
FIA	Factory Insurance Association
FM	Factory Mutual
FS	Federal Specification
FTI	Facing Tile Institute
GA	Gypsum Association
HI	Hydraulic Institute
HMI	Hoist Manufacturers' Institute
ICBO	International Conference of Building Officials
ICEA	Insulated Cable Engineers' Association
IEEE	Institute of Electrical and Electronics Engineers, Inc.
IES	Illuminating Engineering Society
ISA	Instrument Society of America
JIC	Joint Industry Conferences of Hydraulic Manufacturers
LIA	Lead Industries Association
MAG	Maricopa Association of Governments
MIA	Marble Institute of America
MIA	Masonry Institute of America
MLMA	Metal Lath Manufacturers Association
MS	Military Specifications

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MMA	Monorail Manufacturers' Association
NAAMM	National Association of Architectural Metal Manufacturers
NBFU	National Board of Fire Underwriters
NBHA	National Builders' Hardware Association
NBS	National Bureau of Standards
NCMA	National Concrete Masonry Association
NEC	National Electrical Code
NEMA	National Electrical Manufacturers' Association
NESC	National Electric Safety Code
NFPA	National Fire Protection Association
NFPA	National Forest Products Association
NGA	National Glass Association
NHLA	National Hardwood Lumber Association
NKCA	National Kitchen Cabinet Association
NLMA	National Lumber Manufacturers' Association
NMWIA	National Mineral Wool Insulation Association
NTMA	National Terrazzo and Mosaic Association
NWMA	National Woodwork Manufacturers' Association
OECI	Overhead Electrical Crane Institute
OSHA	Occupational Safety and Health Administration (both Federal and State)
PCA	Portland Cement Association
PCI	Pre-cast Concrete Institute
PDI	Plumbing Drainage Institute
PEI	Porcelain Enamel Institute
PS	Product Standards Section - U.S. Department of Commerce
RLM	RLM Standards Institute, Inc.
RMA	Rubber Manufacturers' Association

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SAE	Society of Automotive Engineers
SDI	Steel Deck Institute
SDI	Steel Door Institute
SIGMA	Sealed Insulating Glass Manufacturing Association
SJI	Steel Joist Institute
SMACNA	Sheet Metal and Air Conditioning Contractors National Association
SSPC	Steel Structures Painting Council
SWI	Steel Window Institute
TEMA	Tubular Exchanger Manufacturers' Association
TCA	Tile Council of America
TIMA	Thermal Insulation Manufacturers Association
TPI	Truss Plate Institute
UBC	Uniform Building Code
UFC	Uniform Fire Code
UL	Underwriters' Laboratories, Inc.
USDA	United States Department of Agriculture
USPS	United States Postal Service
VI	Vermiculite Institute
WCLA	West Coast Lumberman's Association
WCLB	West Coast Lumber Bureau
WCLIB	West Coast Lumber Inspection Bureau
WIA	Woodwork Institute of Arizona
WPOA	Western Plumbing Officials Association
WWPA	Western Wood Products Association

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PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

++ END OF SECTION ++

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SECTION 01143

COORDINATION WITH OWNER'S OPERATIONS

PART 1 - GENERAL

1.1 DESCRIPTION

A. The intent of this Section is to provide CONTRACTOR a sequence to perform the Work in such a manner that continuous, uninterrupted access to City municipal services and nearby businesses are maintained and operational throughout the construction period.

B. The sequences of Work and Schedule of Completion are specified under Section 01010, Summary of Work.

C. Except for the construction hours identified in this specification section, CONTRACTOR'S means and methods shall be implemented such that the traffic lanes shall remain in continuous satisfactory operation during the entire construction period. Work shall be so scheduled and conducted by CONTRACTOR such that it shall not impede any hindrances to the public and businesses. In performing the Work shown and specified, CONTRACTOR shall plan and schedule the Work to meet both the constraints outlined in this specification section and City of Chandler traffic control standards.

D. Work not specifically covered in Section 01010, Summary of Work, or in the following paragraphs may, in general, shall be subject to the operating requirements outlined in this specification section.

1.2 OVERTIME

A. All overtime work by CONTRACTOR necessary to conform to the requirements of this Section shall be performed by CONTRACTOR at no additional cost to the OWNER and shall be performed in accordance with the General Conditions. CONTRACTOR shall make no claims for extra compensation as a result thereof.

B. PRODUCTS (NOT USED)

PART 2 - EXECUTION

2.1 COORDINATION DESCRIPTION

A. All traffic control plans shall be in accordance with the latest City of Chandler Traffic Barricade Design Technical Manual and shall be approved by the City Traffic Inspector prior to any construction. CONTRACTOR shall submit a

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construction schedule using the Critical Path Method for prior approval by the OWNER.

B. All open trenches shall be road-plated with traffic-rated plates when work is not actively occurring.

C. Reclaimed Water Piping Connections to Existing Reclaimed Water System:

1. The CONTRACTOR shall prepare Maintenance Of Plant Operation (MOPO) plans to allow all reclaimed waterlines functioning to the maximum extent possible during construction of the new reclaimed waterline throughout the project limits. The work identified within this specification section shall consist of furnishing all materials, labor, equipment, and coordination required to meet the requirements of the approved MOPO plans.

2. The CONTRACTOR shall prepare MOPO plans that provide sufficient details on the required sequencing to ensure continuous operation of the existing reclaimed water system and the services that are fed from the existing reclaimed water system along the project limits. The services include individual service lines and larger pipeline feedpoints to City owned and operated irrigation systems and operational facilities. The CONTRACTOR is hereby advised that any reclaimed water system shutdown which exceeds the timelines listed within this specification section shall not be permitted.

3. For each reclaimed water system connection identified in the Contract Documents will affect existing operational infrastructure, the CONTRACTOR shall submit MOPO plans to the OWNER and Engineer for review and prior approval a minimum of 30 days prior to commencing the work.

4. Each MOPO plan shall at a minimum include the following:

a. Timing, method, drainage locations, and detailed work plans for each reclaimed water system connection identified in the Contract Documents.

b. Method of keeping the existing reclaimed water system functioning prior to connecting new reclaimed waterline and/or appurtenances. The method may include temporary reclaimed waterline connections, temporary valving, and temporary thrust restraint. Details shall include, but are not limited to, material type, pipe sizing, valve sizing, size of thrust blocks, and adaptor coupling size, manufacturer, and model number.

c. Detailed schedule for overall installation of the reclaimed waterline and related appurtenances, including the preparation of a construction sequencing plan. The schedule for the reclaimed waterline construction

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work shall align with the sequencing plan or a revised sequencing plan approved by the OWNER.

d. Timing and method of removal of temporary improvements necessary for providing continuous reclaimed water service such as temporary reclaimed waterline connections, temporary valving, and temporary thrust restraint.

e. Work identified in the MOPO plan may be required to occur at night or during the weekend to ensure minimal disruption to City reclaimed water system operation or nearby businesses and shall occur at no additional cost to the OWNER.

5. The CONTRACTOR shall complete the reclaimed water system shutdowns, as identified below, in sequence. Each MOPO plan shall identify the sequence to which the work will be completed. The following is a sequence and description for each MOPO plan that shall be submitted for review and approval by the OWNER and Engineer.

a. MOPO Plan No. 1: New 24-inch Gate Valve Installation – Sheet C-2

- The CONTRACTOR shall complete all necessary work including excavation, trench shoring, exposing underground pipe connection, lay-down of pipe materials, pre-work of planned pipe installation on the ground surface, and traffic control prior to shutting down the City's reclaimed water system. The maximum duration for this portion of the work is 2 calendar days.

- Once OWNER and Engineer verify all pre-shutdown work is complete, CONTRACTOR shall be permitted to shut down the operation of the reclaimed water system thereby impacting Tumbleweed Recharge Facility ASR Wells 4, 5, 8, 9, 10, as well as, Tumbleweed Recharge Facility Sand Separator System, and Tumbleweed Park Irrigation Booster Pump Station No. 3 for a maximum duration of 24 continuous hours. During shut down the CONTRACTOR shall install 24-inch gate valve, pipe section, and couplings. All work shall be witnessed by the OWNER and Engineer.

- The CONTRACTOR shall complete all necessary work including bedding, backfill, valve box/cover installation, ground surface restoration, and all incidental work. The maximum duration for this portion of the work is 3 calendar days.

b. MOPO Plan No. 2: New 24-inch Gate Valve Installation – Sheet C-1

- The CONTRACTOR shall complete all necessary work including excavation, trench shoring, exposing underground pipe connection,

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lay-down of pipe materials, pre-work of planned pipe installation on the ground surface, and traffic control prior to shutting down the City's reclaimed water system. The maximum duration for this portion of the work is 10 calendar days.

- Once OWNER and Engineer verify all pre-shutdown work is complete, CONTRACTOR shall be permitted to shut down the operation of the reclaimed water system thereby impacting Tumbleweed Recharge Facility ASR Wells 4, 5, 8, 9, 10, as well as, Tumbleweed Recharge Facility Sand Separator System, and Tumbleweed Park Irrigation Booster Pump Station No. 3 for a maximum duration of 24 continuous hours. During shut down the CONTRACTOR shall install 24-inch gate valve, pipe section, and couplings. All work shall be witnessed by the OWNER and Engineer.

- The CONTRACTOR shall complete all necessary work including bedding, backfill, valve box/cover installation, ground surface restoration, and all incidental work. The maximum duration for this portion of the work is the Contract calendar days.

c. MOPO Plan No. 3: New 24-inch Reclaimed Waterline Connection to Existing 12-inch Reclaimed Waterline within Germann Road Right-of-Way – Sheet C-1

- The CONTRACTOR shall complete all necessary work including pavement removal, sidewalk removal, curb/gutter removal, SRP pole bracing, excavation, trench shoring, exposing underground pipe connection, lay-down of pipe materials, pre-work of planned pipe installation on the ground surface, and traffic control prior to shutting down the City's reclaimed water system. The maximum duration for this portion of the work is 14 calendar days.

- Once OWNER and Engineer verify all pre-shutdown work is complete, CONTRACTOR shall be permitted to shut down the operation of the reclaimed water system for a maximum duration of 7 calendar days. During shut down the CONTRACTOR shall install pipe section, pipe fittings, thrust blocks, 12-inch gate valves, pipe appurtenances, and couplings. All work shall be witnessed by the OWNER and Engineer.

- The CONTRACTOR shall complete all necessary work including pavement replacement, striping, sidewalk replacement, curb/gutter replacement, bedding, backfill, valve box/cover installation, ground surface restoration, landscaping restoration, and all incidental work. The maximum duration for this portion of the work is 7 calendar days.

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6. Prior to any tie-in, CONTRACTOR shall coordinate with OWNER and Engineer to schedule valve closure for isolation purposes.

7. Prior to any tie-in, CONTRACTOR shall coordinate with OWNER or ENGINEER to determine mode and location where water in existing piping will be drained. Tie-ins in Germann Rd. will require coordinated efforts with the OWNER and Engineer to isolate tie-in locations and facilitate drainage/injection of water into the existing ASR wells in Tumbleweed Park. This coordination shall be included as part of the approved MOPO plan.

a. CONTRACTOR shall be required to account for time and effort as coordinated with OWNER to lock out and tag out equipment in Tumbleweed Park Recharge Facility for coordinated drainage efforts.

8. MOPO plans shall be measured as a single complete unit of work and paid at the Agreement lump sum price, which price will be full compensation for the work, complete in place, including all required labor, material, and coordination required to prepare detailed MOPO plans and the associated work to meet the requirements of the approved MOPO plans. CONTRACTOR is responsible for and no separate measurement will be made for temporary thrust blocks, temporary valves, temporary pipe installation, development of MOPO plans, implementation of the MOPO plans, coordination, labor, and materials as required to maintain constant services to all existing reclaimed water users impacted during construction.

++ END OF SECTION ++

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SECTION 01300

SUBMITTALS

PART 1 - GENERAL

1.1 SUMMARY

A. The CONTRACTOR shall include a completed transmittal form for all submittals. Transmittal forms will be furnished to CONTRACTOR by ENGINEER. Submittals shall be sent to the ENGINEER.

1.2 SECTION INCLUDES

A. Shop Drawings.

B. Material and Equipment Record.

C. Samples.

D. Daily reports.

E. Testing results.

F. Construction photographs.

G. Record Drawings.

1.3 DATA REFERENCE SYMBOLS AND DESCRIPTIONS

A. The submittal data required for Shop Drawings and operations manuals shall contain, but not necessarily be limited to, that data and material as defined by the coded legend set forth below. The submittal data required shall be as indicated and specified under various headings of the specifications.

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LEGEND

DATA REFERENCE SYMBOLS AND DESCRIPTIONS

Symbol	Description
A	Letters of Certification of Compliance on materials, equipment, etc.
B	Samples.
C	Final certified drawings showing outline dimensions, foundation layout or mounting information, and other pertinent dimensions.
D	Field erection instructions, assembly drawings and/or diagrams, detailed reference drawing lists, and lists of erection details.
E	Shop detail drawings showing individual sub-assemblies and fabricated pieces with material specifications and other applicable data.
F	Installation instructions, operating and/or service manuals, and all other data pertinent to operating or servicing the complete apparatus. Preventative maintenance instructions and recommended frequency.
G	General bulletins and catalog cuts describing complete apparatus including operating principles and fundamentals.
H	Service data sheets showing design performance, utility requirements, etc., as applicable to the specific duty for which the equipment is furnished.
K	Curves and/or data for overall range of operation from minimum to maximum capacity or load, showing capacity or load, utilities motive

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medium required, total or incremental differential head, and other pertinent information applicable to the equipment or its component assemblies.

L Materials of construction of all components.

M Renewal parts list with diagrammatic or cross-section drawings showing part identification. Material analysis or trades designation for each significant part is to be noted on parts lists or on a separate sheet.

N Stuffing box sizes; packing sizes; specifications and arrangement; and mechanical seal details, specifications, etc., if furnished in equipment.

O Bearing manufacturer's standard identification and/or interchangeable number for all anti-friction bearings in the equipment proper and its accessory items.

P Material gradation, design mix, job mix formula, and/or material analysis.

1.4 SHOP DRAWINGS

A. The CONTRACTOR shall submit Shop Drawings for the equipment and materials specified herein. CONTRACTOR shall submit the shop drawings online via "Newforma". The shop drawings shall be addressed to (Brandy.Nixon@wilson-engineers.com). Text shall be in electronic ASCII format. Drawings and figures shall be in AutoCAD ".dwg", or bitmap ".bmp," tiff ".tiff," jpeg ".jpg," gif ".gif," or pdf ".pdf" format.

B. ENGINEER shall return electronic Shop Drawings to CONTRACTOR within 14 calendar days of receipt by ENGINEER.

C. The CONTRACTOR may request submittals be reviewed up to two times for each equipment or construction material item, regardless of manufacturer or supplier, by the ENGINEER.

D. A copy of this specification section, with addendum updates included, and all referenced and applicable sections, with addendum updates included, with each

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paragraph check-marked to indicate specification compliance or marked to indicate requested deviations from specification requirements. Check marks (✓) shall denote full compliance with a paragraph as a whole. If deviations from the specifications are indicated, and therefore requested by the CONTRACTOR, each deviation shall be underlined and denoted by a number in the margin to the right of the identified paragraph, referenced to a detailed written explanation of the reasons for requesting the deviation. The ENGINEER shall be the final authority for determining acceptability of requested deviations. The CONTRACTOR shall furnish equipment and/or services as specified if an exception and/or deviation is rejected. The remaining portions of the paragraph not underlined will signify compliance on the part of the CONTRACTOR with the specifications. Failure to include a copy of the marked-up specification sections, along with justification(s) for any requested deviations to the specification requirements, with the submittal shall be sufficient cause for rejection of the entire submittal with no further consideration.

E. The CONTRACTOR shall submit the preventive maintenance information package as part of the shop drawing submittal package to the ENGINEER for review and approval.

F. The CONTRACTOR will be held responsible for any delay in progress of the Work due to resubmittal of Shop Drawings. Time for completion of the Contract will not be extended due to CONTRACTOR's failure to promptly submit complete and acceptable Shop Drawings, product data and samples.

G. Do not execute Work required by Shop Drawings until accepted Shop Drawings are received from ENGINEER.

H. Before submitting Shop Drawings for review, CONTRACTOR shall check Shop Drawings for accuracy, ascertain that all Work contiguous with and having bearing on other Work shown on Shop Drawings is accurately drawn, and that Work shown is in conformity with Contract requirements. The CONTRACTOR is responsible for all submittals from subcontractors and suppliers.

I. All such Drawings and details, when submitted, must bear the stamp of approval of CONTRACTOR, bearing checked data, as evidence that such Drawings and details have been checked by the CONTRACTOR. Said "stamp" shall clearly state that the CONTRACTOR has checked the Drawings by providing signature certification. Any Drawings submitted without such executed stamp of approval, or whenever it is evident (despite the stamp) that the Drawings have not been checked, they will be returned to the CONTRACTOR for resubmission and will not be considered. In such event, it will be deemed that CONTRACTOR has not complied with this provision and the CONTRACTOR shall bear risk of all delays to the same extent as if no Drawings or details had been submitted.

J. The CONTRACTOR shall prepare composite Drawings and installation layouts, when required to solve tight field conditions. Such Drawings shall consist of dimensioned plans and elevations, and must give complete information particularly

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as to size and location of sleeves, inserts, attachments, openings, conduits, ducts, boxes, structural interferences, etc. These composite drawings and installation layouts shall be coordinated in the field by the CONTRACTOR and his subcontractors for proper relationship to the Work of other trades, based on field conditions, and shall be checked and approved by them before submission to the ENGINEER for his final review. The CONTRACTOR shall have competent technical personnel readily available for such coordinating and checking, as well as for supervision of field installation of Work as per the Drawings and installation layouts, which have been previously determined by him to be correct and carry the ENGINEER'S review stamp.

K. Submission of Shop Drawings (in either original submission or when resubmitted with corrections) constitute evidence that the CONTRACTOR has checked all information thereon, and that he accepts and is willing to perform the Work as shown in a workmanlike manner and in accordance with best standard practice.

L. Cost of any changes in construction due to improper checking and coordination by the CONTRACTOR shall be paid for by the CONTRACTOR, and the CONTRACTOR shall be responsible for all additional costs, including coordination.

M. Shop Drawings shall clearly delineate the following information:
   1. ENGINEER'S name and Project number, Project name and address.
   2. Drawing title, number, date, and scale.
   3. Names of CONTRACTOR, subcontractor, and fabricator.
   4. Letters of Certification of Compliance
   5. Working and erection dimensions.
   6. Arrangements and sectional views.
   7. Necessary details, including complete information for making connections with other Work.
   8. Kinds of materials and finishes.
   9. Show descriptive names of materials and equipment, classified item numbers, and locations at which materials or equipment are to be installed in the Work. Use same reference identification as shown on Contract Drawings.

N. The ENGINEER shall provide the CONTRACTOR with a form to accompany the Shop Drawings.

O. If Shop Drawings show variations from Contract Documents because of standard shop practice or other reasons, make specific mention of such variations in the transmittal form.

P. Shop Drawings review will be general. It shall not relieve the CONTRACTOR of responsibility for accuracy of such Shop Drawings, nor proper fitting, construction of Work, furnishing of materials, or Work required by Contract Documents and not indicated on Shop Drawings. Shop Drawings review shall not be construed as approving departures from Contract Documents.

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Q. Review of Shop Drawings and schedules shall not relieve the CONTRACTOR from responsibility for any violation indicated on such Drawings or schedules of local, County, State, or Federal laws, rules, ordinances, or rules and regulations of commissions, boards or other authorities or utilities having jurisdiction.

R. When product data, consisting of manufacturer's printed literature, is required to be submitted to ENGINEER, it shall be submitted in original form. Any fading type of reproduction will not be accepted.

1.5 CONSTRUCTION PHOTOGRAPHS

A. Per Section 01380, Construction Photographs.

1.6 TESTING RESULTS

A. CONTRACTOR shall furnish to ENGINEER copies of all testing results for all tests required in the Specifications.

1.7 RECORD DRAWINGS

A. Per Section 01700, Contract Closeout. CONTRACTOR shall update Record Drawings whenever a change occurs and shall be made available for review by ENGINEER with the pay application. Failure of CONTRACTOR to maintain updated Record Drawings shall be justification for refusal of Pay Application.

1.8 ALL ADDITIONAL SUBMITTALS

A. As required by the Contract Documents.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

++ END OF SECTION ++

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SECTION 01380

CONSTRUCTION PHOTOGRAPHS

PART 1 - GENERAL

1.1 SUMMARY

A. Pre-construction Video:
   1. The CONTRACTOR shall furnish a pre-construction video in accordance with the Contract Documents.

B. Ground Level Construction Photographs:
   1. The CONTRACTOR shall furnish progress photographs of the Project as specified herein.
   2. The CONTRACTOR shall provide high quality digital photographs on CDs or flash drives. The electronic file format shall be .jpg, .gif, or tiff. If the current photographs (both standard and digital) do not accompany the application, it shall not be reviewed and shall be returned to the CONTRACTOR as incomplete. At least 50 photographs (minimum of 40 digital photos specified herein) shall be taken per each Application of Payment.
   3. Provide interior and exterior photographs of each buried structure prior to burial. Provide a minimum of four internal views and four external views of each structure. One view shall be provided of each wall, detail, floor, and top of structure.
   4. In addition to the previous specified progress photographs, CONTRACTOR shall provide photographs of new and existing valves, elbows, tees, piping crossing electrical ducts with landmarks that allow location of these underground utilities. Every utility that is exposed during construction shall be photographed and documented.

C. Aerial Construction Photographs:
   1. Aerial construction photographs shall not be required for this Project.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 PROCEDURES

A. The ground level construction photographs shall be of aesthetic composition and shall depict the progress of the Work from the beginning of construction through and including the finished product and shall include, but not be limited to, the items listed in Section 01010, Summary of Work.

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B. Ground level construction photographs shall be submitted monthly with the Application for Payment. The Application for Payment shall not be reviewed and shall be returned to the CONTRACTOR as incomplete if the currently due photographs have not been submitted.

++ END OF SECTION ++

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SECTION 01700

CONTRACT CLOSEOUT

PART 1 - GENERAL

1.1 SUMMARY

A. Tasks listed under this Section shall be completed prior to Contract closeout and approval of the CONTRACTOR'S final pay request.

1.2 RELATED SECTIONS

A. Section 01300, Submittals.

1.3 CONTRACT CLOSEOUT SUBMITTALS

A. The following documents are to be submitted as specified to the ENGINEER prior to approval of the CONTRACTOR'S final pay request:
   1. Record Drawings shall be furnished by the CONTRACTOR. One set of bluelines annotated to show all changes shall be delivered by the CONTRACTOR to the ENGINEER. The Record Drawings shall reflect all changes made by Change Order, addenda, field order, Work directive, and any other changes made and approved during the course of the Work.
   2. Certification of Final Completion.
   3. Evidence of Payment and Release of Labor and Material Liens as outlined in the Conditions of the Contract. Affidavit of Settlement of Claims shall be furnished by the CONTRACTOR and all subcontractors.
   4. Release of claims as outlined in the conditions of the Contract.
   5. Evidence of Compliance with Requirements of Governing Authorities, including Certificate of Occupancy and Certificates of Inspection.

1.4 SITE CONDITIONS

A. Prior to approval of the CONTRACTOR'S final pay request, and after Work has been completed, the CONTRACTOR shall dispose of all waste material and conduct final cleaning of completed work.

B. All areas shall be restored to a condition equal to or better than the original.

C. Site grading shall be performed to the lines and grades as shown or conforming to adjacent contours.

1.5 MAINTENANCE AND GUARANTEE

A. The CONTRACTOR shall comply with the maintenance and guarantee requirements contained in the General Conditions.

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B. Replacement of earth fill or backfill, where it has settled below the required finish elevations, shall be considered as a part of such required repair Work, and any repair or resurfacing constructed by the CONTRACTOR which becomes necessary by reason of such settlement shall likewise be considered as a part of such required repair Work, unless the CONTRACTOR shall have obtained a statement in writing from the affected private owner or public agency releasing the CONTRACTOR from further responsibility in connection with such repair or resurfacing.

C. The CONTRACTOR shall make all repairs and replacements promptly upon receipt of written order from the OWNER. If the CONTRACTOR fails to make such repairs or replacements promptly, the OWNER reserves the right to do the Work and the CONTRACTOR and his surety shall be liable to the OWNER for the cost thereof.

1.6 BOND

A. The CONTRACTOR shall provide a bond to guarantee performance of the provisions contained in Paragraph 1.5, above, and the General Conditions.

1.7 RE-INSPECTION FEES

A. Should CONTRACTOR fail to complete and correct punch list items such that additional inspections are required by ENGINEER, CONTRACTOR shall pay ENGINEER'S standard rates per person per hour for ENGINEER'S additional services. If CONTRACTOR has any questions with regard to any items on punch list, he shall request clarification before final inspection.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

++ END OF SECTION ++

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SECTION 02100

SITE PREPARATION

PART 1 - GENERAL

1.1 SUMMARY

A. Prepare the construction site for new construction.

1.2 SECTION INCLUDES

A. Protection of certain existing trees and vegetation.

B. Clearing and grubbing.

C. Removing below grade improvements (including stumps).

D. Installing and maintaining barricades and warning signs.

E. All other miscellaneous items of Work required to complete the site preparation.

1.3 RELATED SECTIONS

A. Section 02200, Earthwork.

1.4 PROJECT CONDITIONS

A. Traffic: Conduct site-clearing operations to ensure minimum interference with roads, streets, walks, and other adjacent occupied or used facilities. Do not close or obstruct streets, walks, or other occupied or used facilities without permission from authorities having jurisdiction.

B. Protection of Existing Improvements: Provide protection as necessary to prevent damage to existing improvements indicated to remain in place.
   1. Protect improvements on adjoining properties and OWNER'S property.
   2. Restore damaged improvements to their original or better condition, as acceptable to OWNER.

C. Protection of Existing Trees and Vegetation:
   1. Existing vegetation in the field not scheduled for removal shall be undisturbed by the CONTRACTOR. The CONTRACTOR shall NOT remove from the site any plants unless specifically approved by the ENGINEER.
   2. Protect existing trees and vegetation indicated to remain against unnecessary cutting, breaking or skinning of roots, skinning or bruising of bark, smothering of trees by stockpiling construction materials or excavated materials within drip line, excess foot or vehicular traffic or parking of

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vehicles within the drip line. Prior to initiating site clearing activities, the CONTRACTOR shall mark the limits of the disturbance areas either by placing lime, flags, or survey stakes at the limits shown on the Plans.

3. Do not destroy vegetation which may be naturally located in the periphery of proposed disturbed areas (within a zone ± 5 feet from the limits of construction). The ENGINEER shall be notified if existing plants are located within the fringes of the construction limits. The ENGINEER shall issue instructions at that time.
4. Adjustments may be made in the limits of construction to protect the affected plants based on a field review of the staked limits. The adjusted construction limits shall be considered the permanent construction limits for the duration of the Project. If the ENGINEER recommends that construction limits be adjusted to preserve existing plants, the CONTRACTOR, at his own option, may elect to clear the subject vegetation and revegetate with like-kind size and species as required herein and by Landscape Drawings at no additional cost to the OWNER. The CONTRACTOR shall be entirely responsible for removal, storage, and replanting of such vegetation in accordance with City's Landscape Design of Right-of-Way, medians, and retention basin Technical Design Manual no. 8.
5. During the course of the Work the CONTRACTOR shall:
    a. Water trees, shrubs, and other vegetation to remain within limits of Contract Work as required to maintain their health during the course of construction operations at no additional cost to the OWNER.
    b. Provide protection for roots over 1-1/2-inches in diameter that are cut during construction operations. Temporarily cover exposed roots with wet burlap to prevent the roots from drying out; cover with earth as soon as possible.
    c. Repair or replace trees and vegetation indicated to remain that are damaged by construction operations in a manner acceptable to the ENGINEER.
    d. Trees to be protected in place shall not be pruned unless limbs are damaged, or at the direction of the ENGINEER. Employ a licensed arborist to repair damaged trees and shrubs. Replace trees that cannot be repaired and restored to full growth status, as determined by the arborist.
    e. Trees may be pruned for routing maintenance during construction with ENGINEER'S approval at no additional cost to the OWNER.

D. Provide a temporary construction fence/barrier to protect trees and vegetation at the limits reviewed and approved by the ENGINEER. The barrier shall be installed and remain in place for the duration of the Project or as directed by the ENGINEER.

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PART 2 - PRODUCTS

2.1 MATERIALS

A. Fencing: Any fencing removed as obstructions shall be restored to match existing with property OWNER's approval/acceptance.

B. Barricades, warning signs, and related equipment shall be placed as required.

C. Tree Protection Fence/Barrier: Shall be a commercially available product acceptable to the ENGINEER for its intended purpose. The barrier shall be similar to a nylon woven material or woven wire fence such as TENAX Nordic Snow Fence, or approved equal, with approved stakes approximately 36-inches in height. Submit material sample and Shop Drawings for barrier installation to the ENGINEER for approval prior to use.

PART 3 - EXECUTION

3.1 PREPARATION

A. Site Clearing
   1. General: Remove trees, shrubs, grass and other vegetation, improvements or obstructions, as required, to permit installation of new construction. Remove similar items elsewhere on site or premises as specifically indicated. Removal includes digging out and off-site disposal of stumps and roots.
      a. Cut minor roots and branches of trees indicated to remain in a clean and careful manner where such roots and branches obstruct installation of new construction.
   2. Clearing and Grubbing: Within the limits of Work, clear site of trees, shrubs and other material, except for those indicated to be left standing.
      a. Completely remove stumps, roots, and other debris protruding through the ground surface. Stump removal and backfilling of holes is required for trees indicated on the Plans to be removed.
      b. Use only hand methods for grubbing inside drip line of trees indicated to remain.
      c. Fill depressions caused by clearing and grubbing operations with satisfactory soil material, unless further excavation or earthwork is indicated.
      d. Place fill material in horizontal layers not exceeding 6-inches loose depth, and thoroughly compact each layer to a density equal to adjacent original ground.
   3. Disposal of Waste Material:
      a. Burning on OWNER'S Property: Burning is not permitted on OWNER'S property.
      b. Removal from OWNER'S Property: Remove waste materials from OWNER'S property at no additional cost to the Project.

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4. All miscellaneous items not specifically mentioned or designated on the Drawings as removal items, but required for the completion of the Work, shall be removed. All such items removed shall be hauled from the site.

B. Barricades and Warning Signs:
   1. Construction sites shall be properly barricaded with appropriate warning signs affixed to prevent unauthorized access to the construction site.

++ END OF SECTION ++

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SECTION 02200

EARTHWORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. This Section covers excavating, trenching, backfilling, and grading as indicated on the Project Drawings, together with all incidental Work in connection therewith, including subgrade preparation and restoration, legally disposing of surplus and waste materials, and final site grading. Areas disturbed by construction shall be graded and excavated or filled in such a manner that completed items will conform to lines, grades, and elevations of surrounding area. Drawings and General Provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following:
   1. Subbase course for walks and pavements.
   2. Excavating and backfilling trenches within building lines.
   3. Excavating and backfilling for underground mechanical and electrical utilities and appurtenances.
   4. Placing on-site fill material.

B. Related Section: The following Section contains requirements that relate to this Section.
   1. Section 02100, Site Preparation.

1.3 DEFINITIONS

A. Excavation consists of the removal of material encountered to subgrade elevations and the reuse or disposal of materials removed.

B. Subgrade: The uppermost surface of an excavation or the top surface of a fill or backfill immediately below subbase, drainage fill, or topsoil materials.

C. Borrow: Soil material obtained off site when sufficient approved soil material is not available from excavations.

D. Subbase Course: The layer placed between the subgrade and base course in a paving system or the layer placed between the subgrade and surface of a pavement or walk.

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E. Base Course: The layer placed between the subbase and surface pavement in a paving system.

F. Capillary Water Barrier: Course of clean sand or washed granular material placed above a water barrier sheet supporting interior concrete slab-on-grade placed to cut off upward capillary flow of pore water.

G. Unauthorized excavation consists of removing materials beyond indicated subgrade elevations or dimensions without direction by the ENGINEER. Unauthorized excavation, as well as remedial Work directed by the ENGINEER, shall be at the CONTRACTOR'S expense.

H. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other man-made stationary features constructed above or below ground surface.

I. Utilities include on-site underground pipes, conduits, ducts, and cables, as well as underground services within building lines.

1.4 SUBMITTALS

A. General: Submit the following according to the Conditions of the Contract and Division 1 Specification Sections.

B. Samples of the following:
   1. 60 lb. representative samples of each proposed fill and backfill soil material from on-site or borrow sources.

C. Test Reports: In addition to test reports required under field quality control, submit the following:
   1. Laboratory analysis of each soil material proposed for fill and backfill from on-site and borrow sources.
   2. One optimum moisture-maximum density curve for each soil material.

D. A copy of this specification section, with addendum updates included, and all referenced and applicable sections, with addendum updates included, with each paragraph check-marked to indicate specification compliance or marked to indicate requested deviations from specification requirements. Check marks (✓) shall denote full compliance with a paragraph as a whole. If deviations from the specifications are indicated, and therefore requested by the CONTRACTOR, each deviation shall be underlined and denoted by a number in the margin to the right of the identified paragraph, referenced to a detailed written explanation of the reasons for requesting the deviation. The ENGINEER shall be the final authority for determining acceptability of requested deviations. The CONTRACTOR shall furnish equipment and/or services as specified if an exception and/or deviation is rejected. The remaining portions of the paragraph not underlined will signify compliance on the part of the CONTRACTOR with the specifications. Failure to include a copy of the marked-up specification sections, along with justification(s)

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for any requested deviations to the specification requirements, with the submittal shall be sufficient cause for rejection of the entire submittal with no further consideration.

E. The CONTRACTOR shall submit the preventive maintenance information package as part of the shop drawing submittal package to the ENGINEER for review and approval.

1.5 QUALITY ASSURANCE

A. Codes and Standards: Perform earthwork complying with requirements of authorities having jurisdiction.

B. Pre-installation Conference: Before commencing earthwork, meet with representatives of the governing authorities, OWNER, ENGINEER, consultants, Geotechnical Engineer, independent testing agency, and other concerned entities. Review earthwork procedures and responsibilities including testing and inspection procedures and requirements. Notify participants at least three working days prior to convening conference. Record discussions and agreements and furnish a copy to each participant.

C. Soils Testing Service: CONTRACTOR shall employ, at his own expense, an independent testing agency, certified in the State of Arizona, to perform all testing services as specified herein. Selection of a testing agency is subject to ENGINEER'S approval. Submit a written description of proposed soils testing agency giving qualifications of personnel, equipment, and other information which may be requested by ENGINEER.

1.6 PROJECT CONDITIONS

A. Existing Utilities: Do not interrupt existing utilities serving facilities occupied by the OWNER or others except when permitted in writing by the ENGINEER and then only after acceptable temporary utility services have been provided.
   1. Provide a minimum 48 hours' notice to the ENGINEER and receive written notice to proceed before interrupting any utility.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

A. General: Provide approved borrow soil materials from offsite when sufficient approved soil materials are not available from excavations.

B. Site Soils: The granular site soils may be used as fill in all areas of the site. The clayey site soils shall not be used as subsurface wall or retaining wall backfill. The clayey sand site soils may be used in all other areas provided these soils are

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placed and compacted at moisture contents at or above optimum in exterior slab and facility areas. All materials shall be free of organics, debris, and rubble.

C. Imported Soils: Additional fill required shall be imported soils meeting the following requirements:
   1. Maximum Particle Size: 3-inches.
   2. Maximum Swell Potential: 1.5% based on a sample which is remolded to 95% of the ASTM D698 maximum dry density at a moisture content of 2% below optimum placed under a surcharge of 100 psf and wetted.
   3. Maximum Percent Passing No. 200 Sieve: 40.
   4. Corrosion Potential: Sulfate Content (ARIZ 733) = 1,000 ppm (max), Chloride Content (ARIZ 733) = 500 ppm (max).

D. Backfill and Fill Materials: As shown in the Drawings and site soil as described above.

E. Subbase and Base Material: Maricopa Association of Governments (MAG) Specification Section 702 for Select (Subbase) Type A or B and aggregate base (Base).

F. Engineered Fill: Site soils as describe above subbase or base materials or aggregate base course (ABC) according to MAG Standard Specification Section 702.

G. Bedding Material: Subbase or base materials with 100% passing a 1-inch sieve and not more than 8% passing a No. 200 sieve.
   1. If on-site material can be used as bedding material, the CONTRACTOR shall take necessary steps to separate the suitable bedding material from the sandy clay and sandy silt found on site. The bedding material must meet all requirements of this Specifications Document and MAG Standard Specification Section 601.
   2. If on-site material does not meet the bedding material requirements, the CONTRACTOR shall supply the specified bedding material at no additional cost to the OWNER.

H. Capillary Water Barrier:
   1. Washed, evenly graded mixture of crushed stone, or crushed or uncrushed gravel, ASTM D448, coarse aggregate Grading Size 57, with 100% passing a 1-1/2-inch sieve and not more than 5% passing a No. 8 sieve.
   2. Clean, washed natural or manufactured, non-plastic sand.
   3. Either of the above soil materials.

I. Filtering Material: Evenly graded mixture of natural or crushed gravel or crushed stone and natural sand, with 100% passing a 1-1/2-inch sieve and 0% to 5% passing a No. 50 sieve.

J. Impervious Fill: Clayey gravel and sand mixture capable of compacting to a dense state.

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2.2 ACCESSORIES

A. Warning Tape: Acid- and alkali-resistant polyethylene film warning tape manufactured for marking and identifying underground utilities, 6-inches wide and 4 mils thick, continuously inscribed with a description of the utility.
   1. Tape Colors: Provide tape colors to utilities as follows:
      a. Red: Electric.
      b. Yellow: Gas, oil, steam, and dangerous materials.
      c. Orange: Telephone and other communications.
      d. Blue: Water systems.
      e. Green: Sewer systems.
      f. Purple: Reclaimed Water

PART 3 - EXECUTION

3.1 PREPARATION

A. Protect subgrades and foundation soils against freezing temperatures or frost. Provide protective insulating materials as necessary.

B. Provide erosion control measures following the most current City of Chandler Standards to prevent erosion or displacement of soils and discharge of soil-bearing water runoff per the National Discharge Elimination System (NPDES) or airborne dust to adjacent properties and walkways.

C. Tree protection as specified on the Drawings.

3.2 DEWATERING

A. Prevent surface water and subsurface or groundwater from entering excavations, from ponding on prepared subgrades, and from flooding Project site and surrounding area.

B. Protect subgrades and foundation soils from softening and damage by rain or water accumulation.

3.3 EXCAVATION

A. Explosives: Do not use explosives.

B. Unclassified Excavation: Excavation is unclassified and includes excavation to required subgrade elevations regardless of the character of materials and obstructions encountered.

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C. Classified Excavation: Excavation is classified and includes excavation to required subgrade elevations. Excavation will be classified as earth excavation or rock excavation as follows:
   1. Earth excavation includes excavation of obstructions visible on surface; underground structures, utilities, and other items not indicated that we are required to be demolished and removed; together with soil and other materials encountered that are not classified as rock or unauthorized excavation.
      a. Intermittent drilling, blasting, or ripping to increase production and not necessary to permit excavation of material encountered will be classified as earth excavation.

3.4 EXCAVATION FOR WALKS AND PAVEMENTS

A. Excavate surfaces under walks and pavements to indicated cross sections, elevations, and grades.

B. Pavement excavation, backfilling and compaction shall be as specified in MAG Section 200.

3.5 EXCAVATION FOR UTILITY TRENCHES

A. Excavate trenches to indicated slopes, lines, depths, and invert elevations.

B. Trench excavation, backfilling and compaction shall be as specified in MAG Section 601.

3.6 APPROVAL OF SUBGRADE

A. Notify the ENGINEER when excavations have reached required subgrade.

B. When the ENGINEER determines that unforeseen unsatisfactory soil is present, continue excavation and replace with compacted backfill or fill material as directed.
   1. Unforeseen additional excavation and replacement material will be paid according to the Contract provisions for changes in Work.

C. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by the ENGINEER.

3.7 UNAUTHORIZED EXCAVATION

A. Fill unauthorized excavation under foundations or wall footings by extending indicated bottom elevation of concrete foundation or footing to excavation bottom, without altering required top elevation. Lean concrete fill may be used to bring elevations to proper position when acceptable to the ENGINEER.
   1. Fill unauthorized excavations under other construction as directed by the ENGINEER.

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B. Where indicated widths of utility trenches are exceeded, provide stronger pipe which may require higher strength pipe than specified or different pipe material depending on the limits of unauthorized excavation. Special installation procedures maybe required by the ENGINEER.

3.8 STORAGE OF SOIL MATERIALS

A. Stockpile excavated materials acceptable for backfill and fill soil materials, including acceptable borrow materials. Stockpile soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
   1. Stockpile soil materials away from edge of excavations. Do not store within drip line of remaining trees.

3.9 BACKFILL

A. Backfill excavations promptly, but not before completing the following:
   1. Acceptance of construction below finish grade including, where applicable, damp proofing, waterproofing, and perimeter insulation.
   2. Surveying locations of underground utilities for Record Documents.
   3. Testing, inspecting, and approval of underground utilities.
   4. Concrete formwork removal.
   5. Removal of trash and debris from excavation.
   6. Removal of temporary shoring and bracing, and sheeting.
   7. Installing permanent or temporary horizontal bracing on horizontally supported walls.

B. Structural Backfill:
   1. General Structural Fill: Backfill with on-site material and compact to a uniform minimum density of 95% of the maximum density as determined by ASTM D698. Additional backfill material shall be added if required. Fill material should be free from vegetation, debris, and deleterious material, and should contain no particles larger than 6-inches in dimension. The plasticity index shall not exceed 18 as determined by ASTM D4318. Fill shall be placed in lifts no more than 8-inches and compacted to a minimum of 95% of maximum dry density as determined by ASTM D698. Moisture content during compaction shall be maintained within ±2% of the optimum moisture content, as determined by ASTM D698.
   2. CONTRACTOR may utilize ½ sack CLSM for backfill per MAG Section 728.

3.10 UTILITY TRENCH BACKFILL

A. Place and compact bedding course on rock and other unyielding bearing surfaces and to fill unauthorized excavations. Shape bedding course to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits.

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B. Concrete backfill trenches that carry below or pass under footings and that are excavated within 18-inches of footings. Place concrete to level of bottom of footings.

C. Provide 4-inch thick concrete base slab support for piping or conduit less than 2 feet 6-inches below surface of roadways. After installation and testing, completely encase piping or conduit in a minimum of 4-inch of concrete before backfilling or placing roadway sub-base.

D. Place and compact initial backfill of satisfactory soil material or sub-base material, free of particles larger than 1-inch, to a height of 12-inches over the utility pipe or conduit.
   1. Carefully compact material under pipe haunches and bring backfill evenly up on both sides and along the full length of utility piping or conduit to avoid damage or displacement of utility system.

E. Coordinate backfilling with utilities testing.

F. Fill voids with approved backfill materials as shoring and bracing, and sheeting is removed.

G. Place and compact final backfill of satisfactory soil material to final subgrade.

H. Install warning tape directly above utilities, 12-inches below finished grade, except 6-inches below subgrade under pavements and slabs.

3.11 SUBSURFACE DRAINAGE BACKFILL

A. Subsurface Drain: Place a layer of filter fabric around perimeter of drainage trench or at footing, as indicated. Place a 6-inch compacted course of filtering material on filter fabric to support drainage pipe. After installing and testing, encase drainage pipe in a minimum of 6-inches of compacted filtering material and wrap in filter fabric, overlapping edges at least 6-inches.

B. Drainage Backfill: Place and compact drainage backfill of filtering material over subsurface drain, in width indicated, to within 12-inches of final subgrade. Overlay drainage backfill with one layer of filter fabric, overlapping edges at least 6-inches.

C. Impervious Fill: Place and compact impervious fill material over drainage backfill to final subgrade.

3.12 FILL

A. The following apply to the areas within and extending 5 feet beyond the footprint of the facilities and exterior slabs.
   1. Clear and grub the site by removing and disposing of all vegetation, debris, rubble, and remnants of former developments.

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2. Strip the area of all stockpiled fill zones, loose backfill zones, and unstable soils. During stripping observe the surface for evidence of buried debris, vegetation or disturbed materials that shall require additional removal. If encountered, these materials should be removed. Areas steeper than 5H to 1V shall be benched and any depressions widened to accommodate compaction equipment.
3. Prepare the ground surface in fill areas and in areas cut to grade by scarifying, moisture conditioning and compacting the exposed surface soils to a depth of 8-inches.
4. Moisture condition and place all fill and backfill materials to achieve specified grades. Fill materials shall be moisture conditioned, placed, and compacted in horizontal lifts.

B. Place fill material in layers to required elevations for each location listed below.
1. Under grass, use satisfactory excavated or borrow soil material.
2. Under walks and pavements, use sub-base or base material, or satisfactory excavated or borrow soil material.
3. Under steps and ramps, use sub-base material.
4. Under building slabs, use drainage fill material.
5. Under footings and foundations, use engineered fill.

3.13 MOISTURE CONTROL

A. The moisture content of soil and base materials at the time of compaction shall be:

TYPE	AREA OF USE	MOISTURE CONTENT
On-site Granular	Structure, Exterior Slab	Optimum ± 3%
On-site Clayey Soils	Structure, Exterior Slab	Optimum to Optimum +3%
On-site Soils	Pavement	2% Below Optimum or Lower
Imported Soils	Structure, Exterior Slab, Pavement	Optimum ±3%
Base Material	Structure, Pavement	Optimum ±3%

3.14 COMPACTION

A. Place backfill and fill materials in layers not more than 8-inches in loose depth for material compacted by heavy compaction equipment, and not more than 4-inches in loose depth for material compacted by hand-operated tampers.

B. Place backfill and fill materials evenly on all sides of structures to required elevations. Place backfill and fill uniformly along the full length of each structure.

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C. Compact subgrade, fill, backfill, sub-base fill or base material to the following minimum percent compaction of the ASTM D698 maximum dry density in each lift:

MATERIAL	MINIMUM COMPACTION
Soil:	
Below foundations and pavement sections (fill thickness less than 5 feet).	95%
Below foundations (fill thickness greater than 5 feet).	100%
Below concrete floor slabs (above footings).	90%
Subsurface wall backfill.	95%
Base Material (Subbase and Base Courses):	
Below concrete floor slabs.	95%
Below pavement surfacing.	100%
Backfill (not adjacent to structures and beyond exterior slab areas):	90%

3.15 GRADING

A. General: Uniformly grade areas to a smooth surface, free from irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.
   1. Provide a smooth transition between existing adjacent grades and new grades.
   2. Cut out soft spots, fill low spots, and trim high spots to conform to required surface tolerances.

B. Site Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish subgrades to required elevations within the following tolerances:
   1. Lawn or Unpaved Areas: ±0.10 feet.
   2. Walks: ±0.10 feet.
   3. Pavements: ±1/2-inch.

3.16 SUBBASE AND BASE COURSES

A. Under pavements and walks, place sub-base course material on prepared subgrades. Place base course material over sub-bases to pavements.
   1. Shape sub-base and base to required crown elevations and cross-slope grades.
   2. When thickness of compacted sub-base or base course is 6-inches or less, place materials in a single layer.

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3. When thickness of compacted sub-base or base course exceeds 6-inches, place materials in equal layers with no layer more than 6-inches thick or less than 3-inches thick when compacted.

B. Pavement Shoulders: Place shoulders along edges of sub-base and base course to prevent lateral movement. Construct shoulders at least 12-inches wide of acceptable soil materials and compact simultaneously with each sub-base and base layer.

3.17 FIELD QUALITY CONTROL

A. Testing Agency Services: Allow testing agency to inspect and test each subgrade and each fill or backfill layer. Do not proceed until test results for previously completed Work verify compliance with requirements.
   1. Perform field in-place density tests according to ASTM D1556 (sand cone method), ASTM D2167 (rubber balloon method), or ASTM D2937 (drive cylinder method), as applicable.
      a. Field in-place density tests may also be performed by the nuclear method according to ASTM D2922, provided that calibration curves are periodically checked and adjusted to correlate to tests performed using ASTM D1556. With each density calibration check, check the calibration curves furnished with the moisture gages according to ASTM D3017.
      b. When field in-place density tests are performed using nuclear methods, make calibration checks of both density and moisture gages at beginning of Work, on each different type of material encountered, and at intervals as directed by the ENGINEER.
   2. Trench Backfill: In each compacted initial and final backfill layer, perform at least one field in-place density test for each 150 feet or less of trench, but no fewer than two tests.

B. When testing agency reports that subgrades, fills, or backfills are below specified density, scarify and moisten or aerate, or remove and replace soil to the depth required, recompact, and retest until required density is obtained.

C. Minimum number of in-place density test are as follows:

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TEST LOCATION	FREQUENCY OF TEST
Utility Trench Bedding, Shading and Backfill	1 Test every 300 L.F. of Trench 12" compacted lift
Manhole Backfill	1 Test every other 12" compacted lift – Alternating sides of manhole
Structural Backfill or Retaining Wall Backfill	1 test every 200 L.F. 12" compacted lift
Finished subgrade beneath On-Site Pavements	1 test every 300 L.F. of Pavement or Fraction thereof
ABC beneath On-Site Pavements	1 test every 300 L.F. of Pavement or Fraction thereof

3.18 PROTECTION

A. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.

B. Repair and re-establish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or lose compaction due to subsequent construction operations or weather conditions.
   1. Scarify or remove and replace material to depth directed by the ENGINEER; reshape and recompact at optimum moisture content to the required density.

C. Settling: Where settling occurs during the Project correction period, remove finished surfacing, backfill with additional approved material, compact, and reconstruct surfacing.
   1. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to the greatest extent possible.

3.19 DISPOSAL OF SURPLUS AND WASTE MATERIALS

A. Remove waste material, including unsatisfactory soil, trash, and debris, and legally dispose of it off the OWNER'S property.

++ END OF SECTION ++

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SECTION 11295

HYDRAULIC VALVES

PART 1 - GENERAL

1.1 SUMMARY

A. Furnish and install all valves, operators and valve accessories for reclaimed water as indicated on the Plans and as specified herein, including all appurtenances required for a complete and operational installation.

1.2 RELATED SECTIONS

A. Section 01300, Submittals.

1.3 REFERENCES

A. ANSI/AWWA C500 - Gate Valves.

B. ANSI/AWWA C509 - Resilient-Seated Gate Valves.

C. ANSI B16.1.

D. ANSI B46.1.

E. ASTM A126.

F. ASTM A269.

G. ASTM A48.

H. ASTM A536.

I. ASTM A582.

J. ASTM B271.

K. ASTM D429.

L. ASTM D1784.

M. ASTM D2000.

N. ASTM F439.

O. All other applicable ASTM and ANSI Standards.

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1.4 SUBMITTALS

A. Each Shop Drawing submittal shall include a copy of the relevant Specification Section. Each and every paragraph of the Specification Section shall be clearly marked to indicate whether the requirements for equipment and/or services in the Specification Section are met. If clarifications are needed to any of the paragraphs in the Specification Section, they shall be addressed next to the paragraph or in an attached letter as such and explained further with any additional information necessary. If any exceptions and/or deviations are proposed to any of the Specifications, they shall be clearly noted as such in the submittal, and an explanation of any deviation and/or exception shall be provided. The CONTRACTOR shall furnish equipment and/or services as specified if an exception and/or deviation is rejected.

PART 2 - PRODUCTS

2.1 GENERAL

A. All buried valves shall be provided with a valve box and cover.

2.2 VALVES

A. Gate Valves, Insertion Valves, Combination Air Release Valves: 1. All Water Valves shall be in accordance with City of Chandler Supplement to MAG Standard Specification Sections 610 and 630 and as listed in the latest City of Chandler Approved Product List. 2. All buried valve box installation for potable water shall be per City of Chandler Standard Detail C-307. 3. All buried valve box installation for reclaimed water shall be per City of Chandler Standard Detail C-406.

2.3 SHOP PAINTING

A. The manufacturer shall paint all valves, floor boxes, and valve boxes as follows:
   1. Clean and remove oil, grease, dirt, loose mill scale, and other foreign substances from un-galvanized ferrous-metal surfaces.
   2. Solvent scrub with stiff bristle brush followed by brush-off abrasive blast cleaning to a minimum surface profile depth of 1.5 mils.
   3. Valves, floor boxes, and valve boxes to be installed in exterior or buried conditions shall have prime coat Series 69-1255 (beige) H.B. Epoxoline II; one coat, 3-5 mils dry film thickness (DFT).
   4. Valves and floor boxes to be installed in interior exposure conditions shall have prime coat Series 135 Chembuild; one coat, 3-5 mils DFT.

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PART 3 - EXECUTION

3.1 INSTALLATION

A. Workmanship shall be of the highest grade throughout and in accordance with the best standard practice for this type of equipment.

B. Valves of the various types and pattern shall be installed at the respective locations as shown on the Drawings, listed in the valve schedule, and specified herein.

C. All appurtenances required for operation and control of the valves shall be included.

D. Joints and connections shall be made in accordance with applicable requirements for pipeline or pipe joints.

E. Valve stems shall be plumb and vertical unless otherwise specifically shown.

F. Each valve shall be adjusted for smooth and easy operation and shall be watertight when placed in operation under maximum working pressure.

++ END OF SECTION ++

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SECTION 15050

PIPING SYSTEMS

PART 1 - GENERAL

1.1 DESCRIPTION

A. Scope: This Section specifies systems of process piping and general requirements for piping systems. Detailed Specifications for the components listed on the Piping System Specification Sheets are found in other Sections of Division 15, Mechanical. This Section shall be used in conjunction with those Sections.

B. Related Sections:
   1. Section 02200, Earthwork.
   2. Section 15051, Buried Piping Installation.

1.2 QUALITY ASSURANCE

A. This Section contains references to the following documents. They are a part of this Section as specified and modified. In case of conflict between the requirements of this Section and those of the listed documents, the requirements of this Section shall prevail.

B. Unless otherwise specified, references to documents shall mean the documents in effect at the time of Advertisement for Bids or Invitation to Bid (or on the effective date of the Agreement if there were no Bids). If referenced documents have been discontinued by the issuing organization, references to those documents shall mean the replacement documents issued or otherwise identified by that organization or, if there are no replacement documents, the last version of the document before it was discontinued. Where document dates are given in the following listing, references to those documents shall mean the specific document version associated with that date, whether or not the document has been superseded by a version with a later date, discontinued, or replaced.
   1. AASHTO M36/M36M - Metallic (Zinc or Aluminum) Coated Corrugated Steel Culverts and Underdrains.
   2. ANSI A13.1 - Scheme for the Identification of Piping Systems.
   3. ANSI B1.20.1 - Pipe Threads, General Purpose (Inch).
   4. ANSI B16.1 - Cast Iron Pipe Flanges and Flanged Fittings Class 25, 125, 250, and 800.
   5. ANSI B16.3 - Malleable Iron Threaded Fittings Class 150 and 300.
   6. ANSI B16.5 - Pipe Flanges and Flanged Fittings.
   7. ANSI B16. - Factory Made Wrought Steel Buttwelding Fittings.
   8. ANSI B16.11 - Forged Steel Fittings, Socket Welding and Threaded.
   9. ANSI B16.12 - Cast Iron Threaded Drainage Fittings.
   10. ANSI B16.22 - Wrought Copper and Copper Alloy Solder Joint Pressure Fittings.

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11. ANSI B16.26 - Cast Copper Alloy Fittings for Flared Copper Tubes.
12. ANSI B31.1 - Power Piping.
13. ANSI B31.3 - Chemical Plant and Petroleum Refinery Piping.
14. ASME Section IX - Boiler and Pressure Vessel Code; Welding and Brazing Qualifications.
15. ASTM A47 - Malleable Iron Castings.
16. ASTM A74 - Cast Iron Soil Pipe and Fittings.
17. ASTM A105/A105M - Forgings, Carbon Steel, for Piping Components.
18. ASTM A106 - Seamless Carbon Steel Pipe for High Temperature Service.
19. ASTM A126 - Standard Specification for Gray Iron Castings for Valves, Flanges, and Pipe Fittings.
20. ASTM A197 - Cupola Malleable Iron.
21. ASTM A234/A234M - Pipe Fittings of Wrought Carbon Steel and Alloy Steel for Moderate and Elevated Temperatures.
22. ASTM A312/A312M - Seamless and Welded Austenitic Stainless Steel Pipe.
23. ASTM A403/A403M - Wrought Austenitic Stainless Steel Piping Fittings.
24. ASTM A536 - Ductile Iron Castings.
25. ASTM A570/A570M - Hot Rolled Carbon Steel Sheet and Strip, Structural Quality.
26. ASTM B88 - Seamless Copper Water Tube.
27. ASTM C76 - Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe.
28. ASTM C443-REV A - Standard Specification for Joints for Circular Concrete Sewer and Culvert Pipe, Using Rubber Gaskets.
29. ASTM C564 - Rubber Gaskets for Cast Iron Soil Pipe and Fittings.
30. ASTM D1248 - Polyethylene Plastics Molding and Extrusion Materials.
31. ASTM D1784 - Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds.
32. ASTM D1785 - Poly (Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120.
33. ASTM D2241 - Poly (Vinyl Chloride) (PVC) Plastic Pipe (SDR-PR).
34. ASTM D2513 - Thermoplastic Gas Pressure Pipe, Tubing, and Fittings.
35. ASTM D2665 - Poly (Vinyl Chloride) (PVC) Plastic Drain, Waste, and Vent Pipe and Fittings.
36. ASTM D2996 - Filament Wound Reinforced Thermosetting Resin Pipe.
37. ASTM D3034 - Standard Specification for Type PSM Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings.
38. ASTM D3261 - Butt Fusion Polyethylene (PE) Plastic Fittings for Polyethylene (PE) Plastic Pipe and Tubing.
39. ASTM D4174 - Cleaning, Flushing, and Purification of Petroleum Fluid Hydraulic Systems.
40. ASTM D4101 - Propylene Plastic Injection and Extrusion Materials.
41. ASTM F441 - Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe, Schedules 40 and 80.
42. AWWA C105 - Polyethylene Encasement for Ductile-Iron Piping for Water and Other Liquids.

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43. AWWA C110 - Ductile Iron and Gray Iron Fittings, 3" Through 48", for Water and Other Liquids.
44. AWWA C111 - Rubber Gasket Joints for Ductile Iron and Gray Iron Pressure Pipe and Fittings.
45. AWWA C115 - Flanged Ductile Iron and Gray Iron Pipe with Threaded Flanges.
46. AWWA C151 - Ductile Iron Pipe, Centrifugally Cast in Metal Molds or Sand-Lined Molds, for Water or Other Liquids.
47. AWWA C200 - Steel Water Pipe 6" and Larger.
48. AWWA C205 - Cement Mortar Protective Lining and Coating for Steel Water Pipe - 4" and Larger - Shop Applied.
49. AWWA C206 - Field Welding of Steel Water Pipe.
50. AWWA C207 - Steel Pipe Flanges for Waterworks Services - Sizes 4" Through 144".
51. AWWA C208 - Dimensions for Fabricated Steel Water Pipe Fittings.
52. AWWA C209 - Cold Applied Tape Coating for Special Sections, Connections, and Fittings for Steel Water Pipelines.
53. AWWA C210 - Liquid Epoxy Coating Systems for the Interior and Exterior of Steel Water Pipe.
54. AWWA C214 - Tape Coating Systems for the Exterior of Steel Water Pipelines.
55. AWWA 301 - Pre-stressed Concrete Pressure Pipe, Steel Cylinder Type, for Water and Other Liquids.
56. AWWA C303 - Reinforced Concrete Pressure Pipe, Steel Cylinder Type, Pre-tensioned, for Water and Other Liquids.
57. AWWA C600 - Installation of Ductile Iron Water Mains and Their Appurtenances.
58. AWWA C651 - Disinfecting Water Mains.
59. AWWA C900 - Polyvinyl Chloride (PVC) Pressure Pipe, 4" Through 12", for Water.
60. AWWA M11 - Steel Pipe - A Guide for Design and Installation.
61. CISPI 301 - Specification Data for Hubless Cast Iron Sanitary System with No-Hub Pipe and Fittings.
62. FEDSPEC L-C-530B(1) - Coating, Pipe, Thermoplastic Resin, or Thermosetting Epoxy.
63. MIL-H-13528B - Hydrochloric Acid, Inhibited, Rust Removing.
64. MIL-STD-810C - Environmental Test Methods.
65. SAE J1227 - Assessing Cleanliness of Hydraulic Fluid Power Components and Systems.
66. UPC - Uniform Plumbing Code.

C. Fittings and Coupling Compatibility:
   1. To assure uniformity and compatibility of piping components, fittings and couplings for grooved end piping systems shall be furnished by the same manufacturers.

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D. All Pipes, fittings, valves, fire hydrants, and other appurtenances shall conform to current AAWA, ASTM, and NSF standards.

PART 2 - PRODUCTS

2.1 PIPING MATERIALS

A. Unless otherwise specified, piping materials including pipe, gaskets, fittings, connection and joint assemblies, linings, and coatings shall be selected from those listed on the Piping System Specification Sheets.

B. Piping materials shall conform to detailed specifications for each type of pipe and piping appurtenance specified in other Sections of Division 15, Mechanical.

C. All piping shall be compatible with the fluid to which it is exposed.

D. All piping and valves to be used for the air release valve connections shall be copper or brass material.

E. All piping which comes in contact with potable water shall have NSF 61 certification.

2.2 VALVES

A. Valves of the same size and service shall be provided by a single valve manufacturer. Packing shall be non-asbestos material. Actual length of valves shall be within 1/16-inch (±) of the manufacturer's specified length. Flanges shall meet the requirement of ANSI B16.5. Push-on and mechanical joints shall meet the requirements of AWWA C111.

B. All Valves shall be manufactured as listed in the latest City of Chandler Approved Product List. No other manufacturer shall be acceptable.

2.3 SUBMITTALS

A. All additional submittal information shall be included with this submittal information as noted in the Division 15, Mechanical, Pipe Material Specifications.

B. Each Shop Drawing submittal shall include a copy of the relevant Specification Section. Each and every paragraph of the Specification Section shall be clearly marked to indicate whether the requirements for equipment and/or services in the Specification Section are met. If clarifications are needed to any of the paragraphs in the Specification Section, they shall be addressed next to the paragraph or in an attached letter as such and explained further with any additional information May 2022 City of Chandler 21-047 15050-5 Chandler Heights Road Utility Relocations necessary. If any exceptions and/or deviations are proposed to any of the Specifications, they shall be clearly noted as such in the submittal, and an

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explanation of any deviation and/or exception shall be provided. The CONTRACTOR shall furnish equipment and/or services as specified if an exception and/or deviation is rejected.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Location:
   1. Piping shall be provided as specified, except for adjustments, to avoid architectural and structural features.

B. Piping Sizes:
   1. Where the size of piping is not specified, the CONTRACTOR shall provide piping of the sizes required by UPC. Unless specified otherwise, small piping (less than 1-inch in diameter) required for services not described by UPC shall be 1/2-inch.

3.2 TESTING

A. General:
   1. Upon completion of piping, but prior to application of insulation on exposed piping, the CONTRACTOR shall test the piping systems in accordance with the appropriate MAG and City of Chandler Specifications. Pressures, media, and test durations shall be as specified in the PIPESPEC. Equipment which may be damaged by the specified test conditions shall be isolated. Testing shall be performed using calibrated test gages and calibrated volumetric measuring equipment to determine leakage rates. Each test gage shall be selected so that the specified test pressure falls within the upper half of the gage's range. Unless otherwise specified, the CONTRACTOR shall notify the ENGINEER 24 hours prior to each test.
   2. Unless otherwise specified, testing, as specified herein, shall include existing piping systems that connect with new pipe systems. Existing pipe shall be tested to the nearest existing valve. Any piping that fails the test shall be repaired. Repair of existing piping will be considered and paid for as extra Work.
   3. All blow off assemblies shall be removed after successful testing of the new pipes as specified in the Drawings.

B. Liquid Systems:
   1. Pressure and leakage testing for water systems shall be in accordance with MAG Section 610. Unless otherwise specified, leakage from other buried liquid piping systems shall be less than 0.02 gallons per hour per inch diameter per 100 feet of buried piping.

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3.3 CLEANING AND FLUSHING

A. General:
   1. Piping systems shall be cleaned following completion of testing and prior to connection to operating, control, regulating, or instrumentation equipment.
   2. The CONTRACTOR may, at his option, clean and test sections of buried piping systems. Use of this procedure, however, will not waive the requirement for a full pressure test of the completed system.
   3. Unless specified otherwise, piping 24-inches in diameter and smaller shall first be cleaned by pulling a tightly fitting cleaning ball or swab through the system.
   4. Piping larger than 24-inches in diameter may be cleaned manually or with a cleaning ball or swab.

B. Liquid Systems:
   1. After completion of cleaning, liquid systems, unless otherwise specified, shall be flushed with clean water.

C. Water Systems:
   1. For non-potable water systems, final flushing and microbiological testing, as specified in MAG Section 611.15, is not required.

3.4 PIPING SPECIFICATION SHEETS (PIPESPEC)

A. Piping and valves for groupings of similar plant processes or types of service lines are specified on individual piping specification sheets (PIPESPECS). Piping services are grouped according to the chemical and physical properties of the fluid conveyed and/or by the temperature or pressure requirements. Piping services specified in the PIPESPECS and on the Drawings are alphabetically arranged by designated service symbols, as shown in Table A. Table A also indicates the system number, fluid category and pipe marker background color each service.

TABLE A - PIPING SERVICES

Symbol	Service	Fluid Category	Pipe Marker Background Color
RW	Reclaimed Water	Liquid	Purple

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PIPING SYMBOL/SERVICE	**RW – RECLAIMED WATER**
Medium:	Reclaimed Water.
Pressure:	At least 125% of class rating of pipe under test. All requirements of MAG and City of Chandler Specifications shall be met.
Duration:	2 hours.

Gasket Requirements:

Flange:	1/8-inch thick Red Rubber Gasket Material (SBR) conforming to ASTM D1330.
Push-on/Mech. Cpl:	Nitrile or Neoprene.

Buried and Encased Pipes:

(See Drawings for pipe sizes and materials.)

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(4" and Larger) Pipe:	Ductile Iron; AWWA C151 with cement mortar lining. Ref. Spec. Section 15061 Ductile Iron Conn; Restrained push-on rubber gasket joint. Flanged adapters for valves and ends. Ductile Iron Ftgs; Ductile iron per Spec. Section 15061. Ductile Iron Exterior Coating; Bituminous Coated, Polyethylene Wrap
(2-1/2" and Larger) Valves:	Gate; Refer Section 11295, with extension stem and valve box.

BURIED PIPING SCHEDULE

Service	Material	Interior Lining	Exterior Coating	Pressure Class	Joint	Test Pressure (psig)
Reclaimed Water (Larger than 12-inch diameter)	DIP	CM	BC/PE	250	MJ	PER 15051

++ END OF SECTION ++

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SECTION 15051

BURIED PIPING INSTALLATION

PART 1 - GENERAL

1.1 DESCRIPTION

A. Scope:
   1. CONTRACTOR shall provide all labor, materials, equipment, and incidentals as shown, specified, and required to install and test all buried piping, fittings, and specials. The Work includes, but is not limited to, the following:
      a. All types and sizes of buried piping, except those specified under other Sections.
      b. Supports, restraints, and thrust blocks.
      c. Pipe encasements.
      d. Work on or affecting existing piping.
      e. Testing.
      f. Cleaning.
      g. Installation of all jointing and gasketing materials, specials, flexible couplings, mechanical couplings, harnessed and flanged adapters, sleeves, tie rods, and all other Work required to completing the buried piping installation.
      h. Incorporation of valves, meters and special items shown or specified into the piping systems as required and as specified in the appropriate Division 15, Mechanical Sections.
      i. Unless otherwise specifically shown, specified, or included under other Sections, all buried piping work required begins at the outside face of structures or structure foundations and extending away from structure.

B. Coordination:
   1. Review installation procedures under other Sections and coordinate with the Work that is related to this Section.
   2. Section 15051, Buried Pipe Installation, specifies the installation of all buried piping materials specified in Sections of Division 15, Mechanical. Coordinate with these Sections.

C. Related Work Specified Elsewhere:
   1. Section 02200, Earthwork.
   2. Section 11295, Hydraulic Valves.
   3. Section 15050, Piping Systems.
   4. Section 15061, Ductile Iron Pipe.
   5. Section 15020, Piping Specialties and Accessories.

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1.2 QUALITY ASSURANCE

A. CONTRACTOR shall conform to all applicable requirements of Parts 600 and 700 of the Uniform Standard Specifications for Public Work Construction by the Maricopa Association of Governments (MAG). If there is a conflict between MAG Standard Specifications and these Specifications, the provisions of these Specifications shall govern.

B. Requirements of Regulatory Agencies:
   1. Comply with requirements of UL, FM, and other jurisdictional authorities, where applicable.
   2. Refer to the General and Supplementary Conditions regarding permit requirements for this Work.

C. Reference Standards: Comply with applicable provisions and recommendations of the following, except as otherwise shown or specified.
   1. ASTM D2321 - Practice for Underground Installation of Flexible Thermoplastic Pipe.
   2. ASTM D2774 - Practice for Underground Installation of Thermoplastic Pressure Piping.
   3. AWWA C105 - Polyethylene Encasement for Ductile Iron Piping for Water and Other Liquids.
   4. AWWA C111 - Rubber Gasket Joints for Ductile Iron Pressure Pipe and Fittings.
   5. AWWA C200 - Steel Water Pipe.
   6. AWWA C205 - Cement Mortar Protective Lining and Coating for Steel Water Pipe.
   7. AWWA C206 - Field Welding of Steel Water Pipe.
   8. AWWA C207 - Steel Pipe Flanges for Waterworks Service.
   9. AWWA C208 - Dimensions for Fabricated Steel Water Pipe Fittings.
   10. AWWA C600 - Installation of Ductile Iron Water Mains and Their Appurtenances.
   11. AWWA C606 - Grooved and Shouldered Joints.
   12. AWWA C651 - Disinfecting Water Mains.
   13. AWWA M11 - Steel Pipe - A Guide for Design and Installation.
   14. AWWA M23 - PVC - Design and Installation.
   15. AWWA M41 - Ductile Iron Pipe and Fittings.
   16. ASCE MOP No. 37 - Design and Construction of Sanitary and Storm Sewers
   17. Concrete Pipe Handbook - American Concrete Pipe Association.

1.3 SUBMITTALS

A. Shall be in accordance with Section 15050, Piping Systems, submittal information.

B. A copy of this specification section, with addendum updates included, and all referenced and applicable sections, with addendum updates included, with each paragraph check-marked to indicate specification compliance or marked to indicate

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requested deviations from specification requirements. Check marks (✓) shall denote full compliance with a paragraph as a whole. If deviations from the specifications are indicated, and therefore requested by the CONTRACTOR, each deviation shall be underlined and denoted by a number in the margin to the right of the identified paragraph, referenced to a detailed written explanation of the reasons for requesting the deviation. The ENGINEER shall be the final authority for determining acceptability of requested deviations. The CONTRACTOR shall furnish equipment and/or services as specified if an exception and/or deviation is rejected. The remaining portions of the paragraph not underlined will signify compliance on the part of the CONTRACTOR with the specifications. Failure to include a copy of the marked-up specification sections, along with justification(s) for any requested deviations to the specification requirements, with the submittal shall be sufficient cause for rejection of the entire submittal with no further consideration.

1.4 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to the site to ensure uninterrupted progress of the Work.

B. Handle all pipe, fittings, specials, and accessories carefully with approved handling devices. Do not drop or roll material off trucks. Do not otherwise drop, roll, or skid piping.

C. Store pipes and fittings on heavy wood blocking or platforms so they are not in contact with the ground.

D. Unload pipe, fittings, and specials opposite to or as close to the place where they are to be installed as is practical to avoid unnecessary handling. Keep pipe interiors completely free from dirt and foreign matter.

E. Inspect delivered pipe for cracked, gouged, chipped, dented, or other damaged material and immediately remove defective pipe from site.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Required pipe materials are listed in the Piping Schedule. Refer to applicable Sections for Material Specifications.

B. General:
   1. Marking Piping:
      a. Clearly mark each piece of pipe or fitting with a designation conforming to those shown on the laying schedule and/or Shop Drawings.
      b. Cast or paint material, type, and pressure designation on each piece of pipe or fitting 4-inches in diameter and larger. Each piece of steel pipe shall be clearly marked with the thickness of the steel in the pipe wall.

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c. Pipe and fittings smaller than 4-inches in diameter shall be clearly marked by manufacturer as to material, type, and rating.

PART 3 - EXECUTION

3.1 INSTALLATION

A. General:
1. Installation of all pipe, fittings, valves, specials, and appurtenances shall be subject to the review and/or approval of the ENGINEER.
2. Install piping as shown, specified, and as recommended by the manufacturer and in conformance with referenced standards, and approved Shop Drawings.
3. Request instructions from ENGINEER before proceeding if there is a conflict between the manufacturer's recommendations and the Contract Documents.
4. All piping shall be inspected by the ENGINEER prior to installation. ENGINEER'S inspection will not relieve CONTRACTOR or manufacturer from responsibility for damaged products.
5. All piping shall be carefully examined for cracks, damage, or other defects before installation. Any piping that is defective, including but not limited to, cracked, damaged, in poor condition, or with damaged linings or improper markings shall be rejected unless the product can be repaired in a manner acceptable to the manufacturer and ENGINEER. Any piping found to be broken or defective after it has been installed shall be removed, replaced, or repaired at the CONTRACTOR'S expense.
6. Minimum earth cover over the piping shall be as shown on the Drawings, specified or directed by the ENGINEER, but in no case shall the earth cover be less than 4 feet for all piping.
7. Required earthwork shall be as specified in applicable Sections of Division 2, Site Work.
8. Present all conflicts between piping systems and equipment, structures or facilities to ENGINEER for determination of corrective measures before proceeding.
9. Take field measurements, where required, prior to installation to ensure proper fitting of Work. The CONTRACTOR shall uncover the existing pipelines sufficiently in advance of the proposed Work in order that the type and location of the existing pipes and joints and other information required to fabricate the proposed piping can be determined. It shall be the responsibility of the CONTRACTOR to obtain whatever information is required to complete the connections of the proposed pipelines to the existing pipelines. Refer to Paragraph 3.3 of this Section, as applicable.
10. Interior of all piping and mating surfaces shall be inspected and all dirt, gravel, sand, debris or other foreign material shall be completely removed from the interior and mating surfaces before installation. Measures shall be taken to maintain the interior of all piping clean until acceptance of the completed Work. Care shall be taken to prevent foreign matter from entering joint space. Bell and spigot mating surfaces shall be wiped clean immediately before

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piping is laid. For ductile iron pipe, the bell and spigot mating surfaces shall be thoroughly cleaned with a wire brush.

11. Install piping accurately to line and grade shown, specified or directed, unless otherwise approved by the ENGINEER. Accurate means of determining and checking the alignment and grade shall be used, which shall be subject to the approval of the ENGINEER. Any modifications to the Contract Documents to suit the pipe manufacturer's standard shall be approved by the ENGINEER. Remove and relay piping that is incorrectly installed, at CONTRACTOR'S expense.
12. Do not lay piping in water, unless otherwise specified in these Specifications or approved by the ENGINEER. Ensure that the water level in the trench is at least 6-inches below the bottom of piping. Maintain a dry trench until jointing and backfilling are complete, unless otherwise specified in these Specifications or approved by the ENGINEER.
13. Where unforeseen conditions will not permit the installation of piping as shown or specified, no piping shall be installed without approval of the ENGINEER. Do not modify structures or facilities without approval of the ENGINEER.
14. Start laying piping at lowest point and proceed toward the higher elevations, unless otherwise approved by the ENGINEER. Slope piping uniformly between elevations shown on the Drawings or as otherwise directed by the ENGINEER.
15. Place bell and spigot piping so that the bells face the direction of laying, unless otherwise approved by the ENGINEER.
16. Piping shall be installed so that the barrel of the piping, and not the joints, receives the bearing pressure from the trench bottom or other bedding condition.
17. No piping shall be brought into position until the preceding length, valve, fitting, or special has been bedded and secured in place.
18. Whenever pipe laying is not actively in progress, the open ends of the piping shall be closed by a temporary plug or cap to prevent soil, water, and other foreign matter from entering the piping.
19. Field cutting of metallic piping, where required for inserting valves, fitting, specials, and closures, shall be made with a machine specially designed for cutting piping and in accordance with the manufacturer's instructions. Cuts shall be carefully done, without damage to piping, so as to leave a smooth end at right angles to the axis of the piping. Cut end shall be tapered and sharp edges filed off smooth. Flame cutting shall not be permitted. Piping damaged by the CONTRACTOR by improper or careless methods of cutting shall be replaced or repaired at his expense.
20. Blocking under piping shall not be permitted, unless specifically approved by ENGINEER for special conditions.
21. Protective linings and coatings shall be touched up prior to installation, where required.
22. Except where bends, wyes or similar fittings are used, changes in alignment and grade of the piping shall be made by deflecting joints or with beveled pipe.

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Permissible joint deflection shall not exceed 75% of the amount allowed by the manufacturer.

23. All joints shall be made in the presence of the ENGINEER, or his duly authorized representative, except as otherwise approved.
24. Special care shall be taken to ensure that each section of piping abuts against the next in such a manner that there will be not shoulder or unevenness of any kind along the piping invert.
25. Piping shall be rotated as required to place outlets in proper position.
26. Blind flanges and cleanouts shall be provided at locations shown on the Drawings, specified, or required. Cleanouts on buried piping shall include all pipes, fittings, and appurtenances required to bring cleanout to finished grade and terminate in a flange and blind flange or suitably capped piping as shown. Cleanout piping shall be same as that specified for the main run.
27. All gravity lines shall pitch uniformly at the grade shown or as specified or approved.
28. Short pipe stubs, maximum 4 feet in length, shall be used at all manholes and other wall faces, except as otherwise specified.
29. Field painting shall be accomplished after joints are made.
30. All piping shall be plugged watertight with a suitable cap or plug securely fastened to the end of the piping at all contact interfaces.
31. CONTRACTOR shall notify ENGINEER in advance of backfilling operations.
32. On steep slopes, take measures acceptable to ENGINEER to prevent movement of the pipe during installation.
33. Thrust Restraint: During the installation of the pipe, thrust blocks, tied joints, or proprietary restrained joint systems shall be provided wherever required for thrust restraint. Thrust restraint shall conform to the applicable requirements of Paragraph 3.2 of this Section.
34. Exercise care to avoid flotation when installing pipe in cast-in-place concrete.

B. Manufacturer's Installation Specialist:
   1. Provide the services of a competent installation specialist of the pipe manufacturer when pipe laying begins if the CONTRACTOR is not experienced in laying and jointing a particular type of pipe.
   2. Retain installation specialist at the site for a minimum of two days or until competency of the pipe laying crew has been satisfactorily demonstrated.

C. Separation of Sewers and Potable Water Pipe Lines:
   1. Conform to the requirements of all applicable requirements of the Uniform Standard Specifications for Public Work Construction by the Maricopa Association of Governments (MAG).

D. Plugs:
   1. Temporarily plug installed pipe at the end of each day's Work or other interruption to the installation of any pipe line. Plugging shall prevent the entry of animals, liquids, or persons into the pipe or the entrance or insertion of deleterious materials.

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2. Install standard plugs into all bells at dead ends, tees or crosses. Cap all spigot ends.
3. Fully secure and block all plugs and caps installed for pressure testing to withstand the specified test pressure.
4. Where plugging is required for phasing of the Work or for subsequent connection of piping, install watertight, permanent type plugs.

E. Bedding Pipe: Bed pipe as specified below and in accordance with the details shown.
1. Trench excavation and backfill and bedding materials shall conform to the requirements of Section 02200, Earthwork, as applicable.
2. Excavate trenches below the pipe bottom by an amount specified. Remove all loose and unsuitable material from the trench bottom.
3. Carefully and thoroughly compact all pipe bedding with hand held pneumatic compactors.
4. Do not lay pipe until the ENGINEER approves the bedding condition. If a conflict exists, obtain clarification from ENGINEER before proceeding.
5. No pipe shall be brought into position until the preceding length has been bedded and secured in its final position.

F. Laying Pipe:
1. Conform to manufacturer's instructions and requirements of the standards listed below, where applicable:
   a. Ductile Iron Pipe: AWWA C600, AWWA C105.
   b. ASCE Manual of Practice No. 37.

G. Polyethylene Encasement:
1. Provide polyethylene encasement for ductile iron piping to prevent contact between the pipe and surrounding bedding material and backfill.
2. Polyethylene may be supplied in tubes or in sheet material.
3. Polyethylene encasement materials and installation shall be in accordance with the requirements of MAG Section 610.6.

H. Jointing Pipe:
1. Ductile Iron Mechanical Joint Pipe:
   a. Wipe clean the socket, plain end and adjacent areas immediately before making joint. Make certain that cut ends are tapered and sharp edges are filed off smooth.
   b. Lubricate the plain ends and gasket with soapy water or an approved pipe lubricant, in accordance with AWWA C111, just prior to slipping the gasket onto the plain end of the joint assembly.
   c. Place the gland on the plain end with the lip extension toward the plain end, followed by the gasket with the narrow edge of the gasket toward the plain end.
   d. Insert the pipe into the socket and press the gasket firmly and evenly into the gasket recess. Keep the joint straight during assembly.

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e. Push gland toward socket and center it around pipe with the gland lip against the gasket.
f. Insert bolts and hand tighten nuts.
g. Make deflection after joint assembly, if required, but prior to tightening bolts. Alternately tighten bolts 180 degrees apart to seat the gasket evenly. The bolt torque shall be as follows:

Pipe Size (inches)	Bolt Size (inches)	Range of Torque (ft-lbs)
3	5/8	45-60
4-24	3/4	75-90
30-36	1	100-120
42-48	1-1/4	120-150

h. All bolts and nuts shall be heavily coated with two 10 mil minimum coats of coal-tar epoxy coating as manufactured by Koppers, Tnemec, or equal.
i. Restrained mechanical joints shall be in accordance with Section 15061, Ductile Iron Pipe.

2. Ductile Iron Push-On Joint Pipe:
   a. Prior to assembling the joints, the last 8-inches of the exterior surface of the spigot and the interior surface of the bell shall be thoroughly cleaned with a wire brush, except where joints are lined or coated with a special protective lining or coating.
   b. Rubber gaskets shall be wiped clean and flexed until resilient. Refer to manufacturer's instructions for procedures to ensure gasket resiliency when assembling joints in cold weather.
   c. Insert gasket into joint recess and smooth out the entire circumference of the gasket to remove bulges and to prevent interference with the proper entry of the spigot of the entering pipe.
   d. Immediately prior to joint assembly, apply a thin film of approved lubricant to the surface of the gasket which will come in contact with the entering spigot end of pipe. CONTRACTOR may, at his option, apply a thin film of lubricant to the outside of the spigot of the entering pipe.
   e. For assembly, center spigot in the pipe bell and push pipe forward until it just makes contact with the rubber gasket. After gasket is compressed and before pipe is pushed or pulled all the way home, carefully check the gasket for proper position around the full circumference of the joint. Final assembly shall be made by forcing the spigot end of the entering pipe past the rubber gasket until it makes contact with the base of the bell. When more than a reasonable amount of force is required to assemble the joint,

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the spigot end of the pipe shall be removed to verify the proper positioning of the rubber gasket. Gaskets which have been scoured, or otherwise damaged, shall not be used.

f. Maintain an adequate supply of gaskets and joint lubricant at the site at all times when pipe jointing operations are in progress.

3. Proprietary Joints:
   a. Pipe which utilizes proprietary joints such as Fastite, by American Cast Iron Pipe Company, Tyton by U.S. Pipe Incorporated, restrained joints described under Paragraph 3.2 of this Section, or other such joints shall be installed in strict accordance with the manufacturer's instructions.
4. Mechanical Coupling Joints:
   a. Prior to the installation and assembly of mechanical couplings, the joint ends shall be cleaned thoroughly with a wire brush to remove foreign matter. Following this cleaning, lubricant shall be applied to the rubber gasket or inside of the coupling housing and to the joint ends. After lubrication, the gasket shall be installed around the joint end of the previously installed piece and the joint end of the subsequent piece shall be mated to the installed piece. The gasket shall be positioned and the coupling housing placed around the gasket and over the grooved or shouldered joint ends. The bolts shall be inserted and the nuts screwed up tightly by hand. The bolts shall then be tightened uniformly in order to produce an equal pressure on all parts of the housing. When the housing clamps meet metal to metal, the joint is complete and further tightening is not required.

I. Backfilling:
   1. Conform to the applicable requirements of Section 02200, Earthwork.
   2. Place backfill as construction progresses. Backfill by hand and use power tampers until pipe is covered by at least 1 foot of fill.

J. Connections to Valves:
   1. Install valves as shown.
   2. Provide suitable adapters when valves and piping have different joint types.
   3. Provide thrust restraint at all valves at pipeline terminations.

K. Transitions from One Type of Pipe to Another:
   1. Provide all necessary adapters, specials and connection pieces required when connecting different types and sizes of pipe or connecting pipe made by different manufacturers.

L. Closures:
   1. Provide all closure pieces shown or required to complete the Work.

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3.2 THRUST RESTRAINT

A. Provide thrust restraint on all pressure piping systems and where otherwise shown and specified. Pipe joints shall be restrained as specified in Paragraph 3.2.C of this Section.

B. Thrust restraint shall be accomplished by means of restrained pipe joints. Concrete thrust blocks shall be used only when specifically shown on the Drawings or as directed by the ENGINEER. Thrust restraints shall be designed for the axial thrust exerted by the test pressure given in the Buried Piping Schedule.

C. Restrained Pipe Joints:
   1. Pipe joints shall be restrained by means suitable to the type of pipe being installed.
      a. Ductile iron push-on joints and mechanical joints shall be restrained utilizing a proprietary restrained joint system such as American Fast-Grip and American Flex-Ring Joint, MEGALUG Ductile Iron Pipe Restraints as manufactured by EBAA Iron Inc., TR Flex Gripper Ring and TR Flex Joints,, , and tie rods, or other system approved by ENGINEER.
      b. Pipe thrust restraint shall be in accordance with the Schedule of Restrained Pipe Lengths and as noted on the Project Drawings.
   2. Schedule of Restrained Pipe Lengths: Restrained pipe lengths shall conform to the requirements of AWWA M41 for ductile iron pipe. Restrained pipe lengths shall be as shown on the Construction Plans. For pipe not specifically illustrated on the Plans, CONTRACTOR shall submit a lay schedule identifying restrained lengths complying with AWWA M41.

3.3 WORK AFFECTING EXISTING PIPING

A. Location of Existing Piping:
   1. Locations of existing piping shown should be considered approximate.
   2. CONTRACTOR shall determine the true locations of existing piping to which Work is to be performed, and locations of other facilities which could be disturbed during earthwork operations, or which may be affected by CONTRACTOR'S Work already installed.

B. Taking Existing Pipelines Out of Service:
   1. Do not take pipelines out of services, unless specifically provided for under this Project or approved by ENGINEER.
   2. Notify ENGINEER at least 48 hours prior to taking pipeline out of service.

C. Work on Existing Pipelines:
   1. Cut or tap pipes as shown or required with machines specifically designed for this Work.
   2. Install temporary plugs to prevent entry of mud, dirt, water, and debris.
   3. Provide all necessary adapters, fittings, pipe, and appurtenances required to complete the Work.

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4. Existing pipelines that are cut and abandoned shall be adequately capped or filled with grout.

3.4 TESTING OF PIPING

A. General:
   1. All testing shall conform to the MAG Standard Specifications 611. In case of contradiction with these Specifications the CONTRACTOR shall notify the ENGINEER before proceeding with the testing.
   2. Test all piping except as otherwise authorized by ENGINEER.
   3. Notify ENGINEER 48 hours in advance of testing.
   4. Provide all testing apparatus, including pumps, hoses, gauges, and fittings.
   5. Unless otherwise noted, pipelines shall hold specified test pressure for two hours.
   6. Repair and retest pipelines that fail to hold specified test pressure or which exceed the allowable leakage rate.
   7. Unless otherwise specified, test pressures required are at the lowest elevation of the pipeline section being tested.
   8. Conduct all tests in the presence of ENGINEER.
   9. Advise local authorities having jurisdiction if their presence is required during testing.
   10. All testing shall conform to the MAG Standard Specifications. In case of contradiction with these Specifications the CONTRACTOR shall notify the ENGINEER before proceeding with the testing.

B. Schedule of Pipeline Tests:
   1. Test piping at the test pressures listed in the Buried Piping Schedule and respective pipe material specification.
   2. All piping shall be water tested after installation, except as otherwise specified or directed by ENGINEER.
   3. For piping not included in the Schedule, the ENGINEER will notify CONTRACTOR in writing of the test pressure to be used.

C. Pressure Test Procedure:
   1. Complete backfill and compaction at least to the pipe centerline before testing, unless otherwise required or approved by ENGINEER.
   2. Allow concrete for thrust blocks to reach design strength before testing.
   3. Fill section to be tested slowly with water and expel all air. Install corporation cocks, if necessary, to remove all air.
   4. Test only one section of pipe at a time.
   5. Apply specified test pressure for two hours and observe pressure gage. Check carefully for leaks while test pressure is being maintained.

D. Leakage Testing:
   1. Conduct leakage test for all liquid piping after satisfactory completion of pressure test.

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2. Allow concrete pipe to stand full of water at least 12 hours prior to starting leakage test.
3. Maintain test pressure constantly for the minimum test period and accurately measure the amount of water which must be added to maintain the test pressure.
4. Allowable Leakage Rates (in gallons per hour per 1,000 feet per inch diameter):
   a. DIP Push-On or Mechanical Joints: 0.075.
   b. Copper, Steel, and Thermoplastic: None.
5. Leakage Test Procedure:
   a. Examine exposed pipe, joints, fittings, and valves. Repair visible leakage or replace the defective pipe, fitting, or valve.
   b. Refill the line under test to reach the required test pressure.
   c. Provide a test container filled with a known quantity of water at the start of the test. Attach the test pump suction to the test container.
   d. Pump water from the test container into the line with the test pump to hold the specified test pressure for the test period. Water remaining in the container shall be measured and the amount used during the test shall be recorded on the test report.
   e. Perform all repair, replacement, and retesting required because of failure to meet testing requirements.
   f. Leakage shall be less than rate specified above.

3.5 DISPOSAL OF WATER

A. CONTRACTOR shall provide suitable means for disposal of test and flushing water so that no damage results to facilities or waterways.

B. Means of disposal of test and flushing water shall be subject to the approval of ENGINEER, local governing authorities, and regulatory agencies.

C. CONTRACTOR shall be responsible for any damage caused by his water disposal operations.

3.6 CLEANING

A. Cleaning:
   1. Thoroughly clean all piping and flush prior to placing in service in a manner approved by ENGINEER.
   2. Piping 24-inches in diameter and larger shall be inspected from inside and all debris, dirt and foreign matter removed.
   3. If piping that requires disinfection has not been kept clean during storage or installation, CONTRACTOR shall swab each section individually before installation with a 5% hypochlorite solution, to ensure clean piping.

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3.7 PIPING SCHEDULE

A. The following abbreviations are used in the Buried Piping Schedule:
   1. Service Abbreviations:
      a. Potable Water: W.
      b. Reclaimed Water: RW.
   2. Material Abbreviations:
      a. Asbestos Concrete Pipe: ACP
      b. Chlorinated Polyvinyl Chloride: CPVC
      c. Copper Pipe: COP
      d. Ductile Iron Pipe: DIP
      e. Glass-Lined Ductile Iron Pipe: GDIP
      f. Galvanized Steel: GST
      g. Polyethylene: PE
      h. Polyvinyl Chloride: PVC
      i. Stainless Steel Pipe: SST
      j. Vitrified Clay Pipe: VCP
   3. Lining/Coating Abbreviations:
      a. Bituminous Coated: BC
      b. Cement Mortar Lined: CM
      c. Galvanized: GALV
      d. Glass Lined: GL
      e. Polyethylene Wrap: PE
      f. Protecto 401 Ceramic Epoxy: CE
      g. T-Lock: TL
      h. Painting: P (Painted per Section 09900)
   4. Joint Abbreviations:
      a. Bell and Spigot: BS
      b. Butt Wrapped: BW
      c. Flanged: FL
      d. Mechanical Joint: MJ
      e. Soldered: SD
      f. Solvent Welded: SW
      g. Welded: W

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BURIED PIPING SCHEDULE

Service	Material	Interior Lining	Exterior Coating	Pressure Class	Joint	Test Pressure (psig)
Reclaimed Water (Larger than 12-inch diameter)	DIP	CM	BC	250	MJ/BS	150

++ END OF SECTION ++

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SECTION 15061

DUCTILE IRON PIPE

PART 1 - GENERAL

1.1 DESCRIPTION

A. Scope:
   1. CONTRACTOR shall provide all labor, materials, equipment, and incidentals as shown, specified, and required to furnish and install ductile iron pipe and fittings.
   2. The extent of ductile iron pipe to be furnished is shown on the Drawings and in the schedules included in Section 15051, Buried Piping Installation.

B. Definition: Where cast iron pipe is specified, the term and symbol shall mean ductile iron pipe.

C. Related Work Specified Elsewhere:
   1. Section 02200, Earthwork.
   2. Section 11295, Hydraulic Valves.
   3. Section 15050, Piping Systems.
   4. Section 15051, Buried Piping Installation.

1.2 QUALITY ASSURANCE

A. Manufacturer Qualifications: Manufacturer shall have a minimum of five years of experience in the production of ductile iron pipe and fittings and shall show evidence of satisfactory service in at least five installations.

B. Unless otherwise specified, references to documents shall mean the documents in effect at the time of Advertisement for Bids or Invitation to Bid (or on the effective date of the Agreement if there were no Bids). If referenced documents have been discontinued by the issuing organization, references to those documents shall mean the replacement documents issued or otherwise identified by that organization or, if there are no replacement documents, the last version of the document before it was discontinued. Where document dates are given in the following listing, references to those documents shall mean the specific document version associated with that date, whether or not the document has been superseded by a version with a later date, discontinued, or replaced.
   1. ANSI B16.1 - Cast Iron Pipe Flanges and Flanged Fittings Class 25, 125, 250, and 800.
   2. ANSI B16.5 - Pipe Flanges and Flanged Fittings.
   3. ASTM C150 - Portland Cement.
   4. AWWA C104 (ANSI A21.4) - Cement Mortar Lining for Ductile Iron and Gray Iron Pipe and Fittings for Water.

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5. AWWA C105 (ANSI A21.5) - Polyethylene Encasement for Ductile Iron Piping for Water and Other Liquids.
6. AWWA C110 (ANSI A21.10) - Ductile Iron and Gray Iron Fittings, 3" Through 48", for Water and Other Liquids.
7. AWWA C111 (ANSI A21.11) - Rubber Gasket Joints for Ductile Iron and Gray Iron Pressure Pipe and Fittings.
8. AWWA C115 (ANSI A21.15) - Flanged Ductile Iron and Gray Iron Pipe with Threaded Flanges.
9. AWWA C150 (ANSI A21.50) - Thickness Design of Ductile Iron Pipe.
10. AWWA C151 (ANSI A21.51) - Ductile Iron Pipe, Centrifugally Cast, in Metal Molds or Sand-Lined Molds, for Water or Other Liquids.
11. AWWA C153 (ANSI A21.53) - Ductile Iron Compact Fittings, 3" Through 12" for Water and Other Liquids.
12. AWWA C600 - Installation of Ductile Iron Water Mains and Their Appurtenances.
13. AWWA C606 - Grooved and Shouldered Type Joints.
14. MAG - Uniform Standard Specifications and Details for Public Work Construction.
15. City of Chandler Unified Standard Specifications.

1.3 SUBMITTALS

A. Shall be in accordance with Section 15050, Piping Systems, submittal information.

B. Each Shop Drawing submittal shall include a copy of the relevant Specification Section. Each and every paragraph of the Specification Section shall be clearly marked to indicate whether the requirements for equipment and/or services in the Specification Section are met. If clarifications are needed to any of the paragraphs in the Specification Section, they shall be addressed next to the paragraph or in an attached letter as such and explained further with any additional information necessary. If any exceptions and/or deviations are proposed to any of the Specifications, they shall be clearly noted as such in the submittal, and an explanation of any deviation and/or exception shall be provided. The CONTRACTOR shall furnish equipment and/or services as specified if an exception and/or deviation is rejected

PART 2 - PRODUCTS

2.1 GENERAL

A. Pipe design, materials, and manufacturer shall comply with the following documents:

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ITEM	DOCUMENT
Thickness Design	AWWA C150
Manufacturing Requirements: Water or Other Liquid	AWWA C151
Gravity Service Pipe	ASTM A716
Joints: Rubber Gasket Threaded Flange	AWWA C111 AWWA C115
Fittings: Water or Other Liquid	AWWA C110/AWWA C153
Cement Mortar Lining	AWWA C104
Polyethylene Encasement	AWWA C105

2.2 PIPE

A. Unless otherwise specified, ductile iron pipe shall be Pressure Class 250 for below ground installations and Special Thickness Class 53 for above ground, and have nominal laying length of 18 feet.

B. For grooved end pipe or flanged end, wall thickness shall be minimum Class 53, except where the specified pressure requires heavier pipe.

C. All ductile iron pipes shall conform to the requirements of MAG Standard Specification Section 750 "Iron Water Pipe and Fittings."

D. All ductile iron pipes shall be manufacturers as listed within the City of Chandler Approved Product List.

2.3 GASKETS

A. Unless otherwise specified, gasket stock shall be a synthetic rubber compound in which the elastomer is nitrile or neoprene.

B. The compound shall contain not less than 50% by volume nitrile or neoprene and shall be free from factice, reclaimed rubber, and other deleterious substances.

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C. Gaskets shall comply with AWWA C111 for push-on and mechanical joints, and with AWWA C606 for grooved end joints.

D. For high temperature gaskets refer to section 15050, Piping Systems.

2.4 FITTINGS

A. Parent pipe and branch outlets shall be centrifugally cast ductile iron pipe designed in accordance with ANSI/AWWA C150/A21.50 and manufactured in accordance with ANSI/AWWA C151/A21.51. Minimum class shall be Thickness Class 53.

B. Ends shall be flanged, restrained mechanical joint, or restrained push-on to suit the condition specified, except for transmission mains where indicated otherwise on the Drawings.

C. The AWWA C153 compact ductile iron fittings in sizes 3-inches through 12-inches are an acceptable substitute for standard fittings, unless otherwise specified.

D. Long radius elbows shall be provided where specified.

E. Welded-on outlets shall be limited to branch outlets having a nominal diameter less than 70% of the nominal diameter of the main line pipe (maximum size of 30-inches). Welded-on outlets may be provided for tees, tangential outlets, or lateral outlets fabricated at a specific angle to the main line pipe as shown on the Drawings. Welded-on outlets shall be fabricated by the pipe manufacturer at the same facility where the pipe is produced. The pipe cement mortar lining shall only be applied or repaired after the outlet has been welded on at the manufacturing facilities where the pipe is produced. The pipe manufacturer shall have a minimum of five years experience in the fabrication and testing of outlets of similar size and configuration as shown on the Drawings or specified herein.

F. Weldment for welded-on outlets shall be based on the method described in Section VII of the ASME Unified Pressure Vessel Code. Reinforcing welds shall be placed using Ni-Rod FC 55 cored wire or Ni-Rod 55 electrodes manufactured by INCO Alloys (or an electrode with equivalent performance properties). Carbon steel electrodes are not acceptable.

G. All ductile iron pipe fittings shall be as manufactured by the same manufacturer as the ductile iron pipe.

2.5 JOINTS

A. Push-On Joints:
   1. Push-on joints shall be the rubber ring compression type suitable for buried service. Unrestrained push-on joints shall be Fastite Joint as manufactured by American Cast Iron Pipe Company, the Tyton Joint as manufactured by U.S. Pipe, or equal. This joint is not permitted on fittings or specials, unless otherwise specified. Push-on joints shall have an allowable deflection of up to

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5 degrees at specified pressures. Joint assembly and field cuts shall be made in strict conformance with AWWA C600 and pipe manufacturer's recommendations.

B. Flange Assemblies:
   1. Unless otherwise specified, flanges shall be ductile iron and shall be threaded-on flanges conforming to ANSI/AWWA A21.15/C115 or cast-on flanges conforming ANSI/AWWA A21.10/C110.
   2. Flanges shall be adequate for 250 psi working pressure.
   3. Bolt circle and bolt holes shall match those of ANSI B16.1, Class 125 flanges and ANSI B16.5, Class 150 flanges.
   4. Where specified, flanges shall be threaded-on or cast-on flanges conforming to ANSI B16.1, Class 250.
   5. Unless otherwise specified, bolts and nuts for flange assemblies shall conform with the requirements of Section 15120, Piping Specialties and Accessories. Gaskets shall be as specified with the requirements of Section 15120, Piping Specialties and Accessories.

C. Mechanical Joints:
   1. Where specified, restrained mechanical joints shall be the positive restraint type. Mechanical joints with retainer glands are not acceptable.
   2. Locked mechanical hydrant tees, bends, and adapters are an acceptable substitute for anchoring fire hydrants and valves to the pipe main.

D. Restrained Joints:
   1. Unless otherwise specified, restrained joints shall be flanged or grooved end for exposed service and push-on or grooved end for buried service. Restrained pipe shall be applied the entire length of pipe as shown on the Construction Drawings.
   2. Restrained joints for pipe shall be:
      a. TR Flex Gripper Ring and TR Flex joint products with exact specifications as manufactured by US Pipe
      b. American Fast Grip and Flex-Ring joint as manufactured by American Cast Iron Pipe Company
      c. MEGALUG Ductile Iron Pipe Restraints as manufactured by EBAA Iron Inc.
      d. Or equal.
   3. Restrained joints for fittings shall be:
      a. Series 1100 megalug restraint produced by EBAA Iron, Inc.
      b. Series 3000-30000S Stargrip by Star Pipe Products
      c. Sigma DIP One Lok SLDE Series
      d. Tyler Union Tuf Grip Restraint
   4. Restrained joints shall be capable of being deflected after full assembly.
   5. Joint assembly shall be in strict conformance with AWWA C600 and manufacturer's recommendations.
   6. No field cuts of restrained pipe are permitted without prior approval of the Construction Manager.

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E. Bolts and Nuts:
   1. Corrosion-resistant bolts and nuts for use with ductile iron joints shall be high-strength, low-alloy steel as specified in ANSI/AWWA C111/A21.11.
   2. Below grade installations require type 316 stainless steel.

2.6 PIPE COATING

A. Unless otherwise specified, pipe and fittings shall be coated with asphaltic material as specified in AWWA C151.

B. Polyethylene Encasement:
   1. All buried ductile iron pipe and fittings shall be wrapped with polyethylene film in tube form as specified in AWWA C105 and MAG Section 610.

2.7 PIPE LINING

A. Cement mortar lining.

B. Unless otherwise specified, interior surfaces of pipe and fittings shall be cement mortar lined in accordance with AWWA C104.

C. Cement shall be ASTM C150, Type II or V, low alkali, containing less than 0.60% alkalies.

PART 3 - EXECUTION

3.1 INSTALLATION

A. General:
   1. Piping runs specified on the Drawings shall be followed as closely as possible. Proposed deviations shall be submitted in accordance with Section 01300, Submittals.
   2. Pipe shall be installed in accordance with AWWA C600 and MAG Section 610.

B. Insulating Sections:
   1. Where a metallic non-ferrous pipe or appurtenance is connected to ferrous pipe or appurtenance, an insulating section shall be provide.

C. Anchorage:
   1. Anchorage shall be provided as specified. Calculations and Drawings for proposed alternative anchorage shall be submitted in accordance with Section 01300, Submittals.

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3.2 ACCEPTANCE TESTING

A. Hydrostatic pressure tests shall be conducted in accordance with Section 4 of AWWA C600, except that test pressures and allowable leakage shall be as listed in Section 15050, Piping Systems.

B. The CONTRACTOR shall conduct the tests in the presence of the ENGINEER and/or OWNER.

C. All welded-on outlets shall be rated for a working pressure of 250 psi and must have a minimum safety factor of 2.0 based on proof of design hydrostatic test results.

D. Prior to the application of any coating or lining in the outlet area all weldments for branch outlets to be supplied on this project shall be subject to an air pressure test of at least 15 psi. Air leakage is not acceptable. Any leakage shall be detected by applying an appropriate soapy water solution to the entire exterior surface of the weldment and adjoining pipe edges or by immersing the entire area in a vessel of water and visually inspecting the weld surface for the presence of air bubbles. Any weldment that shows signs of visible leakage shall be repaired and retested in accordance with the manufacturer's written procedures.

3.3 POLYETHYLENE TUBE

A. Polyethylene encasement shall be used on all buried ductile iron pipe, unless otherwise specified. Installation of polyethylene shall be as specified in MAG Section 610 and these Specifications. Pipe, fittings, valves, and couplings shall be wrapped. Fittings that require concrete backing shall be wrapped prior to placing the concrete.

B. The polyethylene tube seams and overlaps shall be wrapped and held in place by means of a 2-inch wide plastic backed adhesive tape. The tape shall be Polyken No. 900 (polyethylene), Scotchwrap No. 50 (polyvinyl), or equal. The tape shall be such that the adhesive shall bond securely to both metal surfaces and polyethylene film. Bedding and initial backfill for polyethylene wrapped pipe shall be a well-graded granular material which will not cut or damage the polyethylene tube during placement and backfilling. Sharp angular material over 0.5-inches shall not be used with polyethylene encasement.

++ END OF SECTION ++

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SECTION 15120

PIPING SPECIALTIES AND ACCESSORIES

PART 1 - GENERAL

1.1 DESCRIPTION

A. Scope:
   1. CONTRACTOR shall provide all labor, materials, equipment, and incidentals as shown, specified, and required to furnish and install all piping specialties and accessories. Included, but not limited to, are flexible couplings, mechanical couplings, flanged adapters, expansion joints, saddle taps.

B. Related Work Specified Elsewhere:
   1. Division 15, Mechanical, Sections on piping and piping systems.

1.2 QUALITY ASSURANCE

A. Manufacturer's Qualifications:
   1. Manufacturer shall have a minimum of five years of experience in the production of substantially similar types of piping specialties specified and shall show evidence of satisfactory service in at least five installations.
   2. Each type of piping specialty and accessory shall be the product of one manufacturer.

1.3 SUBMITTALS

A. Descriptive submittals shall be made in accordance with Section 01300, Submittals.

B. Coordinate these with Shop Drawings required for the piping systems.

C. Each Shop Drawing submittal shall include a copy of the relevant Specification Section. Each and every paragraph of the Specification Section shall be clearly marked to indicate whether the requirements for equipment and/or services in the Specification Section are met. If clarifications are needed to any of the paragraphs in the Specification Section, they shall be addressed next to the paragraph or in an attached letter as such and explained further with any additional information necessary. If any exceptions and/or deviations are proposed to any of the Specifications, they shall be clearly noted as such in the submittal, and an explanation of any deviation and/or exception shall be provided. The CONTRACTOR shall furnish equipment and/or services as specified if an exception and/or deviation is rejected.

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1.4 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Refer to Division 15, Mechanical, Sections on piping and piping systems.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Couplings: Unless otherwise specified, piping 2-inches in diameter and larger passing from concrete to earth shall be provided with two pipe couplings or flexible joints as specified within 2 feet or one pipe diameter of the structure, whichever is greater.
   1. Below-Grade Restrained Type Coupling:
      a. Pressure and Service: Same as connected piping.
      b. Material: ASTM A536 Ductile Iron.
      c. Gasket: Suitable for water service and specification 15050.
      d. Bolts and Nuts: Type 316 stainless steel bolts and nuts.
      e. Product and Manufacturer:
         1) Per City of Chandler Approved Product List.
         2) No approved equal.
   2. Sleeve Type, AC/DIP Transition Couplings:
      a. Pressure and Service: Same as connected piping.
      b. Material: Carbon steel for carbon steel and exposed ductile iron piping systems, or stainless steel for stainless steel and buried or submerged ductile iron piping systems.
      c. Gasket: Suitable for water service – NSF 61 Certified.
      d. Bolts and Nuts: Alloy steel, corrosion-resistant, prime coated. Buried couplings shall have Type 316 stainless steel bolts and nuts.
      e. Harnessing:
         1) Harness couplings to restrain pressure piping. Test pressures for pressure pipelines shall conform to the requirements of Section 15050, Piping Systems.
         2) Adjacent flanges shall be tied with bolts of corrosion resistant alloy steel. Provide flange mounted stretcher bolt plates as shown on the Drawings and to be designed by manufacturer, unless otherwise approved by the ENGINEER.
         3) Conform to dimensions, size, spacing and materials for lugs, bolts, washers and nuts as recommended by manufacturer and approved by ENGINEER for the pipe size, wall thickness and test pressure required. However, the following minimum bolting shall be provided, unless otherwise approved by the ENGINEER.

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Pipe Diameter (Inches)	Number of Bolts	Bolt Diameter (Inches)	At (Degrees)
4	2	5/8	180
6-8	2	3/4	180
10-12	2	7/8	180 or 250
14-20	4	1	190
24-48	4	1	90
54	4	1	250
60	4	1-1/4	90

f. Remove pipe stop, unless otherwise shown on the Drawings or specified.
g. Product and Manufacturer: Provide one of the following:
   1) Type 501, Romac Industries.
   2) Or equal.

3. Flanged Adapters:
   a. Description: One end of adapter shall be flanged and the other end shall have a sleeve type flexible coupling.
   b. Pressure and Service: Same as connected piping.
   c. Material: Cast iron or steel.
   d. Gasket: Suitable for wastewater service, and can withstand the specified temperature. EPDM gaskets for 250° F air service. Specification 15050.
   e. Bolts and Nuts: Type 316 stainless steel.
   f. Harnessing:
      1) Harness adapters to restrain pressure piping. Test pressures for pressure pipe lines are included in the piping schedules in Section 15051, Buried Piping Installation, and section 15052, Exposed Piping Installation.
      2) For adapters 12-inch diameter and less, provide 1/2-inch minimum stainless steel anchor studs installed in a pressure tight anchor boss. Provide number of studs required to restrain test pressure and service conditions. Harness shall be as designed and recommended by manufacturer; however, the following minimum anchor studs shall be provided, unless otherwise approved by ENGINEER.
         a) 6-inch Diameter and Less: Two.
         b) 8-inch Diameter and Less: Four.
         c) 10-inch Diameter and Less: Six.
         d) 12-inch Diameter and Less: Eight.

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3) For adapters larger than 12-inch diameter, provide split-ring harness clamps with a minimum of four Type 316 stainless steel bolts. Harness assembly shall be as designed and recommended by manufacturer. Dimensions, sizes, spacing, and materials shall be suitable for service and conditions encountered and shall be approved by ENGINEER.
4) Harness couplings to restrain pressure piping.
5) Test pressures for pressure pipe lines are included in Section 15051, Buried Piping Installation, and Section 15052, Exposed Piping Installation.
6) Harnessing shall conform to the details shown on the Drawings.

g. Product and Manufacturer: Provide one of the following:
1) Style FCA501, as manufactured by Romac Industries.
2) Style 128, as manufactured by Dresser.
3) Or approved equal.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install piping specialties and accessories in accordance with manufacturer's instructions.

B. Make adjustments to expansion joints as required to ensure that they will be fully extended when the ambient temperature is at minimum operating temperature and fully compressed at maximum operating temperature for the system in which they are installed.

++ END OF SECTION ++

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EXHIBIT D

GIS / GPS DATA DELIVERY REQUIREMENTS

Docusign Envelope ID: 4892B4B0-D834-4BFD-BC27-BAA8C2BD00BC

GIS / GPS Data Delivery Requirements

Contractor shall provide survey grade GPS / GIS data, meeting the following requirements for all facilities to be owned and/or operated by the City of Chandler.

a) ESRI File Geodatabase format:

All GPS point data, along with corresponding GIS Attribute data, must be submitted in ESRI File Geodatabase format. The City of Chandler will provide a copy of the File Geodatabase in ESRI ArcGIS format. Please submit your request through the Project Manager.

b) Data dictionary and Attribute data:

Attribute data should be provided for each of the GPS'd Utility Features listed in Section 'd' below. All Attribute data should conform to the ESRI File Geodatabase format, provided by the City. A copy of the data dictionary is also attached here for reference.

c) Coordinate System:

Horizontal Datum: Arizona State Plane Coordinates, Central Zone NAD83 (HARN)
Vertical Datum: NAVD88

d) Point Data for GPS:

1) Water System Features:
- Water main location (top of pipe), size and material (one (1) coordinate provided every 100 feet minimum) and at fittings.
- Water fitting location (top of feature), size, material and type including: Bend (22.5, 45, or 90), Tee, Tapping Sleeve, Cross, Coupling, End Cap, Line Stop, Reducer, Saddle, Other.
- Water valve location (center of valve box cover), size and type.
- Fire hydrant location (top of hydrant), manufacturer and year.
- Water service line location (at connection to main, any bends, and termination at meter box or meter vault or at the edge of easement or ROW), size and material.
- Water blow-off and air release valve location (center of cover), size, type and manufacturer.
- Water manhole or vault location (center of cover), size and type.

2) Waste Water System Features:
- Sewer manhole and cleanout location (center of cover), size, material, and cover type.
- Sewer gravity main location (invert of pipe), size, material and flow direction (from) at all manholes, cleanouts and structures.
- Sewer service line location, size and material (at connection to main, and termination at cleanout, or stub out at edge of the easement or ROW).
- Sewer force main location (top of pipe), size, and material (one (1) coordinate provided every 100 feet minimum) and at fittings.

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- Sewer force main (and gravity) fitting location (top of feature), size, material and type including: Bend (22.5, 45, or 90), Tee, Tapping Sleeve, Cross, Coupling, End Cap, Linestop, Reducer, Saddle, Wye, Other
- Sewer force main valve location (center of valve box cover), size and type.
- Sewer force main air release valve location (center of cover), size, type and manufacturer.
- Sewer force main manhole or vault location (center of cover), size and material.
- Sewer structure (center of structure), type (diversion, junction box).

3) Reclaimed Water System Features:
   - Reclaimed main location (top of pipe), size, and material (one (1) coordinate provided every 100 feet minimum) and at fittings.
   - Reclaimed fitting location (top of feature), size, material and type including: Bend (22.5, 45, or 90), Tee, Tapping Sleeve, Cross, Coupling, End Cap, Linestop, Reducer, Saddle, Other.
   - Reclaimed valve location (center of valve box cover), size and type.
   - Reclaimed service line location (at connection to main, any bends, and termination at meter box or meter vault or at the edge of easement or ROW), size and material.
   - Reclaimed blow-off and air release valve location (center of cover), size, type and manufacturer.
   - Reclaimed manhole or vault location (center of cover), size and type.

4) Storm Water System Features:
   - Storm manhole and cleanout location (center of cover), size, material, and cover type.
   - Storm gravity main location (invert of pipe), size, material, and flow direction (from) at all manholes, cleanouts and structures.
   - Storm structure location (center of structure), type and category including: Drywell, Catch Basin, Scupper, Bubbler Box, and Collection Vault.

5) Streetlight Feature:
   - Streetlights

6) Standard GPS Metadata on all points collected: Date, Time, Horizontal Accuracy, Vertical Accuracy, Latitude, Longitude, Altitude, Surveyor, and Comments.

7) Electronic Data Submittal: Each submittal must consist of
   - ESRI – ArcGIS Geodatabase with cumulative data and attributes
   - Construction plans with collected utilities clearly redlined and changes marked

   The frequency of data submittals will be every two weeks after water, sewer, reclaim or storm assets go into the ground. Please email submittals to: GIS@chandleraz.gov

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DATA DICTIONARY: WATER

WATER_BACKFLOW				
Field Name	**Alias Name**	**Type**	**Length**	**Domain**
OBJECTID	OBJECTID	OID		
SHAPE	SHAPE	Geometry		
FEATUREOWNER	FEATUREOWNER	Text	25	GIS_BACKFLOW_FEATUREOWNER
LIFECYCLESTATUS	LIFECYCLESTATUS	Text	25	GIS_BACKFLOW_LIFECYCLESTATUS
SPATIALSOURCE	SPATIALSOURCE	Text	25	GIS_BACKFLOW_SPATIALSOURCE
SIZE	SIZE	Double		
TYPE	TYPE	Text	25	GIS_BACKFLOW_TYPE
MANUFACTURER	MANUFACTURER	Text	25	GIS_BACKFLOW_MANUFACTURER
GPS_DATE	GPS_DATE	Date		
GPS_TIME	GPS_TIME	Text	15	
LATITUDE	LATITUDE	Double		
LONGITUDE	LONGITUDE	Double		
ALTITUDE	ALTITUDE	Double		
HORIZONTAL_ACCURACY	HORIZONTAL_ACCURACY (m)	Double		
VERTICAL_ACCURACY	VERTICAL_ACCURACY (m)	Double		
GPS_COMMENT	GPS_COMMENT	Text	30	

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WATER_FITTING				
Field Name	**Alias Name**	**Data Type**	**Length**	**Domain**
OBJECTID	OBJECTID	OID		
SHAPE	SHAPE	Geometry		
FEATUREOWNER	FEATUREOWNER	Text	20	WS_FEATUREOWNER
LIFECYCLESTATUS	LIFECYCLESTATUS	Text	20	WS_LIFECYCLESTATUS
SPATIALSOURCE	SPATIALSOURCE	Text	20	WS_SPATIALSOURCE_STD
MATERIAL	MATERIAL	Text	20	WS_FITTING_MATERIAL
DIAMETER1	DIAMETER1	Text	8	RWS_FITTING_DIAMETER
DIAMETER2	DIAMETER2	Text	8	RWS_FITTING_DIAMETER
TYPE	TYPE	Text	30	WS_FITTING_TYPE
BEND	BEND	Text	20	WS_FITTING_BEND
GPS_DATE	GPS_DATE	Date		
GPS_TIME	GPS_TIME	Text	10	
LATITUDE	LATITUDE	Double		
LONGITUDE	LONGITUDE	Double		
ALTITUDE	ALTITUDE	Double		
HORIZONTAL_ACCURACY	HORIZONTAL_ACCURACY (m)	Double		
VERTICAL_ACCURACY	VERTICAL_ACCURACY (m)	Double		
GPS_COMMENT	GPS_COMMENT	Text	30	

Docusign Envelope ID: 4892B4B0-D834-4BFD-BC27-BAA8C2BD00BC

WATER_HYDRANT				
Field Name	**Alias Name**	**Type**	**Length**	**Domain**
OBJECTID	OBJECTID	OID		
SHAPE	SHAPE	Geometry		
FEATUREOWNER	Feature Owner	Text	25	WS_FEATUREOWNER
LIFECYCLESTATUS	Lifecycle Status	Text	25	WS_LIFECYCLESTATUS
SPATIALSOURCE	Spatial Source	Text	25	WS_SPATIALSOURCE_STD
BARRELDIAMETER	Barrel Diameter	Double		
LARGENOZZLEDIAMETER	Large Nozzle Diameter	Double		
SMALLNOZZLEDIAMETER	Small Nozzle Diameter	Double		
OUTLETCONFIGURATION	Outlet Configuration	Double		
SEATDIAMETER	Seat Diameter	Double		
MANUFACTURER	Manufacturer	Text	25	WS_HYD_MANUFACTURER
YEARMANUFACTURED	Manufacture Year	Text	25	
HASLOCK	Has Lock ?	Text	25	GIS_BOOLEAN_YES_NO
COLOR	Color	Text	25	WS_HYD_COLOR
GPS_DATE	GPS_DATE	Date		
GPS_TIME	GPS_TIME	Text	25	
LATITUDE	LATITUDE	Double		
LONGITUDE	LONGITUDE	Double		
ALTITUDE	ALTITUDE	Double		
HORIZONTAL_ACCURACY	HORIZONTAL_ACCURACY (m)	Double		
VERTICAL_ACCURACY	VERTICAL_ACCURACY (m)	Double		
GPS_COMMENT	GPS_COMMENT	Text	50	

Docusign Envelope ID: 4892B4B0-D834-4BFD-BC27-BAA8C2BD00BC

WATER_MANHOLE				
Field Name	**Alias Name**	**Type**	**Length**	**Domain**
OBJECTID	OBJECTID	OID		
SHAPE	SHAPE	Geometry		
FEATUREOWNER	FEATUREOWNER	Text	20	WS_FEATUREOWNER
LIFECYCLESTATUS	LIFECYCLESTATUS	Text	20	WS_LIFECYCLESTATUS
SPATIALSOURCE	SPATIALSOURCE	Text	20	WS_SPATIALSOURCE_STD
ACCESSDIAMETER	ACCESSDIAMETER	Text	8	
ACCESSTYPE	ACCESSTYPE	Text	20	
GROUNDTYPE	GROUNDTYPE	Text	20	WS_SYSVAL_GROUNDTYPE
COVERMATERIAL	COVERMATERIAL	Text	10	
COVERTYPE	COVERTYPE	Text	8	
GPS_DATE	GPS_DATE	Date		
GPS_TIME	GPS_TIME	Text	10	
LATITUDE	LATITUDE	Double		
LONGITUDE	LONGITUDE	Double		
ALTITUDE	ALTITUDE	Double		
HORIZONTAL_ACCURACY	HORIZONTAL_ACCURACY (m)	Double		
VERTICAL_ACCURACY	VERTICAL_ACCURACY (m)	Double		
GPS_COMMENT	GPS_COMMENT	Text	30	

Docusign Envelope ID: 4892B4B0-D834-4BFD-BC27-BAA8C2BD00BC

WATER_METER				
Field Name	**Alias Name**	**Type**	**Length**	**Domain**
OBJECTID	OBJECTID	OID		
SHAPE	SHAPE	Geometry		
FEATUREOWNER	Feature Owner	Text	20	GBA_WMSL_FEATUREOWNER
LIFECYCLESTATUS	Lifecycle Status	Text	25	GBA_WMSL_LIFECYCLESTATUS
SPATIALSOURCE	Spatial Source	Text	25	GBA_STATIC_SPATIALSOURCE
DIAMETER	DIAMETER	Double		WS_METER_DIAM
MANUFACTURER	Manufacturer	Text	25	WS_METER_MANUFACTURER
METERTYPE	Meter Type	Text	25	WS_METER_TYPE
GPS_DATE	GPS_DATE	Date		
GPS_TIME	GPS_TIME	Text	15	
LATITUDE	LATITUDE	Double		
LONGITUDE	LONGITUDE	Double		
ALTITUDE	ALTITUDE	Double		
HORIZONTAL_ACCURACY	HORIZONTAL_ACCURACY (m)	Double		
VERTICAL_ACCURACY	VERTICAL_ACCURACY (m)	Double		
GPS_COMMENT	GPS_COMMENT	Text	30	

Docusign Envelope ID: 4892B4B0-D834-4BFD-BC27-BAA8C2BD00BC

WATER_SYSTEM_VALVE				
Field Name	**Alias Name**	**Type**	**Length**	**Domain**
OBJECTID	OBJECTID	OID		
SHAPE	SHAPE	Geometry		
FEATUREOWNER	FEATURE OWNER	Text	20	WS_SYSVAL_FEATUREOWNER
LIFECYCLESTATUS	LIFECYCLE STATUS	Text	20	WS_SYSVAL_LIFECYCLESTATUS
SPATIALSOURCE	SPATIAL SOURCE	Text	20	WS_SYSVAL_SPATIALSOURCE
TYPE	TYPE	Text	25	WS_SYSVAL_TYPE
VALVETYPE	VALVE TYPE	Text	10	WS_SYSVAL_VALVETYPE
FUNCTION	FUNCTION	Text	25	WS_SYSVAL_FUNCTION
GROUNDTYPE	GROUNDTYPE	Text	25	WS_SYSVAL_GROUNDTYPE
DIAMETER	Diameter	Text	8	WS_SYSVAL_DIAM
GPS_DATE	GPS DATE	Date		
GPS_TIME	GPS TIME	Text	10	
LATITUDE	LATITUDE	Double		
LONGITUDE	LONGITUDE	Double		
ALTITUDE	ALTITUDE	Double		
HORIZONTAL_ACCURACY	HORIZONTAL_ACCURACY (m)	Double		
VERTICAL_ACCURACY	VERTICAL_ACCURACY (m)	Double		
GPS_COMMENT	GPS COMMENT	Text	30	

Docusign Envelope ID: 4892B4B0-D834-4BFD-BC27-BAA8C2BD00BC

Water Domains:

Domain name	WS_LIFECYCLESTATUS
ABANDONED	ABANDONED
ACTIVE	ACTIVE
FUTURE	FUTURE
INACTIVE	INACTIVE
REMOVED	REMOVED
UNKNOWN	UNKNOWN

Domain name	WS_SYSVAL_SPATIALSOURCE
APPROVED PLANS	APPROVED PLANS
ASBUILT	ASBUILT
DESIGN	DESIGN
GPS	GPS
HYDRMAINT	HYDRMAINT
ORTHOPHOTO	ORTHOPHOTO
TM7	TM7
UNKNOWN	UNKNOWN

Domain name	WS_HYD_MANUFACTURER
AMERICANDARLING	AMERICANDARLING
AVK	AVK
CLOW	CLOW
DRESSER	DRESSER
GREENBERG	GREENBERG
KENNEDY	KENNEDY
MUELLER	MUELLER
PACIFIC	PACIFIC
UNKNOWN	UNKNOWN
WATEROUS	WATEROUS

Domain name	WS_FEATUREOWNER
COC	Chandler
COG	Gilbert
COM	Mesa
COP	Phoenix
COT	Tempe
COUNTY	Maricopa County
GOULD	Gould
GRIC	GRIC
INTEL	Intel
MICROCHIP	Microchip
MOTOROLA	Motorola
PRIVATE	Private
SRP	SRP
SRVWUA	SRVWUA
UNKNOWN	UNKNOWN

Domain name	WS_SYSVAL_LIFECYCLESTATUS
FUTURE	FUTURE
UNKNOWN	UNKNOWN
INACTIVE	INACTIVE
ACTIVE	ACTIVE
REMOVED	REMOVED
ABANDONED	ABANDONED

Docusign Envelope ID: 4892B4B0-D834-4BFD-BC27-BAA8C2BD00BC

Domain name	WS_FITTING_BEND
HORIZONTAL	HORIZONTAL
VERTICAL	VERTICAL

Domain name	WS_SYSVAL_DIAM
2	2
3	3
4	4
6	6
8	8
10	10
12	12
16	16
20	20
24	24
30	30
36	36
42	42
48	48
54	54

Domain name	WS_HYD_COLOR
0	YELLOW
1	BLACK/YELLOW
2	RED
3	UNKNOWN

Domain name	WS_FITTING_TYPE
11B	11B
22B	22B
45B	45B
90B	90B
COUPLING	COUPLING
CROSS	CROSS
ENDCAP	ENDCAP
LINESTOP	LINESTOP
OTHER	OTHER
REDUCER	REDUCER
SADDLE	SADDLE
TAPPING SLEEVE	TAPPING SLEEVE
TEE	TEE
UNKNOWN	UNKNOWN
WYE	WYE

Domain name	WS_SYSVAL_GROUNDTYPE
CONCRETE	CONCRETE
ASPHALT	ASPHALT
LANDSCAPE	LANDSCAPE
UNKNOWN	UNKNOWN

Domain name	WS_SPATIALSOURCE_STD
ASBUILT	ASBUILT
DESIGN	DESIGN
FIELD	FIELD
GPS	GPS
ORTHOPHOTO	ORTHOPHOTO
UNKNOWN	UNKNOWN

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Domain name	WS_METER_DIAM
0.63	.63
0.75	.75
1	1
1.5	1.5
2	2
2.5	2.5
3	3
4	4
6	6
8	8
10	10

Domain name	WS_METER_MANUFACTURER
BADGER METERS	BADTER METERS
NEPTUNE METERS	NEPTUNE METERS
PRECISION METERS	PRECISION METERS
BADGER-NEPTUNE	BADGER-NEPTUNE
SENSUS	SENSUS

Domain name	WS_METER_TYPE
BYPASS	BYPASS
COMBO	COMBO
CMPND	CMPND
DISC	DISC
MAG	MAG
FDTEC	FDTEC
MLTJET	MLTJET
TURBIN	TURBIN
Ultrasonic	Ultrasonic

S

Domain name	WS_SYSVAL_FEATUREOWNER
COC	COC
PRIVATE	PRIVATE
COM	COM
MOTOROLA	MOTOROLA
INTEL	INTEL
UNKNOWN	UNKNOWN
TOG	TOG

Domain name	WS_FITTING_MATERIAL
DI	DI
PVC	PVC
BRASS	BRASS
STL	STL
COPPER	COPPER
AC	AC
CC	CC
CI	CI

Domain name	WS_SYSVAL_TYPE
STANDARD	STANDARD
BLOWOFF	BLOWOFF
ARV	ARV
AIR VACUUM	AIR VACUUM
PERMASEAL	PERMASEAL

Domain name	GBA_WMSI_LIFECYCLESTATUS
Operational	Operational
Empty	Empty
Out of Service	Out of Service
Abandoned	Abandoned

Docusign Envelope ID: 4892B4B0-D834-4BFD-BC27-BAA8C2BD00BC

Domain name	WS_SYSVAL_FUNCTION
INLINE	INLINE
HYDRANT	HYDRANT
STUBOUT	STUBOUT
UNKNOWN	UNKNOWN
SERVICE	SERVICE
BYPASS	BYPASS
WPF	WPF
FDC	FDC
VAULT	VAULT
BACKFLOW	BACKFLOW
PUMPOUT	PUMPOUT
PUMPSTATION	PUMPSTATION
FIRELINE	FIRELINE
ARV	ARV
ZONE_SPLIT_VALVES	ZONE_SPLIT_VALVES

Domain name	GIS_BACKFLOW_FEATUREOWNER
COC	COC
PRIVATE	PRIVATE
CONTRACTOR	CONTRACTOR
INTEL	INTEL
OCA	OCA
OMG	OMG
TOG	TOG
UNKNOWN	UNKNOWN

Domain name	WS_SYSVAL_VALVETYPE
GATE	GATE
BUTTERFLY	BUTTERFLY
BALL	BALL
PLUG	PLUG
PIV	PIV
UNKNOWN	UNKNOWN
INSERTA	INSERTA

Domain name	GIS_BACKFLOW_MANUFACTURER
FEBCO	FEBCO
WATTS	WATTS
WILKINS	WILKINS
AMES	AMES
CONBRACO	SERVICE
HERSEY	HERSEY
RAIN BIRD	RAIN BIRD
APOLLO VALVES	APOLLO VALVES
METRON	METRON
OTHER	OTHER

Domain name	GIS_BACKFLOW_TYPE
Air Gap	Air Gap
Unknown	Unknown
Double Check Detector	Double Check Detector
Pressure Vacuum Breaker	Pressure Vacuum Breaker
Double Check	Double Check
Reduced Pressure Detector	Reduced Pressure Detector
Atmoshpheric Vacuum Breaker	Atmoshpheric Vacuum Breaker

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DATA DICTIONARY: SEWER

SEWER CLEANOUT				
Field Name	**Alias Name**	**Type**	**Length**	**Domain**
OBJECTID	OBJECTID	OID		
SHAPE	SHAPE	Geometry		
FEATUREOWNER	FEATUREOWNER	Text	20	WW_FEATUREOWNER
LIFECYCLESTATUS	LIFECYCLESTATUS	Text	20	WW_LIFECYCLESTATUS
SPATIALSOURCE	SPATIALSOURCE	Text	20	WW_SPATIALSOURCE
RIM_ELEV	RIM_ELEV	Double		
INV_ELEV	INV_ELEV	Double		
GPS_DATE	GPS_DATE	Date		
GPS_TIME	GPS_TIME	Text	10	
LATITUDE	LATITUDE	Double		
LONGITUDE	LONGITUDE	Double		
ALTITUDE	ALTITUDE	Double		
HORIZONTAL_ACCURACY	HORIZONTAL_ACCURACY (m)	Double		
VERTICAL_ACCURACY	VERTICAL_ACCURACY (m)	Double		
GPS_COMMENT	GPS_COMMENT	Text	30	

Docusign Envelope ID: 4892B4B0-D834-4BFD-BC27-BAA8C2BD00BC

SEWER CONTROL VALVE				
Field Name	**Alias Name**	**Type**	**Length**	**Domain**
OBJECTID	OBJECTID	OID		
SHAPE	SHAPE	Geometry		
FEATUREOWNER	FEATUREOWNER	Text	20	WW_FEATUREOWNER
LIFECYCLESTATUS	LIFECYCLESTATUS	Text	20	WW_LIFECYCLESTATUS
SPATIALSOURCE	SPATIALSOURCE	Text	20	WW_SPATIALSOURCE
TYPE	TYPE	Text	25	WW_CONTROL_VALVE_TYPE
DIAMETER	DIAMETER	Text	8	
GPS_DATE	GPS_DATE	Date		
GPS_TIME	GPS_TIME	Text	10	
LATITUDE	LATITUDE	Double		
LONGITUDE	LONGITUDE	Double		
ALTITUDE	ALTITUDE	Double		
HORIZONTAL_ACCURACY	HORIZONTAL_ACCURACY (m)	Double		
VERTICAL_ACCURACY	VERTICAL_ACCURACY (m)	Double		
GPS_COMMENT	GPS_COMMENT	Text	30	

Docusign Envelope ID: 4892B4B0-D834-4BFD-BC27-BAA8C2BD00BC

SEWER_FITTING				
Field Name	**Alias Name**	**Type**	**Length**	**Domain**
OBJECTID	OBJECTID	OID		
SHAPE	SHAPE	Geometry		
FEATUREOWNER	FEATUREOWNER	Text	20	WW_FEATUREOWNER
LIFECYCLESTATUS	LIFECYCLESTATUS	Text	20	WW_LIFECYCLESTATUS
SPATIALSOURCE	SPATIALSOURCE	Text	20	WW_SPATIALSOURCE
MATERIAL	MATERIAL	Text	20	WW_FITTING_MATERIAL
TYPE	TYPE	Text	30	WW_FITTING_TYPE
BEND	BEND	Text	20	WW_FITTING_BEND
SIZE	SIZE	Text	20	
GPS_DATE	GPS_DATE	Date		
GPS_TIME	GPS_TIME	Text	10	
LATITUDE	LATITUDE	Double		
LONGITUDE	LONGITUDE	Double		
ALTITUDE	ALTITUDE	Double		
HORIZONTAL_ACCURACY	HORIZONTAL_ACCURACY (m)	Double		
VERTICAL_ACCURACY	VERTICAL_ACCURACY (m)	Double		
GPS_COMMENT	GPS_COMMENT	Text	30	

Docusign Envelope ID: 4892B4B0-D834-4BFD-BC27-BAA8C2BD00BC

SEWER_MANHOLE				
Field Name	**Alias Name**	**Type**	**Length**	**Domain**
OBJECTID	OBJECTID	OID		
SHAPE	SHAPE	Geometry		
FEATUREOWNER	FEATUREOWNER	Text	25	WW_FEATUREOWNER
LIFECYCLESTATUS	LIFECYCLESTATUS	Text	25	WW_LIFECYCLESTATUS
SPATIALSOURCE	SPATIALSOURCE	Text	20	WW_SPATIALSOURCE
TYPE	TYPE	Text	20	WW_MH_TYPE
COVER_MATERIAL	COVER_MATERIAL	Text	25	WW_MH_COVER_MATERIAL
COVER_HOLE	COVER_HOLE	Text	25	WW_MH_COVER_HOLE
COVER_SIZE	COVER_SIZE	Text	20	WW_MH_COVER_SIZE
RIM_ELEV	RIM_ELEV	Double		
INV_ELEV	INV_ELEV	Double		
LINING	LINING	Text	255	WW_MH_LINER
WALL_MATERIAL	WALL_MATERIAL	Text	255	WW_MH_WALL_MATERIAL
GPS_DATE	GPS_DATE	Date		
GPS_TIME	GPS_TIME	Text	10	
LATITUDE	LATITUDE	Double		
LONGITUDE	LONGITUDE	Double		
ALTITUDE	ALTITUDE	Double		
HORIZONTAL_ACCURACY	HORIZONTAL_ACCURACY (m)	Double		
VERTICAL_ACCURACY	VERTICAL_ACCURACY (m)	Double		
GPS_COMMENT	GPS_COMMENT	Text	30	

Docusign Envelope ID: 4892B4B0-D834-4BFD-BC27-BAA8C2BD00BC

Sewer Domains:

Domain name	WW_FEATUREOWNER
COC	COC
PRIVATE	PRIVATE
TOG	TOG
UNKNOWN	UNKNOWN

Domain name	WW_SPATIALSOURCE
GPS	GPS
ASBUILT	ASBUILT
UNKNOWN	UNKNOWN

Domain name	WW_MH_COVER_HOLE
UNKNOWN	UNKNOWN
SEALED	SEALED

Domain name	WW_MH_LINER
CAST-IN-PLACE	CAST-IN-PLACE
CEMENTITIOUS	CEMENTITIOUS
COMPOSITE	COMPOSITE
CURED-IN-PLACE	CURED-IN-PLACE
EPOXY	EPOXY
FR PLASTIC INSERT	FR PLASTIC INSERT
FR POLYMER INSERT	FR POLYMER INSERT
INSERT	INSERT
UNKNOWN	UNKNOWN

Domain name	WW_LIFECYCLESTATUS
ABANDONED	ABANDONED
ACTIVE	ACTIVE
INACTIVE	INACTIVE
PULLED	PULLED
UNKNOWN	UNKNOWN

Domain name	WW_MH_COVER_MATERIAL
ALUMINUM	ALUMINUM
CASTIRON	CASTIRON
HDPE COMPOSITE - CAP	HDPE COMPOSITE - CAP
HDPE COMPOSITE - EJ	HDPE COMPOSITE - EJ
HDPE COMPOSITE - HD20	HDPE COMPOSITE - HD20
STEEL	STEEL
UNKNOWN	UNKNOWN

Domain name	WW_MH_COVER_SIZE
0	Unknown
4	4
6	6
8	8
22	22
24	24
26	26
28	28
30	30
32	32
38	38
48	48
60	60

Domain name	WW_MH_WALL_MATERIAL
NONE	NONE
COMPOSITE	COMPOSITE
UNKNOWN	UNKNOWN
CONCRETE	CONCRETE
POURED	POURED
TLOCK	TLOCK
PRECAST	PRECAST
BRICK	BRICK

Docusign Envelope ID: 4892B4B0-D834-4BFD-BC27-BAA8C2BD00BC

Domain name	WW_FITTING_MATERIAL
PVC	PVC
DIP	DIP
HDPE	HDPE
RCP	RCP
ACP	ACP
ABS	ABS
RUBBER	RUBBER
CONCRETE	CONCRETE
CLAY	CLAY
STEEL ENCASED VCP	STEEL ENCASED VCP
TLOCK LINE	TLOCK LINE
LINED RCP	LINED RCP
PVC LINED RCP	PVC LINED RCP
PVC LINED DIP	PVC LINED RCP

Domain name	WW_FITTING_BEND
HORIZONTAL	HORIZONTAL
VERTICAL	VERTICAL
NONE	NONE

Domain name	WW_MH_TYPE
0	UNKNOWN
1	SANITARY SEWER
2	ARV

Domain name	WW_FITTING_TYPE
TEE	TEE
WYE	WYE
90 BEND	90 BEND
45 BEND	45 BEND
22 BEND	22 BEND
11 BEND	11 BEND
ENCAP	ENCAP
PLUG	PLUG
REDUCER	REDUCER
ARV	ARV
FLOW METER	FLOW METER
NO FLOW POINT	NO FLOW POINT
OWNERSHIP CHANGE	OWNERSHIP CHANGE
OTHER	OTHER
UNKNOWN	UNKNOWN
COUPLING	COUPLING

Domain name	WW_CONTROL_VALVE_TYPE
AIRRELEASE	AIRRELEASE
AIRVACUUMRELEASE	AIRVACUUMRELEASE
PRESSURERELIEF	PRESSURERELIEF
VACUUMRELEASE	VACUUMRELEASE
UNKNOWN	UNKNOWN
N/A	N/A

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DATA DICTIONARY: RECLAIM

RECLAIM_WATER_BACKFLOW				
Field Name	**Alias Name**	**Type**	**Length**	**Domain**
OBJECTID	OBJECTID	OID		
SHAPE	SHAPE	Geometry		
FEATUREOWNER	FEATUREOWNER	Text	25	GIS_BACKFLOW_FEATUREOWNER
LIFECYCLESTATUS	LIFECYCLESTATUS	Text	25	GIS_BACKFLOW_LIFECYCLESTATUS
SPATIALSOURCE	SPATIALSOURCE	Text	25	GIS_BACKFLOW_SPATIALSOURCE
SIZE	SIZE	Double		
TYPE	TYPE	Text	25	GIS_BACKFLOW_TYPE
MANUFACTURER	MANUFACTURER	Text	25	GIS_BACKFLOW_MANUFACTURER
GPS_DATE	GPS_DATE	Date		
GPS_TIME	GPS_TIME	Text	15	
LATITUDE	LATITUDE	Double		
LONGITUDE	LONGITUDE	Double		
ALTITUDE	ALTITUDE	Double		
HORIZONTAL_ACCURACY	HORIZONTAL_ACCURACY (m)	Double		
VERTICAL_ACCURACY	VERTICAL_ACCURACY (m)	Double		
GPS_COMMENT	GPS_COMMENT	Text	30	

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RECLAIM_WATER_FITTING				
Field Name	**Alias Name**	**Type**	**Length**	**Domain**
OBJECTID	OBJECTID	OID		
SHAPE	SHAPE	Geometry		
FEATUREOWNER	FEATUREOWNER	Text	20	RWS_FEATUREOWNER
LIFECYCLESTATUS	LIFECYCLESTATUS	Text	20	RWS_LIFECYCLESTATUS
SPATIALSOURCE	SPATIALSOURCE	Text	20	RWS_SPATIALSOURCE
MATERIAL	MATERIAL	Text	20	RWS_MAIN_OR_SERVICE_MATERIAL
DIAMETER1	DIAMETER1	Text	8	RWS_FITTING_DIAMETER
DIAMETER2	DIAMETER2	Text	8	RWS_FITTING_DIAMETER
TYPE	TYPE	Text	30	RWS_FITTING_TYPE
BEND	BEND	Text	20	RWS_FITTING_BEND
GPS_DATE	GPS_DATE	Date		
GPS_TIME	GPS_TIME	Text	10	
LATITUDE	LATITUDE	Double		
LONGITUDE	LONGITUDE	Double		
ALTITUDE	ALTITUDE	Double		
HORIZONTAL_ACCURACY	HORIZONTAL_ACCURACY (m)	Double	8	
VERTICAL_ACCURACY	VERTICAL_ACCURACY (m)	Double	8	
GPS_COMMENT	GPS_COMMENT	Text	30	

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RECLAIM_WATER_MANHOLE				
Field Name	**Alias Name**	**Type**	**Length**	**Domain**
OBJECTID	OBJECTID	OID		
SHAPE	SHAPE	Geometry		
FEATUREOWNER	FEATUREOWNER	Text	20	RWS_FEATUREOWNER
LIFECYCLESTATUS	LIFECYCLESTATUS	Text	20	RWS_LIFECYCLESTATUS
SPATIALSOURCE	SPATIALSOURCE	Text	20	RWS_SPATIALSOURCE
ACCESSDIAMETER	ACCESSDIAMETER	Text	8	
ACCESSTYPE	ACCESSTYPE	Text	20	
GROUNDTYPE	GROUNDTYPE	Text	20	RWS_GROUNDTYPE
COVERMATERIAL	COVERMATERIAL	Text	10	RWS_COVER_MATERIAL
COVERTYPE	COVERTYPE	Text	8	RWS_COVER_TYPE
GPS_DATE	GPS_DATE	Date		
GPS_TIME	GPS_TIME	Text	10	
LATITUDE	LATITUDE	Double		
LONGITUDE	LONGITUDE	Double		
ALTITUDE	ALTITUDE	Double		
HORIZONTAL_ACCURACY	HORIZONTAL_ACCURACY (m)	Double		
VERTICAL_ACCURACY	VERTICAL_ACCURACY (m)	Double		
GPS_COMMENT	GPS_COMMENT	Text	30	

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RECLAIM_WATER_METER				
Field Name	**Alias Name**	**Type**	**Length**	**Domain**
OBJECTID	OBJECTID	OID		
SHAPE	SHAPE	Geometry		
FEATUREOWNER	Feature Owner	Text	20	GBA_WMSL_FEATUREOWNER
LIFECYCLESTATUS	Lifecycle Status	Text	25	GBA_WMSL_LIFECYCLESTATUS
SPATIALSOURCE	Spatial Source	Text	25	GBA_STATIC_SPATIALSOURCE
DIAMETER	DIAMETER	Double		RWS_METER_DIAM
MANUFACTURER	Manufacturer	Text	25	RWS_METER_MANUFACTURER
METERTYPE	Meter Type	Text	25	RWS_METERTYPE
GPS_DATE	GPS_DATE	Date		
GPS_TIME	GPS_TIME	Text	15	
LATITUDE	LATITUDE	Double		
LONGITUDE	LONGITUDE	Double		
ALTITUDE	ALTITUDE	Double		
HORIZONTAL_ACCURACY	HORIZONTAL_ACCURACY (m)	Double		
VERTICAL_ACCURACY	VERTICAL_ACCURACY (m)	Double		
GPS_COMMENT	GPS_COMMENT	Text	30	

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RECLAIM WATER SYSTEM VALVE				
Field Name	**Alias Name**	**Type**	**Length**	**Domain**
OBJECTID	OBJECTID	OID		
SHAPE	SHAPE	Geometry		
FEATUREOWNER	FEATURE OWNER	Text	20	RWS_FEATUREOWNER
LIFECYCLESTATUS	LIFECYCLE STATUS	Text	20	RWS_LIFECYCLESTATUS
SPATIALSOURCE	SPATIAL SOURCE	Text	20	RWS_SPATIALSOURCE
TYPE	TYPE	Text	25	RWS_SYSVAL_TYPE
VALVETYPE	VALVE TYPE	Text	10	RWS_SYSVAL_VALVETYPE
FUNCTION	FUNCTION	Text	25	RWS_SYSVAL_FUNCTION
GROUNDTYPE	GROUNDTYPE	Text	25	RWS_SYSVAL_GROUNDTYPE
DIAMETER	DIAMETER	Double		RWS_SYSVAL_DIAM
GPS_DATE	GPS DATE	Date	8	
GPS_TIME	GPS TIME	Text	10	
LATITUDE	LATITUDE	Double		
LONGITUDE	LONGITUDE	Double		
ALTITUDE	ALTITUDE	Double		
HORIZONTAL_ACCURACY	HORIZONTAL_ACCURACY (m)	Double		
VERTICAL_ACCURACY	VERTICAL_ACCURACY (m)	Double		
GPS_COMMENT	GPS COMMENT	Text	30	

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Reclaim Water Domains:

Domain name	RWS_SYSVAL_VALVETYPE
BALL	BALL
BUTTERFLY	BUTTERFLY
GATE	GATE
INSERTA	INSERTA
PIV	PIV
PLUG	PLUG
UNKNOWN	UNKNOWN

Domain name	RWS_SYSVAL_FUNCTION
ARV	ARV
INLINE	INLINE
PUMPOUT	PUMPOUT
PUMPSTATION	PUMPSTATION
SERVICE	SERVICE
STUBOUT	STUBOUT
UNKNOWN	UNKNOWN
VAULT	VAULT

Domain name	RWS_SYSVAL_TYPE
ARV	ARV
AIR VACUUM	AIR VACUUM
BLOWOFF	BLOWOFF
PERMASEAL	PERMASEAL
STANDARD	STANDARD

Domain name	RWS_FITTING_BEND
HORIZONTAL	HORIZONTAL
VERTICAL	VERTICAL

Domain name	RWS_MAIN_OR_SERVICE_MATERIAL
AC	AC
CC	CC
CI	CI
CU	COPPER
DI	DI
PVC	PVC
UNKNOWN	UNKNOWN
AC	AC
CC	CC

Domain name	RWS_FITTING_TYPE
11B	11B
22B	22B
45B	45B
90B	90B
COUPLING	COUPLING
CROSS	CROSS
ENDCAP	ENDCAP
LINESTOP	LINESTOP
MECHANICAL JOINT	MECHANICAL JOINT
OTHER	OTHER
RECHARGE WELL	RECHARGE WELL
REDUCER	REDUCER
SADDLE	SADDLE
TAPPING SLEEVE	TAPPING SLEEVE
TEE	TEE
UNKNOWN	UNKNOWN
WYE	WYE

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Domain name	RWS_SPATIALSOURCE
ASBUILT	ASBUILT
FIELD	FIELD
GPS	GPS
ORTHOPHOTO	ORTHOPHOTO
UNKNOWN	UNKNOWN

Domain name	RWS_LIFECYCLESTATUS
ABANDONED	ABANDONED
ACTIVE	ACTIVE
INACTIVE	INACTIVE
REMOVED	REMOVED
UNKNOWN	UNKNOWN

Domain name	RWS_SYSVAL_DIAM
1.5	1.5
2	2
3	3
4	4
6	6
8	8
10	10
12	12
16	16
20	20
24	24
30	30
36	36
42	42
48	48
9999	UNKNOWN

Domain name	RWS_GROUNDTYPE
ASPHALT	ASPHALT
CONCRETE	CONCRETE
DIRT	DIRT
UNKNOWN	UNKNOWN

Domain name	RWS_SYSVAL_GROUNDTYPE
ASPHALT	ASPHALT
CONCRETE	CONCRETE
LANDSCAPE	LANDSCAPE
UNKNOWN	UNKNOWN

Domain name	RWS_FITTING_DIAMETER
0.63	0.63
0.75	0.75
1	1
1.25	1.25
1.5	1.5
2	2
2.5	2.5
3	3
4	4
6	6
8	8
10	10
12	12
15	15
16	16
18	18
20	20
24	24
30	30

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Domain name	RWS_COVER_MATERIAL
CAST IRON	CAST IRON
ALUMINUM	ALUMINUM
UNKNOWN	UNKNOWN

Domain name	RWS_COVER_TYPE
SEALED	SEALED
VENTED	VENTED
BOLTED	BOLTED
UNKNOWN	UNKNOWN

Domain name	RWS_METER_MANUFACTURER
BADGER METERS	BADGER METERS
NEPTUNE METERS	NEPTUNE METERS
PRECISION METERS	PRECISION METERS
BADGER-NEPTUNE	BADGER-NEPTUNE
SENSUS	SENSUS

Domain name	RWS_METERTYPE
BYPASS	BYPASS
COMBO	COMBO
CMPND	CMPND
DISC	DISC
MAG	MAG
FDTEC	FDTEC
MLTJET	MLTJET
TURBIN	TURBIN

Domain name	RWS_METER_DIAM
0.63	.63
0.75	.75
1	1
1.5	1.5
2	2
2.5	2.5
3	3
4	4
6	6
8	8
10	10

Domain name	RWS_FEATUREOWNER
COC	CHANDLER
COM	MESA
INTEL	INTEL
OCA	OCA
OMG	OMG
PRIVATE	PRIVATE
SRP	SRP
TOG	GILBERT
UNKNOWN	UNKNOWN

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DATA DICTIONARY: STORM

STORM_BUBBLER_BOX				
Field Name	**Alias Name**	**Type**	**Length**	**Domain**
OBJECTID	OBJECTID	OID		
SHAPE	SHAPE	Geometry		
FEATUREOWNER	FEATUREOWNER	Text	25	SWS_FEATUREOWNER
LIFECYCLESTATUS	LIFECYCLESTATUS	Text	25	SWS_LIFECYCLESTATUS
SPATIALSOURCE	SPATIALSOURCE	Text	25	SWS_SPATIALSOURCE
GRATE_OPENINGS_NUM	GRATE_OPENINGS_NUM	Short		SWS_GRATE_OPENINGS
GRATE_LENGTH	GRATE_LENGTH	Double	8	SWS_GRATE_LENGTH
GRATE_WIDTH	GRATE_WIDTH	Double	8	SWS_GRATE_WIDTH
DRYWELL_ASSOC	DRYWELL_ASSOC	Text	5	GIS_BOOLEAN_YES_NO
GPS_DATE	GPS_DATE	Date		
GPS_TIME	GPS_TIME	Text	10	
LATITUDE	LATITUDE	Double		
LONGITUDE	LONGITUDE	Double		
ALTITUDE	ALTITUDE	Double		
HORIZONTAL_ACCURACY	HORIZONTAL_ACCURACY (m)	Double		
VERTICAL_ACCURACY	VERTICAL_ACCURACY (m)	Double		
GPS_COMMENT	GPS_COMMENT	Text	50	

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STORM_CATCHBASIN				
Field Name	**Alias Name**	**Type**	**Length**	**Domain**
OBJECTID	OBJECTID	OID		
SHAPE	SHAPE	Geometry		
FEATUREOWNER	FEATUREOWNER	Text	25	SWS_FEATUREOWNER
LIFECYCLESTATUS	LIFECYCLESTATUS	Text	25	SWS_LIFECYCLESTATUS
SPATIALSOURCE	SPATIALSOURCE	Text	25	SWS_SPATIALSOURCE
STRUCTURE_TYPE	STRUCTURE_TYPE	Short		SWS_STRUCTURE_TYPE
CATCHBASIN_TYPE	CATCHBASIN_TYPE	Text	25	SWS_CB_TYPE
CITY_EMBLEM	CITY_EMBLEM	Text	5	GIS_BOOLEAN_YES_NO
ACCESS_OPENING_TYPE	ACCESS_OPENING_TYPE	Text	25	SWS_CB_ACCESS_OPENING_TYPE
GRATE_LENGTH	GRATE_LENGTH	Double		SWS_GRATE_LENGTH
GRATE_WIDTH	GRATE_WIDTH	Double		SWS_GRATE_WIDTH
LID	LID	Text	5	GIS_BOOLEAN_YES_NO
LID_TYPE	LID_TYPE	Text	25	SWS_CB_LID_TYPE
DRYWELL_CONN	DRYWELL_CONN	Text	5	GIS_BOOLEAN_YES_NO
OUTLET_CONN	OUTLET_CONN	Text	5	GIS_BOOLEAN_YES_NO
BUBBLERBOX_CONN	BUBBLERBOX_CONN	Text	5	GIS_BOOLEAN_YES_NO
BUBBLERBOX_DRYWELL_ASSOC	BUBBLERBOX_DRYWELL_ASSOC	Text	5	GIS_BOOLEAN_YES_NO
LAKE_DRAIN	LAKE_DRAIN	Text	5	GIS_BOOLEAN_YES_NO
GPS_DATE	GPS_DATE	Date		
GPS_TIME	GPS_TIME	Text	10	
LATITUDE	LATITUDE	Double		
LONGITUDE	LONGITUDE	Double		
ALTITUDE	ALTITUDE	Double		
HORIZONTAL_ACCURACY	HORIZONTAL_ACCURACY (m)	Double		
VERTICAL_ACCURACY	VERTICAL_ACCURACY (m)	Double		
GPS_COMMENT	GPS_COMMENT	Text	50	

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STORM_COLLECTION_VAULT				
Field Name	**Alias Name**	**Type**	**Length**	**Domain**
OBJECTID	OBJECTID	OID		
SHAPE	SHAPE	Geometry		
FEATUREOWNER	FEATUREOWNER	Text	20	SWS_FEATUREOWNER
LIFECYCLESTATUS	LIFECYCLESTATUS	Text	20	SWS_LIFECYCLESTATUS
SPATIALSOURCE	SPATIALSOURCE	Text	20	SWS_SPATIALSOURCE
INLET_NUM	INLET_NUM	Short		SWS_CV_NUMB_INLETS
INLET_DIAM	INLET_DIAM	Short		SWS_CV_PIPE_SIZE
INLET_PIPE_TYPE	INLET_PIPE_TYPE	Text	30	SWS_CV_PIPE_TYPE
NUISANCE_LINE_ASSOC	NUISANCE_LINE_ASSOC	Text	5	GIS_BOOLEAN_YES_NO
DRYWELL_ASSOC	DRYWELL_ASSOC	Text	5	GIS_BOOLEAN_YES_NO
LID_GRATE	LID_GRATE	Text	5	SWS_LID_GRATE
GPS_DATE	GPS_DATE	Date		
GPS_TIME	GPS_TIME	Text	10	
LATITUDE	LATITUDE	Double		
LONGITUDE	LONGITUDE	Double		
ALTITUDE	ALTITUDE	Double		
HORIZONTAL_ACCURACY	HORIZONTAL_ACCURACY (m)	Double		
VERTICAL_ACCURACY	VERTICAL_ACCURACY (m)	Double		
GPS_COMMENT	GPS_COMMENT	Text	50	

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STORM_DRAIN_MANHOLE				
Field Name	**Alias Name**	**Type**	**Length**	**Domain**
OBJECTID	OBJECTID	OID		
SHAPE	SHAPE	Geometry		
FEATUREOWNER	FEATUREOWNER	Text	25	SWS_FEATUREOWNER
LIFECYCLESTATUS	LIFECYCLESTATUS	Text	25	SWS_LIFECYCLESTATUS
SPATIALSOURCE	SPATIALSOURCE	Text	25	SWS_SPATIALSOURCE
STRUCTURE_TYPE	STRUCTURE_TYPE	Short	2	SWS_STRUCTURE_TYPE
CHANDLER_NAME	CHANDLER_NAME_ON_LID	Text	5	GIS_BOOLEAN_YES_NO
DIAMETER	DIAMETER	Short	2	SWS_SDMH_SIZE
VENT_HOLE	VENT_HOLE	Text	30	GIS_BOOLEAN_YES_NO
ACCESS_OPENING_TYPE	ACCESS_OPENING_TYPE	Text	25	SWS_SDMH_ACCESS_OPENING_TYPE
LID_TYPE	LID_TYPE	Text	30	SWS_SDMH_TYPE
LID_TEXT	LID_TEXT	Text	30	SWS_SDMH_LID_TEXT
GPS_DATE	GPS_DATE	Date		
GPS_TIME	GPS_TIME	Text	10	
LATITUDE	LATITUDE	Double		
LONGITUDE	LONGITUDE	Double		
ALTITUDE	ALTITUDE	Double		
HORIZONTAL_ACCURACY	HORIZONTAL_ACCURACY (m)	Double		
VERTICAL_ACCURACY	VERTICAL_ACCURACY (m)	Double		
GPS_COMMENT	GPS_COMMENT	Text	50	

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STORM_DRYWELL				
Field Name	**Alias Name**	**Type**	**Length**	**Domain**
OBJECTID	OBJECTID	OID		
SHAPE	SHAPE	Geometry		
FEATUREOWNER	FEATUREOWNER	Text	25	SWS_FEATUREOWNER
LIFECYCLESTATUS	LIFECYCLESTATUS	Text	25	SWS_LIFECYCLESTATUS
SPATIALSOURCE	SPATIALSOURCE	Text	25	SWS_SPATIALSOURCE
FIELD_LOC	FIELD_LOC	Text	100	SWS_DW_LOCATION
INSTALLER	INSTALLER	Text	30	SWS_DW_INSTALLER
CHAMBER_TYPE	CHAMBER_TYPE	Text	30	SWS_DW_CHAMBER_TYPE
LID_SIZE	LID_SIZE	Short		SWS_DW_LID_SIZE
LID_TYPE	LID_TYPE	Text	25	SWS_DW_LID_TYPE
NUISANCE_LINE_ASSOC	NUISANCE_LINE_ASSOC	Text	5	GIS_BOOLEAN_YES_NO
CONCRETE_PAD	CONCRETE_PAD	Text	5	GIS_BOOLEAN_YES_NO
GPS_DATE	GPS_DATE	Date		
GPS_TIME	GPS_TIME	Text	10	
LATITUDE	LATITUDE	Double		
LONGITUDE	LONGITUDE	Double		
ALTITUDE	ALTITUDE	Double		
HORIZONTAL_ACCURACY	HORIZONTAL_ACCURACY (m)	Double		
VERTICAL_ACCURACY	VERTICAL_ACCURACY (m)	Double		
GPS_COMMENT	GPS_COMMENT	Text	50	

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STORM_INLET				
Field Name	**Alias Name**	**Type**	**Length**	**Domain**
OBJECTID	OBJECTID	OID		
SHAPE	SHAPE	Geometry		
FEATUREOWNER	FEATUREOWNER	Text	25	SWS_FEATUREOWNER
LIFECYCLESTATUS	LIFECYCLESTATUS	Text	25	SWS_LIFECYCLESTATUS
SPATIALSOURCE	SPATIALSOURCE	Text	25	SWS_SPATIALSOURCE
CATCHBASIN_TYPE	CATCHBASIN_TYPE	Text	25	SWS_CB_TYPE
FIELD_LOC	FIELD_LOC	Text	100	SWS_FIELD_LOC
GRATE_ASSOC	GRATE_ASSOC	Text	25	GIS_BOOLEAN_YES_NO
GRATE_LENGTH	GRATE_LENGTH	Double		SWS_GRATE_LENGTH
GRATE_WIDTH	GRATE_WIDTH	Double		SWS_GRATE_WIDTH
INLET_PIPE_DIAM	INLET_PIPE_DIAM	Short		SWS_INLET_PIPE_DIAM
INLET_NUMBER	NUMBER_OF_INLETS	Short		SWS_INLET_NUMBER
TRASHRACK_ASSOC	TRASHRACK_ASSOC	Text	5	GIS_BOOLEAN_YES_NO
TRASH_LENGTH	TRASH_LENGTH	Double		
TRASH_WIDTH	TRASH_WIDTH	Double		
NUISANCE_LINE_ASSOC	NUISANCE_LINE_ASSOC	Text	5	GIS_BOOLEAN_YES_NO
BUBBLER_BOX_DRYWELL_ASSOC	BUBBLER_BOX_DRYWELL_ASSOC	Text	5	GIS_BOOLEAN_YES_NO
HEADWALLASSOC	HEADWALLASSOC	Text	5	GIS_BOOLEAN_YES_NO
GPS_DATE	GPS_DATE	Date		
GPS_TIME	GPS_TIME	Text	10	
LATITUDE	LATITUDE	Double		
LONGITUDE	LONGITUDE	Double		
ALTITUDE	ALTITUDE	Double		
HORIZONTAL_ACCURACY	HORIZONTAL_ACCURACY (m)	Double		
VERTICAL_ACCURACY	VERTICAL_ACCURACY (m)	Double		
GPS_COMMENT	GPS_COMMENT	Text	50	

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STORM_OUTLET				
Field Name	**Alias Name**	**Type**	**Length**	**Domain**
OBJECTID	OBJECTID	OID		
SHAPE	SHAPE	Geometry		
FEATUREOWNER	FEATUREOWNER	Text	25	SWS_FEATUREOWNER
LIFECYCLESTATUS	LIFECYCLESTATUS	Text	25	SWS_LIFECYCLESTATUS
SPATIALSOURCE	SPATIALSOURCE	Text	25	SWS_SPATIALSOURCE
GRATE_ASSOC	GRATE_ASSOC	Text	25	GIS_BOOLEAN_YES_NO
GRATE_LENGTH	GRATE_LENGTH	Double		SWS_GRATE_LENGTH
GRATE_WIDTH	GRATE_WIDTH	Double		SWS_GRATE_WIDTH
INLET_PIPE_DIAM	INLET_PIPE_DIAM	Short		SWS_INLET_PIPE_DIAM
INLET_NUMBER	NUMBER_OF_INLETS	Short		SWS_INLET_NUMBER
TRASHRACK_ASSOC	TRASHRACK_ASSOC	Text	5	GIS_BOOLEAN_YES_NO
TRASH_LENGTH	TRASH_LENGTH	Double		
TRASH_WIDTH	TRASH_WIDTH	Double		
NUISANCE_LINE_ASSOC	NUISANCE_LINE_ASSOC	Text	5	GIS_BOOLEAN_YES_NO
BUBBLER_BOX_DRYWELL_ASSOC	BUBBLER_BOX_DRYWELL_ASSOC	Text	5	GIS_BOOLEAN_YES_NO
HEADWALLASSOC	HEADWALLASSOC	Text	5	GIS_BOOLEAN_YES_NO
GPS_DATE	GPS_DATE	Date		
GPS_TIME	GPS_TIME	Text	10	
LATITUDE	LATITUDE	Double		
LONGITUDE	LONGITUDE	Double		
ALTITUDE	ALTITUDE	Double		
HORIZONTAL_ACCURACY	HORIZONTAL_ACCURACY (m)	Double		
VERTICAL_ACCURACY	VERTICAL_ACCURACY (m)	Double		
GPS_COMMENT	GPS_COMMENT	Text	50	

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STORM_SCUPPER				
Field Name	**Alias Name**	**Type**	**Length**	**Domain**
OBJECTID	OBJECTID	OID		
SHAPE	SHAPE	Geometry		
FEATUREOWNER	FEATUREOWNER	Text	25	SWS_FEATUREOWNER
LIFECYCLESTATUS	LIFECYCLESTATUS	Text	25	SWS_LIFECYCLESTATUS
SPATIALSOURCE	SPATIALSOURCE	Text	25	SWS_SPATIALSOURCE
CITY_EMBLEM	CITY_EMBLEM	Text	5	GIS_BOOLEAN_YES_NO
NUMBER_OPENINGS	NUMBER_OPENINGS	Short		
WIDTH	WIDTH	Double		
SPILLWAY_ASSOC	SPILLWAY_ASSOC	Text	25	GIS_BOOLEAN_YES_NO
HEADWALL_ASSOC	HEADWALL_ASSOC	Text	5	GIS_BOOLEAN_YES_NO
NUISANCE_LINE_ASSOC	NUISANCE_LINE_ASSOC	Text	5	GIS_BOOLEAN_YES_NO
BUBBLERBOX_ASSOC	BUBBLERBOX_ASSOC	Text	5	GIS_BOOLEAN_YES_NO
BUBBLER_BOX_DRYWELL_ASSOC	BUBBLER_BOX_DRYWELL_ASSOC	Text	5	GIS_BOOLEAN_YES_NO
LAKE_DRAIN	LAKE_DRAIN	Text	5	GIS_BOOLEAN_YES_NO
RIPRAP	RIPRAP	Text	25	GIS_BOOLEAN_YES_NO
GPS_DATE	GPS_DATE	Date		
GPS_TIME	GPS_TIME	Text	10	
LATITUDE	LATITUDE	Double		
LONGITUDE	LONGITUDE	Double		
ALTITUDE	ALTITUDE	Double		
HORIZONTAL_ACCURACY	HORIZONTAL_ACCURACY (m)	Double		
VERTICAL_ACCURACY	VERTICAL_ACCURACY (m)	Double		
GPS_COMMENT	GPS_COMMENT	Text	50	

Storm Domains:

Domain name	SWS_DW_LOCATION
AIRPORT	AIRPORT
CITYRETENTION	CITY RETENTION
PARK	PARK
PARKING_LOT	PARKING LOT
PRIVATERETENTION	PRIVATE RETENTION
STREET	STREET
WELL_SITE	WELL SITE

Domain name	SWS_GRATE_LENGTH
12	12
24	24
28	28
30	30
36	36
38	38
40	40
50	50
60	60
76	76

Domain name	SWS_CB_LID_TYPE
STEEL	STEEL
CONCRETE	CONCRETE

Domain name	SWS_DW_CHAMBER_TYPE
DOUBLE	DOUBLE
SINGLE	SINGLE
TRIPLE	TRIPLE

Domain name	SWS_LIFECYCLESTATUS
ACTIVE	ACTIVE
REMOVED	REMOVED
ABANDONED	ABANDONED
INACTIVE	INACTIVE
FUTURE	FUTURE

Domain name	SWS_GRATE_OPENINGS
1	1
2	2
3	3
4	4
5	5
6	6

Domain name	SWS_SPATIALSOURCE
APPROVED_PLANS	APPROVED_PLANS
ASBUILT	ASBUILT
DESIGN	DESIGN
FIELD	FIELD
GPS	GPS
ORTHOPHOTO	ORTHOPHOTO
UNKNOWN	UNKNOWN

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Domain name	SWS_SDMH_SIZE
22	22
24	24
26	26
28	28
30	30
32	32
38	38

Domain name	SWS_DW_LID_SIZE
22	22
24	24
25	25
26	26
32	32
38	38

Domain name	SWS_STRUCTURE_TYPE
1	CATCH BASIN
2	SCUPPER
3	DRYWELL
4	MANHOLE
5	OUTLET
6	INLET
7	BUBBLERBOX
8	SPILLWAY
9	SEPARATOR

Domain name	SWS_SDMH_LID_TEXT
CHANDLER_SANITATION_SEWER	CHANDLER SANITATION SEWER
CHANDLER_STORM/SEWER	CHANDLER STORM/SEWER
NONE	NONE
OTHER	OTHER
STORM SEWER	STORM SEWER

Domain name	SWS_DW_INSTALLER
McGUCKINDRILLING	McGUCKIN DRILLING
TORRENTRESOURCES	TORRENT RESOURCES
WACODRILLING	WACO DRILLING
OTHER	OTHER

Domain name	SWS_CB_ACCESS_OPENING_TYPE
NONE	NONE
RECTANGULAR	RECTANGULAR
ROUND	ROUND
SQUARE	SQUARE

Domain name	SWS_FEATUREOWNER
ADOT	ADOT
CITY_OF_CHANDLER	CITY_OF_CHANDLER
HOA	HOA
OTHER	OTHER

Docusign Envelope ID: 4892B4B0-D834-4BFD-BC27-BAA8C2BD00BC

Domain name	SWS_GRATE_WIDTH
6	6
12	12
16	16
18	18
24	24
28	28
30	30
36	36
38	38
44	44
72	72

Domain name	SWS_SDMH_ACCESS_OPENING_TYPE
NONE	NONE
RECTANGULAR	RECTANGULAR
ROUND	ROUND
SQUARE	SQUARE

Domain name	SWS_FIELD_LOC
PARK	PARK
WELLSI	WELL_SITE
PRKLOT	PARKING_LOT
STREET	STREET
AIRPOR	AIRPORT
CTYRTN	CITYRETENTION
PVRET	PRIVATERETENTION

Domain name	SWS_SDMH_TYPE
PRESSURIZED	PRESSURIZED
NON-PRESSURIZED	NON-PRESSURIZED

Domain name	SWS_DW_LID_TYPE
STEEL	STEEL
GRANITE	GRANITE
CONCRETE_SEALED	CONCRETE_SEALED
GRATE	GRATE

Domain name	SWS_INLET_PIPE_DIAM
12	12
13	13
14	14
15	15
16	16
18	18
24	24
26	26
30	30
36	36
42	42
46	46
60	60
72	72

Domain name	SWS_INLET_NUMBER
1	1
2	2
3	3
4	4

Domain name	SWS_CB_TYPE
TYPE_A	TYPE_A
TYPE_B	TYPE_B
TYPE_C	TYPE_C
TYPE_D	TYPE_D
TYPE_E	TYPE_E
TYPE_F	TYPE_F
TYPE_G	TYPE_G
TYPE_H	TYPE_H
TYPE_Q	TYPE_Q
NONE	NONE

Domain name	SWS_LID_GRATE
LID	LID
GRATE	GRATE

Domain name	SWS_CV_PIPE_TYPE
CONCRETE	CONCRETE
OTHER	OTHER
METAL	METAL

Domain name	SWS_CV_PIPE_SIZE
12	12
14	14
16	16
18	18
20	20
24	24
30	30
36	36

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DATA DICTIONARY: MISCELLANEOUS POINTS

MISCELLANEOUS POINT				
Field Name	**Alias Name**	**Type**	**Length**	**Domain**
OBJECTID	OBJECTID	OID		
SHAPE	SHAPE	Geometry		
SIZE	SIZE	Double		
MATERIAL	MATERIAL	Text	30	
UTILITY_TYPE	UTILITY_TYPE	Text	30	PW_UTILITY_TYPE
NOTES	NOTES	Text	150	
GPS_DATE	GPS_DATE	Date		
GPS_TIME	GPS_TIME	Text	10	
LATITUDE	LATITUDE	Double		
LONGITUDE	LONGITUDE	Double		
ALTITUDE	ALTITUDE	Double		
HORIZONTAL_ACCURACY	HORIZONTAL_ACCURACY (m)	Double		
VERTICAL_ACCURACY	VERTICAL_ACCURACY (m)	Double		
GPS_COMMENT	GPS_COMMENT	Text	50	

Domains:

Domain name	PW_UTILITY_TYPE
WATER	WATER
WASTEWATER	WASTEWATER
RECLAIM	RECLAIM
STORM	STORM
OTHER	OTHER

Docusign Envelope ID: 4892B4B0-D834-4BFD-BC27-BAA8C2BD00BC

DATA DICTIONARY: STREETLIGHTS

STREETLIGHTS				
Field Name	**Alias Name**	**Type**	**Length**	**Domain**
OBJECTID	OBJECTID	OID		
SHAPE	SHAPE	Geometry		
FEATUREOWNER	POLE_OWNER	Text	10	ST_STLITINV_FEATUREOWNER
SPATIALSOURCE	SPATIALSOURCE	Text	25	GBA_STATIC_SPATIALSOURCE
POLENUMBER	POLENUMBER	Text	10	
POLE_HEIGHT	POLE_HEIGHT	Short		
POLE_TYPE	POLE_TYPE	Text	30	TE_STLITINV_POLE_TYPE
POLE_COAT	POLE_COAT	Text	30	TE_STLITINV_POLE_COAT
FOUNDATION	FOUNDATION	Text	30	GIS_BOOLEAN_YES_NO
GPS_DATE	GPS_DATE	Date		
GPS_TIME	GPS_TIME	Text	10	
LATITUDE	LATITUDE	Double		
LONGITUDE	LONGITUDE	Double		
ALTITUDE	ALTITUDE	Double		
HORIZONTAL_ACCURACY	HORIZONTAL_ACCURACY (m)	Double		
VERTICAL_ACCURACY	VERTICAL_ACCURACY (m)	Double		
GPS_COMMENT	GPS_COMMENT	Text	255	

Docusign Envelope ID: 4892B4B0-D834-4BFD-BC27-BAA8C2BD00BC

Streetlights Domains:

Domain name	ST_STLITINV_FEATUREOWNER
COC	CITY OF CHANDLER
PRIVATE	PRIVATE
SRP	SRP
AP	APS

Domain name	GBA_STATIC_SPATIALSOURCE
GPS	GPS
ORTHOPHOTO	ORTHOPHOTO
APPROVED_PLANS	APPROVED_PLANS
GEOCODED	GEOCODED
UNKNOWN	UNKNOWN

Domain name	TE_STLITINV_POLE_TYPE
SL 1	SL 1
SL 6	SL 6
SL 8	SL 8
SL 10	SL 10
SL 16	SL 16
SL 17	SL 17
CURVED	CURVED
CUSTOM	CUSTOM
STERNBERG	STERNBERG
SIGNAL POLE	SIGNAL POLE
POWER POLE	POWER POLE

Domain name	TE_STLITINV_POLE_COAT
GALVANIZED	GALVANIZED
PAINTED	PAINTED
POWDER COATED	POWDER COATED

Docusign Envelope ID: 4892B4B0-D834-4BFD-BC27-BAA8C2BD00BC

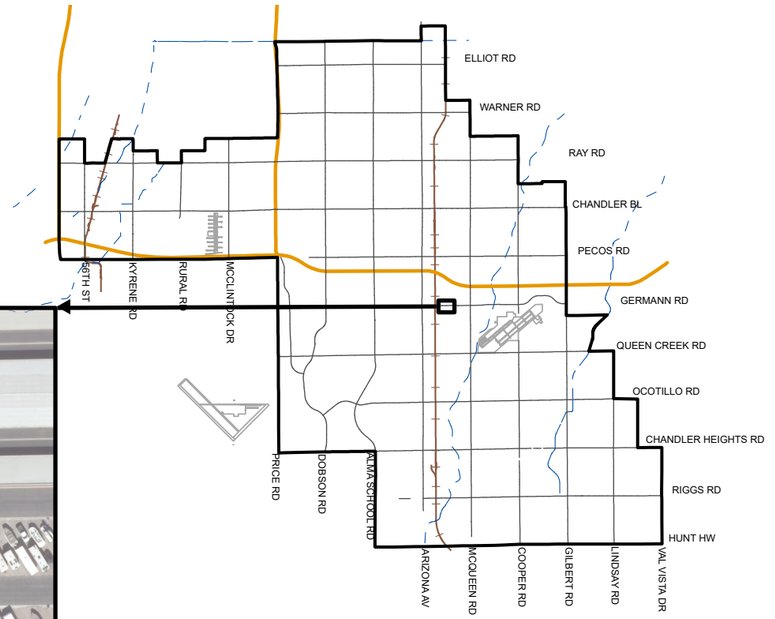
EXHIBIT E

FEDERAL PROVISIONS

N/A

RECLAIMED WATER PIPE EXTENSION
GERMANN ROAD AND HAMILTON STREET CONSTRUCTION
PROJECT NO. WW2206.404





MEMO NO. CP25-126

PROJECT LOCATION

NTS

ChanGIS

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CHANDLER arizona
Community of Innovation

City Council Memorandum Public Works & Utilities Memo No. CP25-127

Date: June 12, 2025
To: Mayor and Council
Thru: Joshua H. Wright, City Manager
Andy Bass, Deputy City Manager
John Knudson, Public Works and Utilities Director
Daniel Haskins, Capital Projects Division Manager
From: Sandra Story, Engineering Project Manager
Subject: Professional Services Agreement No. WW2206.454, with Wilson Engineers, LLC, for the Reclaimed Water Pipe Extension - Germann Road and Hamilton Street Construction Management Services

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Proposed Motion:

Move City Council award Professional Services Agreement No. WW2207.454, to Wilson Engineers, LLC for the Reclaimed Water Pipe Extension Germann Road and Hamilton Street Construction Management Services, in the amount not to exceed $141,990.

Background/Discussion:

In October 2021, the city executed a reclaimed water agreement with Intel Corporation for the city to provide additional reclaimed water supply to their manufacturing facilities. In order to meet the terms of the agreement, the city is constructing improvements at the Airport Water Reclamation Facility (AWRF), located at 905 E. Queen Creek Road, and north along Hamilton Street to Ryan Road, that will convey additional flows to the city's reclaimed water distribution system. This project will strategically improve the system to increase capacity and redundancy to better serve existing reclaimed water infrastructure. The improvements will also allow the city to better manage its water resources through its system of existing recharge wells.

The project includes installing approximately 200 linear feet of 24-inch reclaimed water main and connection to the existing 12-inch reclaimed water main within Germann Road at Hamilton Street. The scope of work consists of project

administration, engineering, and resident services. The agreement completion time is 150 calendar days following Notice to Proceed.

A related Construction Agreement with Arrowmark, LLC, for the Reclaimed Water Pipe Extension Germann Road and Hamilton Street, is also scheduled for this City Council meeting.

Evaluation:

Staff recommends approval of this agreement with Wison Engineers, LLC, based on qualifications, relevant firm experience, team experience, project understanding, and project approach.

Financial Implications:

The cost of this project will be reimbursed by Intel Corporation (20%), using funding provided for in its development agreement with the city. The remaining 80% of the project cost will utilize State of Arizona Title 42 funding for public infrastructure, per the city's October 2021 Reclaimed Water Agreement with Intel Corporation.

Fiscal Impact

Account No.	Fund Name	Program Name	Dollar Amount	CIP Funded Y/N
615.3910.6814.6WW690	Wastewater Operating	Reclaimed Water Conveyance Phase II	$141,990	Y

Attachments

Agreement

Location Map

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PROFESSIONAL SERVICES AGREEMENT
CONSTRUCTION MANAGEMENT SERVICES
RECLAIMED WATER PIPE EXTENSION GERMANN ROAD AND HAMILTON STREET
Project No. WW2206.454
Council Date: June 12, 2025

THIS AGREEMENT ("Agreement") is made and entered into on the _____ day of_____, 2025 ("Effective Date"), by and between City of Chandler, an Arizona municipal corporation, ("City''), and Wilson Engineers, LLC**,** an Arizona corporation, ("Consultant") (City and Consultant may individually be referred to as "Party" and collectively referred to as "Parties").

RECITALS

A. City proposes to engage Consultant to provide construction management services for Reclaimed Water Pipe Extension Germann Road and Hamilton Street project ("Project") as more fully described in Exhibit "A" ("Services"), which is attached to and made a part of this Agreement by this reference.

B. Consultant is ready, willing, and able to provide the services described in **Exhibit "A"** for the compensation and fees set forth and as described in **Exhibit "B"**, which is attached to and made a part of this Agreement by this reference.

C. City desires to enter into an Agreement with Consultant to provide these services under the terms and conditions set forth in this Agreement.

AGREEMENT

NOW, THEREFORE, in consideration of the premises and the mutual promises contained in this Agreement, City and Consultant agree as follows:

SECTION I--CONSULTANT'S SERVICES

Consultant must perform the services described in **Exhibit "A"** to City's satisfaction within the terms and conditions of this Agreement and within the care and skill that a person who provides similar services in Chandler, Arizona exercises under similar conditions. All work or services furnished by Consultant under this Agreement must be performed in a skilled and workmanlike manner. All fixtures, furnishings, and equipment furnished by Consultant as part of the work or services under this Agreement must be new, or the latest model, and of the most suitable grade and quality for the intended purpose of the work or service.

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SECTION II--PERIOD OF SERVICE

Consultant must perform the services described in **Exhibit "A"** for the term of this Agreement. Unless amended in writing by the Parties, the Agreement term expires 150 calendar days after the Notice to Proceed (NTP) Date.

SECTION III--PAYMENT OF COMPENSATION AND FEES

Unless amended in writing by the Parties, Consultant's compensation and fees as more fully described in **Exhibit "B"** for performance of the services approved and accepted by City under this Agreement must not exceed $141,990 for the full term of the Agreement. Consultant may not increase any compensation or fees under this Agreement without the City's prior written consent. Consultant must submit monthly requests for payment of services approved and accepted during the previous billing period and must include, as applicable, detailed invoices and receipts, a narrative description of the tasks accomplished during the billing period, a list of any deliverables submitted, and any subconsultant's or supplier's actual requests for payment plus similar narrative and listing of their work. Consultant must submit an Application and Certification for Payment Sheet with the monthly request for payment to: CapitalProjects.Payables@chandleraz.gov. Payment for those services negotiated as a lump sum will be made in accordance with the percentage of the work completed during the preceding billing period. Services negotiated as a not-to-exceed fee will be paid in accordance with the work effort expended on the service during the preceding month. All requests for payment must be submitted to City for review and approval. City will make payment for approved and accepted services within 30 calendar days of City's receipt of the request for payment. Consultant bears all responsibility and liability for any and all tax obligations that result from Consultant's performance under this Agreement.

SECTION IV--CITY'S OBLIGATIONS

As part of Consultant's services under this Agreement, City will provide furnished items, services, or obligations as detailed in **Exhibit "D"**.

SECTION V--GENERAL CONDITIONS

5.1 Notices. Unless otherwise provided herein, demands under this Agreement must be in writing and will be deemed to have been duly given and received either (a) on the date of service if personally served on the party to whom notice is to be given, or (b) on the third day after the date of the postmark of deposit by first class United States mail, registered or certified, postage prepaid and properly addressed as follows:

To City:	City of Chandler - Public Works & Utilities Department Attn: CIP City Engineer: Daniel Haskins, P.E. P.O. Box 4008, Mail Stop 407 Chandler, AZ 85244-4008 Phone: 480-782-3335 Email: Daniel.Haskins@chandleraz.gov	
With a copy to:	City of Chandler - Public Works & Utilities Department Attn: Adam Kleiser**,** Project Manager P.O. Box 4008, Mail Stop 407, Chandler, AZ 85244-4008 Phone: 480-782-3325 Email: Adam.Kleiser@chandleraz.gov	
To Consultant:	**LEGAL COMPANY NAME:**	Wilson Engineers, LLC
	Mailing Address:	1620 West Fountainhead Parkway, Suite 501 Tempe, Arizona 85282
	Physical Address:	1620 West Fountainhead Parkway, Suite 501 Tempe, Arizona 85282
	Statutory Agent Name:	Corporation Service Company
	Statutory Agent Mailing Address:	7955 South Priest Drive, Suite 102 Tempe, AZ 85284
	Statutory Agent Physical Address:	7955 South Priest Drive, Suite 102 Tempe, AZ 85284
	CONSULTANT'S AUTHORIZED PROJECT REPRESENTATIVE	
	Name:	Steve Todd
	Title:	Principal
	Phone:	480-893-8860
	Email:	Steve.Todd@wilson-engineers.com

5.2 Records/Audit. Records of Consultant's direct personnel payroll, reimbursable expenses pertaining to this Agreement and records of accounts between City and Consultant must be kept on the basis of generally accepted accounting principles and must be made available to City and its auditors for up to three years following City's final acceptance of the services under this Agreement (this requirement is increased to five years if construction of this project is federally funded). City, its authorized representative, or any federal agency, reserves the right to audit Consultant's records to verify the accuracy and appropriateness of all cost and pricing data, including data used to negotiate this Agreement and any amendments. City reserves the right to decrease the total amount of Agreement price or payments made under this Agreement or request reimbursement from Consultant following final Agreement payment on this Agreement if, upon audit of Consultant's records, the audit discloses Consultant has provided false, misleading, or inaccurate cost and pricing data. Consultant will include a similar provision in all of its Agreements with subconsultants who provide services under the Agreement to ensure that City, its authorized representative, or

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the appropriate federal agency, has access to the subconsultants' records to verify the accuracy of all cost and pricing data. City reserves the right to decrease Agreement price or payments made on this Agreement or request reimbursement from Consultant following final payment on this Agreement if the above provision is not included in subconsultant agreements, and one or more subconsultants refuse to allow City to audit their records to verify the accuracy and appropriateness of all cost and pricing data. If, following an audit of this Agreement, the audit discloses Consultant has provided false, misleading, or inaccurate cost and pricing data, and the cost discrepancies exceed 1% of the total Agreement billings, Consultant will be liable for reimbursement of the reasonable, actual cost of the audit.

5.3 Alteration in Character of Work. Whenever an alteration in the character of work results in a substantial change in this Agreement, thereby materially increasing or decreasing the scope of services, cost of performance, or Project schedule, the work will be performed as directed by City. However, before any modified work is started, a written amendment must be approved and executed by City and Consultant. Such amendment must not be effective until approved by City. Additions to, modifications, or deletions from this Agreement as provided herein may be made, and the compensation to be paid to Consultant may accordingly be adjusted by mutual agreement of the Parties. It is distinctly understood and agreed that no claim for extra services or materials furnished by Consultant will be allowed by City except as provided herein, nor must Consultant do any work or furnish any materials not covered by this Agreement unless such work is first authorized in writing. Any such work or materials furnished by Consultant without prior written authorization will be at Consultant's own risk, cost, and expense, and Consultant hereby agrees that without written authorization Consultant will make no claim for compensation for such work or materials furnished.

5.4 Termination. City and Consultant hereby agree to the full performance of the covenants contained herein, except that City reserves the right, at its discretion and without cause, to terminate or abandon any service provided for in this Agreement, or abandon any portion of the Project for which services have been performed by Consultant. In the event City abandons or suspends the services, or any part of the services as provided in this Agreement, City will notify Consultant in writing and immediately after receiving such notice, Consultant must discontinue advancing the work specified under this Agreement. Upon such termination, abandonment, or suspension, Consultant must deliver to City all drawings, plans, specifications, special provisions, estimates and other work entirely or partially completed, together with all unused materials supplied by City. Consultant must appraise the work Consultant has completed and submit Consultant's appraisal to City for evaluation. City may inspect Consultant's work to appraise the work completed. Consultant will receive compensation in full for services performed to the date of such termination. The fee will be paid in accordance with Section Ill of this Agreement, and as mutually agreed upon by Consultant and City. If there is no mutual agreement on payment, the final determination will be made in accordance with the "Disputes" provision in this Agreement. However, in no event may the fee exceed the fee set forth in Section Ill of this Agreement nor as amended in accordance with Section "Alteration in Character of Work." City will make the final payment within 60 days after Consultant has delivered the last of the partially completed items and the Parties agree on the final fee. If City is found to have improperly terminated the Agreement for cause or default, the termination will be converted to a termination for convenience in accordance with the provisions of this Agreement.

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5.5 Indemnification. To the extent permitted by law, the Consultant ("lndemnitor") must indemnify, save and hold harmless City and its officers, officials, agents and employees ("lndemnitee") from any and all claims, actions, liabilities, damages, losses or expenses (including court costs, attorneys' fees and costs of claim processing, investigation and litigation) ("Claims") caused or alleged to be caused, in whole or in part, by the wrongful, negligent or willful acts, or errors or omissions of Consultant or any of its owners, officers, directors, agents, employees, or subconsultants in connection with this Agreement. This indemnity includes any claim or amount arising out of or recovered under workers' compensation law or on account of the failure of Consultant to conform to any federal, state or local law, statute, ordinance, rule, regulation or court decree. Consultant must indemnify lndemnitee from and against any and all Claims, except those arising solely from lndemnitee's own negligent or willful acts or omissions. Consultant is responsible for primary loss investigation, defense and judgment costs where this indemnification applies. In consideration of the award of this Agreement, Consultant agrees to waive all rights of subrogation against lndemnitee for losses arising from or related to this Agreement. The obligations of Consultant under this provision survive the termination or expiration of this Agreement.

5.6 Insurance Requirements. Consultant must procure insurance under the terms and conditions and for the amounts of coverage set forth in **Exhibit "C"** against claims that may arise from or relate to performance of the work under this Agreement by Consultant and its agents, representatives, employees, and subconsultants. Consultant and any subconsultant must maintain this insurance until all of their obligations have been discharged, including any warranty periods under this Agreement. These insurance requirements are minimum requirements for this Agreement and in no way limit the indemnity covenants contained in this Agreement. City in no way warrants that the minimum limits stated in **Exhibit "C"** are sufficient to protect Consultant from liabilities that might arise out of the performance of the work under this Agreement by Consultant, Consultant's agents, representatives, employees, or subconsultants. Consultant is free to purchase such additional insurance as may be determined necessary.

5.7 Cooperation and Further Documentation. Consultant agrees to provide City such other duly executed documents as may be reasonably requested by City to implement the intent of this Agreement.

5.8 Successors and Assigns. City and Consultant each bind itself, its partners, successors, assigns, and legal representatives to the other party to this Agreement and to the partners, successors, assigns, and legal representatives of such other party in respect to all covenants of this Agreement. Neither City nor Consultant may assign, sublet, or transfer its interest in this Agreement without the written consent of the other party. In no event may any contractual relation be created between any third party and City.

5.9 Disputes. In any dispute arising out of an interpretation of this Agreement or the duties required not disposed of by agreement between Consultant and City, the final determination at the administrative level will be made by City Engineer.

5.10 Completeness and Accuracy of Consultant's Work. Consultant must be responsible for

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the completeness and accuracy of Consultant's services, data, and other work prepared or compiled under Consultant's obligation under this Agreement and must correct, at Consultant's expense, all willful or negligent errors, omissions, or acts that may be discovered. Correction of errors disclosed and determined to exist during any construction of the project on architectural or engineering drawings and specifications must be accomplished by Consultant. The cost of the design necessary to correct those errors attributable to Consultant and any damage incurred by City as a result of additional construction costs caused by such engineering or architectural errors will be chargeable to Consultant and will not be considered a cost of the Work. The fact that City has accepted or approved Consultant's work will in no way relieve Consultant of any of Consultant's responsibilities.

5.11 Reporting. Written monthly reports, along with updated work schedules, will be made by Consultant in the format prescribed by City. These reports will be delivered to City per schedule. When requested by City, Consultant will attend Council meetings and provide finished documents including correspondence for Council action, supporting charts, graphs, drawings and colored slides of same.

5.12 Withholding Payment. City reserves the right to withhold funds from Consultant's payments up to the amount equal to the claims City may have against Consultant until such time that a settlement on those claims has been reached.

5.13 City's Right of Cancellation. The Parties acknowledge that this Agreement is subject to cancellation by City under the provisions of Section 38-511, Arizona Revised Statutes (A.R.S.).

5.14 Independent Consultant. For this Agreement Consultant constitutes an independent contractor. Any provisions in this Agreement that may appear to give City the right to direct Consultant as to the details of accomplishing the work or to exercise a measure of control over the work means that Consultant must follow the wishes of City as to the results of the work only. These results must comply with all applicable laws and ordinances.

5.15 Project Staffing. Prior to the start of any work under this Agreement, Consultant must submit to City detailed resumes of key personnel that will be involved in performing services prescribed in the Agreement. City hereby acknowledges its acceptance of such personnel to perform services under this Agreement. At any time hereafter that Consultant desires to change key personnel while performing under the Agreement, Consultant must submit the qualifications of the new personnel to City for prior approval. Key personnel include, but are not limited to, principals-in-charge, project manager, and project Consultant. Consultant will maintain an adequate and competent staff of qualified persons, as may be determined by City, throughout the performance of this Agreement to ensure acceptable and timely completion of the Scope of Services. If City objects, with reasonable cause, to any of Consultant's staff, Consultant must take prompt corrective action acceptable to City and, if required, remove such personnel from the Project and replace with new personnel agreed to by City.

5.16 Consultants or Subconsultants. Prior to beginning the work, Consultant must furnish City for approval the names of consultants or subconsultants to be used under this Agreement. Any subsequent changes are subject to City's written prior approval.

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5.17 Force Majeure. If either party is delayed or prevented from the performance of any act required under this Agreement by reason of acts of God or other cause beyond the control and without fault of the Party (financial inability excepted), performance of that act may be excused, but only for the period of the delay, if the Party provides written notice to the other Party within ten days of such act. The time for performance of the act may be extended for a period equivalent to the period of delay from the date written notice is received by the other Party.

5.18 Compliance with Federal Laws. Consultant understands and acknowledges the applicability of the Americans with Disabilities Act, the Immigration Reform and Control Act of 1986 and the Drug Free Workplace Act of 1989 to it. Consultant agrees to comply with these laws in performing this Agreement and to permit City to verify such compliance.

5.19 No Israel Boycott. By entering into this Agreement, Consultant certifies that Consultant is not currently engaged in, and agrees for the duration of the Agreement, not to engage in a boycott of Israel as defined by state statute.

5.20 Legal Worker Requirements. A.R.S. § 41-4401 prohibits City from awarding an Agreement to any consultant who fails, or whose subconsultants fail, to comply with A.R.S. § 23-214(A). Therefore, Consultant agrees Consultant and each subconsultant it uses warrants their compliance with all federal immigration laws and regulations that relate to their employees and their compliance with § 23-214, subsection A. A breach of this warranty will be deemed a material breach of the Agreement and may be subject to penalties up to and including termination of the Agreement. City retains the legal right to inspect the papers of any Consultant's or subconsultant's employee who provides services under this Agreement to ensure that Consultant and subconsultants comply with the warranty under this provision.

5.21 Lawful Presence Requirement. A.R.S. §§ 1-501 and 1-502 prohibit City from awarding an Agreement to any natural person who cannot establish that such person is lawfully present in the United States. To establish lawful presence, a person must produce qualifying identification and sign a City-provided affidavit affirming that the identification provided is genuine. This requirement will be imposed at the time of Agreement award. This requirement does not apply to business organizations such as corporations, partnerships, or limited liability companies.

5.22 Covenant Against Contingent Fees. Consultant warrants that no person has been employed or retained to solicit or secure this Agreement upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee, and that no member of the Chandler City Council, or any City employee has any interest, financially, or otherwise, in Consultant's firm. For breach or violation of this warrant, City may annul this Agreement without liability or, at its discretion, to deduct from the Agreement price or consideration, the full amount of such commission, percentage, brokerage, or contingent fee.

5.23 Non-Waiver Provision. The failure of either Party to enforce any of the provisions of this Agreement or to require performance of the other Party of any of the provisions hereof must not be construed to be a waiver of such provisions, nor must it affect the validity of this Agreement or any part thereof, or the right of either Party to thereafter enforce each and every provision.

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5.24 Disclosure of Information Adverse to City's Interests. To evaluate and avoid potential conflicts of interest, Consultant must provide written notice to City, as set forth in this Section, of any work or services performed by Consultant for third parties that may involve or be associated with any real property or personal property owned or leased by City. Such notice must be given 7 business days prior to commencement of the services by Consultant for a third party, or 7 business days prior to an adverse action as defined below. Written notice and disclosure must be sent in accordance with Section 6.7 above. An adverse action under this Agreement includes, but is not limited to: (a) using data as defined in the Agreement acquired in connection with this Agreement to assist a third party in pursuing administrative or judicial action against City; or (b) testifying or providing evidence on behalf of any person in connection with an administrative or judicial action against City; or (c) using data to produce income for Consultant or its employees independently of performing the services under this Agreement, without the prior written consent of City. Consultant represents that except for those persons, entities, and projects identified to City, the services performed by Consultant under this Agreement are not expected to create an interest with any person, entity, or third party project that is or may be adverse to City's interests. Consultant's failure to provide a written notice and disclosure of the information as set forth in this Section constitute a material breach of this Agreement.

5.25 Data Confidentiality and Data Security. As used in the Agreement, "data" means all information, whether written or verbal, including plans, photographs, studies, investigations, audits, analyses, samples, reports, calculations, internal memos, meeting minutes, data field notes, work product, proposals, correspondence and any other similar documents or information prepared by, obtained by, or transmitted to Consultant or its subconsultants in the performance of this Agreement. The Parties agree that all data, regardless of form, including originals, images, and reproductions, prepared by, obtained by, or transmitted to Consultant or its subconsultants in connection with Consultant's or its subconsultant's performance of this Agreement is confidential and proprietary information belonging to City. Except as specifically provided in this Agreement, Consultant or its subconsultants must not divulge data to any third party without City's prior written consent. Consultant or its subconsultants must not use the data for any purposes except to perform the services required under this Agreement. These prohibitions do not apply to the following data provided to Consultant or its subconsultants have first given the required notice to City: (a) data which was known to Consultant or its subconsultants prior to its performance under this Consultant or its subconsultants by a third party, who to the best of Consultant's or its subconsultants' knowledge and belief, had the legal right to make such disclosure and Consultant or its subconsultants are not otherwise required to hold such data in confidence; or (c) data which is required to be disclosed by virtue of law, regulation, or court order, to which Consultant or its subconsultants are subject. In the event Consultant or its subconsultants are required or requested to disclose data to a third party, or any other information to which Consultant or its subconsultants became privy as a result of any other Agreement with City, Consultant must first notify City as set forth in this Section of the request or demand for the data. Consultant or its subconsultants must give City sufficient facts so that City can be given an opportunity to first give its consent or take such action that City may deem appropriate to protect such data or other information from disclosure. All data must continue to be subject to the confidentiality agreements of this Agreement. Consultant or its subconsultants assume all liability to maintain the confidentiality of the data in its possession

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and agrees to compensate City if any of the provisions of this Section are violated by Consultant, its employees, agents or subconsultants. Solely for the purposes of seeking injunctive relief, it is agreed that a breach of this Section must be deemed to cause irreparable harm that justifies injunctive relief in court. Consultant agrees that the requirements of this Section must be incorporated into all subagreements entered into by Consultant. A violation of this Section may result in immediate termination of this Agreement without notice.

5.26 Personal Identifying Information-Data Security. Personal identifying information, financial account information, or restricted City information, whether electronic format or hard copy, must be secured and protected at all times by Consultant or its subconsultants. At a minimum, Consultant or its subconsultants must encrypt or password-protect electronic files. This includes data saved to laptop computers, computerized devices, or removable storage devices. When personal identifying information, financial account information, or restricted City information, regardless of its format, is no longer necessary, the information must be redacted or destroyed through appropriate and secure methods that ensure the information cannot be viewed, accessed, or reconstructed. In the event that data collected or obtained by Consultant or its subconsultants in connection with this Agreement is believed to have been compromised, Consultant or its subconsultants must immediately notify City contact. Consultant agrees to reimburse City for any costs incurred by City to investigate potential breaches of this data and, where applicable, the cost of notifying individuals who may be impacted by the breach. Consultant agrees that the requirements of this Section must be incorporated into all subcontracts entered into by Consultant. It is further agreed that a violation of this Section must be deemed to cause irreparable harm that justifies injunctive relief in court. A violation of this Section may result in immediate termination of this Agreement without notice. The obligations of Consultant or its subconsultants under this Section must survive the termination of this Agreement.

5.27 Jurisdiction and Venue. This Agreement is made under and must be construed in accordance with and governed by the laws of the State of Arizona without regard to the conflicts or choice of law provisions thereof. Any action to enforce any provision of this Agreement or to obtain any remedy with respect hereto must be brought in the courts located in Maricopa County, Arizona, and for this purpose, each Party hereby expressly and irrevocably consents to the jurisdiction and venue of such court.

5.28 Survival. All warranties, representations, and indemnifications by Consultant must survive the completion or termination of this Agreement.

5.29 Modification. Except as expressly provided herein to the contrary, no supplement, modification, or amendment of any term of this Agreement will be deemed binding or effective unless in writing and signed by the Parties.

5.30 Severability. If any provision of this Agreement or the application to any person or circumstance may be invalid, illegal or unenforceable to any extent, the remainder of this Agreement and the application will not be affected and will be enforceable to the fullest extent permitted by law.

5.31 Integration. This Agreement contains the full agreement of the Parties. Any prior or contemporaneous written or oral agreement between the Parties regarding the subject

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matter is merged and superseded.

5.32 Time is of the Essence. Time of each of the terms, covenants, and conditions of this Agreement is hereby expressly made of the essence.

5.33 Date of Performance. If the date of performance of any obligation or the last day of any time period provided for should fall on a Saturday, Sunday, or holiday for City, the obligation will be due and owing, and the time period will expire, on the first day after which is not a Saturday, Sunday or legal City holiday. Except as may otherwise be set forth in this Agreement, any performance provided for herein will be timely made if completed no later than 5:00 p.m. (Chandler time) on the day of performance.

5.34 Third Party Beneficiary. Nothing under this Agreement will be construed to give any rights or benefits in the Agreement to anyone other than City and Consultant, and all duties and responsibilities undertaken pursuant to this Agreement will be for the sole and exclusive benefit of City and Consultant and not for the benefit of any other party.

5.35 Conflict in Language. All work performed must conform to all applicable City of Chandler codes, ordinances, and requirements as outlined in this Agreement. If there is a conflict in interpretation between provisions in this Agreement and those in **Exhibit "A"**, the provisions in this Agreement prevail.

5.36 Document/Information Release. Documents and materials released to Consultant, which are identified by City as sensitive and confidential, are City's property. The document/material must be issued by and returned to City upon completion of the services under this Agreement. Consultant secondary distribution, disclosure, copying, or duplication in any manner is prohibited without City's prior written approval. The document/material must be kept secure at all times. This directive applies to all City documents, whether in photographic, printed, or electronic data format.

5.37 Exhibits. The following exhibits are made a part of this Agreement and are incorporated by reference:

Exhibit A - Scope of Services / Schedule
Exhibit B - Compensation and Fees
Exhibit C - Insurance Requirements
Exhibit D - Special Conditions
Exhibit E – Subconsultant Documents with Consultant (if applicable)
Exhibit F - Federal Requirements (if applicable)

5.38 Special Conditions. As part of the services Consultant provides under this Agreement, Consultant agrees to comply with and fully perform the special terms and conditions set forth in **Exhibit "D"**, which is attached to and made a part of this Agreement.

5.39 Non-Discrimination and Anti-Harassment Laws. Consultant must comply with all applicable City, state, and federal non-discrimination and anti-harassment laws, rules, and regulations.

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5.40 Licenses and Permits. Beginning with the Effective Date and for the full term of this Agreement, Consultant must maintain all applicable City, state, and federal licenses and permits required to fully perform Consultant's services under this Agreement.

5.41 Warranties. Consultant must furnish a one-year warranty on all work and services performed under this Agreement. Consultant must furnish, or cause to be furnished, a two-year warranty on all fixtures, furnishings, and equipment furnished by Consultant, subconsultants or suppliers under this Agreement. Any defects in design, workmanship, or materials that do not comply with this Agreement must be corrected by Consultant (including, but not limited to, all parts and labor) at Consultant's sole cost and expense. All written warranties and redlines for as-built conditions must be delivered to City on or before City's final acceptance of Consultant's services under this Agreement.

5.42 Cooperative Purchasing Agreement (S.A.V.E. – Strategic Alliance for Volume Expenditures). In addition to City of Chandler and with the approval of Consultant, this Agreement may be extended for use by other municipalities, school districts, and government agencies of the State. Any such usage by other entities must be in accordance with the ordinance, charter, or procurement rules and regulations of the respective political entity.

5.43 Budget Approval into Next Fiscal Year. This Agreement will commence on the Effective Date and continue in full force and effect until it is terminated or expires in accordance with the provisions of this Agreement. The Parties recognize that the continuation of this Agreement after the close of the City's fiscal year, which ends on June 30 of each year, is subject to the City Council's approval of a budget that includes an appropriation for this item as an expenditure. The City does not represent that this budget item will be actually adopted. This determination is solely made by the City Council.

5.44 Forced Labor of Ethnic Uyghurs Prohibited. By entering into this Agreement, Contractor certifies and agrees Contractor does not currently use and will not use for the term of this Agreement: (i) the forced labor of ethnic Uyghurs in the People's Republic of China; or (ii) any goods or services produced by the forced labor of ethnic Uyghurs in the People's Republic of China; or (iii) any contractors, subcontractors or suppliers that use the forced labor or any goods or services produced by the forced labor of ethnic Uyghurs in the People's Republic of China.

5.45 License to City for Reasonable Use. With this Agreement, Consultant and its subconsultants hereby grant a license to City, its agents, employees, and representatives for an indefinite period of time to reasonably use, make copies, and distribute as appropriate the Documents, works or deliverables developed or created as a result of the Project and this Agreement. This license also includes the making of derivative works.

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This Agreement will be in full force and effect only when it has been approved and executed by the duly authorized City officials.

IN WITNESS WHEREOF, the Parties have executed this Agreement as of the Effective Date.

"CITY"
CITY OF CHANDLER

Mayor

RECOMMENDED BY:

Daniel Haskins May 12, 2025
Daniel Haskins, P.E.
CIP City Engineer

APPROVED AS TO FORM:

City Attorney JMD

ATTEST:

City Clerk Seal

"CONSULTANT"
WILSON ENGINEERS, LLC

Stephen Todd May 12, 2025
Signature Date

Stephen Todd
Print Name

Principal
Title

steve.todd@wilson-engineers.com
Signer Email Address

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EXHIBIT "A"
SCOPE OF SERVICES/SCHEDULE

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EXHIBIT "A"

CONSTRUCTION MANAGEMENT
SCOPE OF SERVICES
RECLAIMED WATER PIPE EXTENSION
GERMANN ROAD AND HAMILTON STREET
PROJECT NO. WW2206.454

PROJECT DISCRIPTION

PROJECT TASKS

1. PRE-CONSTRUCTION ASSISTANCE

A. Task 1.1 Preconstruction Assistance

i. Consultant must attend the pre-construction meeting.

2. CONSTRUCTION MANAGEMENT

A. Task 2.1 Weekly Construction Meetings

i. Consultant must conduct weekly construction meetings. Each meeting includes agenda and minutes; Request for Information (RFI); Shop Drawing; Request for Information (RFI); Field Directive (FD); Material Certification; and Allowance Logs. Consultant assumes **16** weekly meetings will be held (**4-month construction duration**).

B. Task 2.2 CPM Schedule

i. Consultant's opinions concerning various scheduling documents produced or used by the Contractor are for information and not controlling on the Contractor. It is Contractor's responsibility to continue to exercise independent judgement concerning means, methods, and sequences of construction it employs. The Contractor remains solely responsible for meeting contract times(s) identified in the construction documents.

ii. Consultant must review and evaluate Contractor's initial CPM schedule and provide recommendations for acceptance.

iii. Consultant must review Contractor's monthly CPM schedule updates submitted with each payment application, identify CPM tasks behind schedule that may affect critical path items, project substantial and final completion dates and initiate correspondence to City regarding those tasks. Consultant assumes **4** reviews of updated CPM schedule.

C. Task 2.3 Requests for Information (RFI's)

i. Consultant must review, evaluate, and respond to Contractor Requests for Information (RFI's); and prepare and maintain a submittal log of all RFI's. Consultant assumes **10** RFI responses.

D. Task 2.4 Shop Drawing Submittals

i. Consultant must review, evaluate, and respond to Contractor shop drawing submittals; and prepare and maintain a submittal log of all shop drawing submittals. Consultant assumes a maximum of 7 submittals, with 50% requiring re-submittal and a second review, for a total of **10** submittals.

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E. Task 2.5 Requests for Proposal (RFP)

i. Consultant must prepare Requests for Proposal (RFP) documents detailing requested additional work tasks; review and evaluate Contractor RFP responses (cost derivatons) with approval recommendations; and prepare and maintain a submittal log list of all RFP's. Consultant assumes **5** RFPs.

F. Task 2.6 Field Directives (FD's)

i. Consultant must prepare Field Directive (FD) documents detailing requested additional work tasks; review and evaluate Contractor FD responses with approval recommendations; and prepare and maintain a submittal log list of all FD's. Consultant assumes **5** FD's.

G. Task 2.7 Contractor Payment Applications

i. Consultant must review and provide comments for the preliminary schedule of values (SOV) submitted by the Contractor for compliance with the contract documents to ensure it includes an appropriate amount of detail.

ii. Consultant must review and evaluate Contractor monthly payment applications and make recommendation for payment; maintain a weekly record of constructed pay quantities and compile monthly totals; and coordinate payment application with the city quantity report and the inspectors' daily logs. Consultant assumes **4** payment applications, with **2** reviews each.

3. CONSTRUCTION INSPECTION

A. Task 3.1 Inspection Services

i. The Resident Project Representative (RPR) will maintain a presence at the Project site with sufficient frequency to be knowledgeable about the progress and quality of the work to:

A) Conduct on-site inspections of the work in progress to assist Consultant in determining if the work is proceeding in accordance with the construction documents and that completed work conforms to the construction documents.

B) Report to Consultant whenever it is believed that any work is unsatisfactory, faulty, or defective, or does not conform to the construction documents, or does not meet the requirements of inspections, tests or approval required to be made, or has been damaged prior to final payment; and advise Consultant when it is believed work should be corrected or rejected or should be uncovered for inspection, or requires special testing, inspection or approval.

C) Verify that tests, equipment, and systems start-up and operating and maintenance instructions are conducted as required by the construction documents and in the presence of the required personnel, and that Contractor maintains adequate records thereof; inspect, record and report to Consultant appropriate details relative to the test procedures and start-ups. Accompany visiting inspectors representing public or other agencies having jurisdiction over the Project, record the outcome of these inspections, and report to Consultant.

ii. Consultant must provide construction inspections to verify materials and installations conform to construction documents; prepare daily, weekly, and monthly inspection reports documenting Contractor construction activities and progress during field inspection visits; and perform intermittent erosion control inspections.

1. Consultant assumes **1** civil inspector half-time 20-hours per week for **4** months,

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2. Overtime, standard rate, 1½ time, etc. included for weekend/night work.

B. Task 3.2 Project Closeout

i. Consultant must compile non-conformance list prior to Substantial Completion; schedule and conduct Substantial Completion inspection; prepare Substantial Completion punch list generated from Substantial Completion inspection; track items on punch list and note completed items; and complete and distribute Substantial Completion certificates.

ii. Consultant must schedule and conduct Final Completion inspection; and complete and distribute Final Completion certificates.

iii. Consultant must provide all documents in an electronic version that matches the City's filing system, so it can be imported into City's files.

4. UTILITY COORDINATION

A. Task 4.1 Utility Coordination

i. Consultant must complete the Acceptance of Construction (AOC) application and all other necessary documents to obtain MCESD AOC approval.

5. MATERIALS TESTING

A. Task 5.1 Quality Control (QC) Test Program

i. Consultant must review and verify Contractor's Quality Control material test type and frequencies are consistent with City and MAG; review and evaluate Contractor's QC test schedule and provide recommendations on acceptance; and review and evaluate all Contractor sampling, test, and inspection results for conformance with construction documents.

6. RECORD DRAWINGS

A. **Task 6.1 Record Drawings**

i. Review and monitor Contractor's weekly updates on red-line drawing set.

ii. Transfer red-line comments to City's construction plans to create record drawings.

iii. Provide resident engineer and/or architect and/or landscape architect stamp/certification on record drawings cover sheet. Ensure all required signatures on the cover sheet.

iv. Provide and deliver record drawings digital pdf format to the City as required for as-built submittal process at city CM.

7. SUBCONSULTANTS / ALLOWANCES:

Allowance 1 - Reimbursables

Reimbursable expenses have been identified for this assignment as follows:

1. Mail and Courier
2. Reproduction
3. Scanning/Digitizing
4. Special Meeting/Presentation

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Allowance 2 – Owner's Allowance

ASSUMPTION, CLARIFICATIONS, AND EXCLUSIONS

1. Application fees for City reviews and permits will be paid by CITY.
2. Materials testing firm will be provided by the Contractor.
3. The Owner's Allowance will only be utilized with prior written approval from the City representative.
4. The Direct Expense Allowance will be used for normal reimbursable expenses on the project. Items must be billed at cost and backup must be provided with pay applications.

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EXHIBIT "B"
COMPENSATION AND FEES

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EXHIBIT "B"
POST-DESIGN & CONSTRUCTION MANAGEMENT
SCOPE OF SERVICES
FEE SCHEDULE

WW2206.454 - Reclaimed Water Pipe Extension
Germann Road and Hamilton Street Project
(NOT TO EXCEED)

Task	Description	Cost
1	**PRE-CONSTRUCTION ASSISTANCE**	
1.1	Pre-Construction Assistance	$ 2,500.00
	SUBTOTAL TASK 1:	**$ 2,500.00**
2	**CONSTRUCTION MANAGEMENT**	
2.1	Construction Meetings	$ 5,970.00
2.2	CPM Schedule	$ 3,790.00
2.3	Requests for Information (RFI)	$ 6,840.00
2.4	Shop Drawing Submittals	$ 9,960.00
2.5	Requests for Proposal (RFP)	$ 2,555.00
2.6	Field Directive (FD)	$ 3,575.00
2.7	Contractor Payment Applications	$ 2,120.00
	SUBTOTAL TASK 2:	**$ 34,810.00**
3	**CONSTRUCTION INSPECTION**	
3.1	Inspection Services (Civil, CWI, and Spec. Struct. Insp)	$ 60,840.00
3.2.1	Substantial / Final Completion	$ 4,360.00
3.2.2	Project Documentation / Closeout	$ 5,140.00
	SUBTOTAL TASK 3:	**$ 70,340.00**
4	**UTILITY COORDINATION**	
4.1	AOC Application to MCESD	$ 2,370.00
	SUBTOTAL TASK 4:	**$ 2,370.00**
5	**MATERIALS TESTING**	
5.1	Review Contractor's QC Test Results	$ 2,820.00
	SUBTOTAL TASK 5:	**$ 2,820.00**
6	**RECORD DRAWINGS**	
6.1	Review / Verify Contractor Redlines	$ 2,370.00
6.2	Record Drawings	$ 10,780.00
	SUBTOTAL TASK 6:	**$ 13,150.00**
ALLOWANCES		
Direct Expense Allowance		$ 1,000.00
Owner's Allowance		$ 15,000.00
	SUBTOTAL ALLOWANCES:	**$ 16,000.00**
	PROJECT TOTAL:	**$ 141,990.00**

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CITY OF CHANDLER
RECLAIMED WATER PIPE EXTENSION
GERMANN ROAD AND HAMILTON STREET
CONSTRUCTION MANAGEMENT PHASE FEE

TASK No.	TASK DESCRIPTION	Principal	Sr Const Mgr	Const. PM	Project Engineer	Sr. Insp / Spec Insp	Senior CADD Tech	Senior Admin	<PROJECT ROLE
		-	David M. Dave C.	Jeff J.	Kiarash R.	Kristen R.	Kam C. Amber A.	Brandy N.	<NAME OF PERSON
		$280	$ 260	$ 225	$ 160	$ 160	$ 135	$ 115	<HOURLY RATES
									TOTAL HOURS PER TASK
1.0	**Preconstruction Assistance**	**0**	**0**	**4**	**4**	**6**	**0**	**0**	**14**
1.1	Preconstruction Assistance			4	4	6	0	0	14
2.0	**Construction Management**	**0**	**0**	**60**	**88**	**26**	**4**	**22**	**200**
2.1	Conduct Construction Meetings			18	8	4	0	0	30
2.2	Review Contractors CPM Schedule, Updates, Look Ahead			14	0	4	0	0	18
2.3	Request for Information (RFIs)			4	24	4	4	8	44
2.4	Shop Drawing Submittals			4	48	0	0	12	64
2.5	Request for Proposals (RFP)			8	0	4	0	1	13
2.6	Field Directives (FD)			4	8	8	0	1	21
2.7	Contractor Payment Applications			8	0	2	0	0	10
3.0	**Construction Inspection**	**0**	**0**	**56**	**28**	**330**	**0**	**4**	**418**
3.1	Construction Inspection / CWI and Special Inspections			40	4	320	0	0	364
3.2.1	Substantial Completion / Final Completion / Punch List			8	8	8	0	0	24
3.2.2	Project Documentation / Closeout			8	16	2	0	4	30
4.0	**Utility Coordination**	**0**	**0**	**2**	**8**	**4**	**0**	**0**	**14**
4.1	AOC Applications to MCESD			2	8	4	0	0	14
5.0	**Materials Testing**	**0**	**0**	**4**	**4**	**8**	**0**	**0**	**16**
5.1	Verify Contractor's Material Test Type and Frequency Meet Requirements			4	4	8	0	0	16
6.0	**Record Drawings**	**0**	**0**	**6**	**24**	**16**	**40**	**0**	**86**
6.1	Review and Monitor Contractor Redlines			2	4	8	0	0	14
6.2	Prepare Record Drawings / Certification / Turnover			4	20	8	40	0	72
Allowances		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
All 1	Reimbursables								0
All 2	Owner's Allowance								0
	TOTAL HOURS	**0**	**0**	**132**	**156**	**390**	**44**	**26**	**748**

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EXHIBIT "C"
INSURANCE REQUIREMENTS

1. General.

1.1 At the same time as execution of this Agreement, Consultant must furnish City a certificate of insurance on a standard insurance industry ACORD form. The ACORD form must be issued by an insurance company authorized to transact business in the State of Arizona possessing a current A.M. Best, Inc. rating of A-7, or better and legally authorized to do business in the State of Arizona with policies and forms satisfactory to City. Provided, however, the A.M. Best rating requirement will not be deemed to apply to required Workers' Compensation coverage.

1.2 Consultant and any of its subconsultants must procure and maintain, until all of their obligations have been discharged, including any warranty periods under this Agreement are satisfied, the insurances set forth below.

1.3 The insurance requirements set forth below are minimum requirements for this Agreement and in no way limit the indemnity covenants contained in this Agreement.

1.4 City in no way warrants that the minimum insurance limits contained in this Agreement are sufficient to protect Consultant from liabilities that might arise out of the performance of the Agreement services under this Agreement by Consultant, its agents, representatives, employees, subconsultants, and Consultant is free to purchase any additional insurance as may be determined necessary.

1.5 Failure to demand evidence of full compliance with the insurance requirements in this Agreement or failure to identify any insurance deficiency will not relieve Consultant from, nor will it be considered a waiver of its obligation to maintain the required insurance at all times during the performance of this Agreement.

1.6 Use of subconsultants: If any work is subcontracted in any way, Consultant must execute a written Agreement with subconsultant containing the same Indemnification Clause and Insurance Requirements as City requires of Consultant in this Agreement. Consultant is responsible for executing the Agreement with the subconsultant and obtaining Certificates of Insurance and verifying the insurance requirements.

2. Minimum Scope and Limits of Insurance. Consultant must provide coverage with limits of liability not less than those stated below.

2.1 *Professional Liability.* If the Agreement is the subject of any professional services or work performed by Consultant, or if Consultant engages in any professional services or work adjunct or residual to performing the work under this Agreement, Consultant must maintain Professional Liability insurance covering errors and omissions arising out of the work or services performed by Consultant, or anyone employed by Consultant, or anyone whose acts, mistakes, errors and omissions Consultant is legally liable, with a liability limit of $1,000,000 each claim and $2,000,000 all claims. In the event the Professional Liability

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insurance policy is written on a "claims made" basis, coverage must extend for 3 years past completion and acceptance of the work or services, and Consultant, or its selected Design Professional will submit Certificates of Insurance as evidence the required coverage is in effect. The Design Professional must annually submit Certificates of Insurance citing that the applicable coverage is in force and contains the required provisions for a 3 year period.

2.2 *Commercial General Liability-Occurrence Form.* Consultant must maintain "occurrence" form Commercial General Liability insurance with a limit of not less than $2,000,000 for each occurrence, $4,000,000 aggregate. Said insurance must also include coverage for products and completed operations, independent contractors, personal injury and advertising injury. If any Excess insurance is utilized to fulfill the requirements of this paragraph, the Excess insurance must be "follow form" equal or broader in coverage scope than underlying insurance.

2.3 *Automobile Liability-Any Auto or Owned, Hired and Non-Owned Vehicles*
Vehicle Liability: Consultant must maintain Business/Automobile Liability insurance with a limit of $1,000,000 each accident on Consultant owned, hired, and non-owned vehicles assigned to or used in the performance of Consultant's work or services under this Agreement. If any Excess or Umbrella insurance is utilized to fulfill the requirements of this paragraph, the Excess or Umbrella insurance must be "follow form" equal or broader in coverage scope than underlying insurance.

2.4 *Workers Compensation and Employers Liability Insurance:* Consultant must maintain Workers Compensation insurance to cover obligations imposed by federal and state statutes having jurisdiction of Consultant employees engaged in the performance of work or services under this Agreement and must also maintain Employers' Liability insurance of not less than $1,000,000 for each accident and $1,000,000 disease for each employee.

3. Additional Policy Provisions Required.

3.1 *Self-Insured Retentions or Deductibles*. Any self-insured retentions and deductibles must be declared and approved by City. If not approved, City may require that the insurer reduce or eliminate any deductible or self-insured retentions with respect to City, its officers, officials, agents, employees, and volunteers.

3.1.1. Consultant's insurance must contain broad form contractual liability coverage.

3.1.2. Consultant's insurance coverage must be primary insurance with respect to City, its officers, officials, agents, and employees. Any insurance or self-insurance maintained by City, its officers, officials, agents, and employees will be in excess of the coverage provided by Consultant and must not contribute to it.

3.1.3. Consultant's insurance must apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability.

3.1.4. Coverage provided by Consultant must not be limited to the liability assumed under the indemnification provisions of this Agreement.

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3.1.5. The policies must contain a severability of interest clause and waiver of subrogation against City, its officers, officials, agents, and employees, for losses arising from Work performed by Consultant for City. (Does not apply to Professional Liability coverage.)

3.1.6. Consultant, its successors and or assigns, are required to maintain Commercial General Liability insurance as specified in this Agreement for a minimum period of 3 years following completion and acceptance of the Work. Consultant must submit a Certificate of Insurance evidencing Commercial General Liability insurance during this 3-year period containing all the Agreement insurance requirements, including naming City of Chandler, its agents, representatives, officers, directors, officials and employees as Additional Insured as required.

3.1.7. If a Certificate of Insurance is submitted as verification of coverage, City will reasonably rely upon the Certificate of Insurance as evidence of coverage, but this acceptance and reliance will not waive or alter in any way the insurance requirements or obligations of this Agreement.

3.2. *Insurance Cancellation During Term of Agreement.*

3.2.1. If any of the required policies expire during the life of this Agreement, Consultant must forward renewal or replacement Certificates to City within 10 days after the renewal date containing all the required insurance provisions.

3.2.2. Each insurance policy required by the insurance provisions of this Agreement must provide the required coverage and must not be suspended, voided or canceled except after thirty (30) days prior written notice has been given to City, except when cancellation is for non-payment of premium, then ten (10) days prior notice may be given. Such notice must be sent directly to Chandler Law-Risk Management Department, Post Office Box 4008, Mailstop 628, Chandler, Arizona 85225. If any insurance company refuses to provide the required notice, Consultant or its insurance broker must notify City of any cancellation, suspension, non-renewal of any insurance within seven (7) days of receipt of insurers' notification to that effect.

3.3 City as Additional Insured. The policies are to contain, or be endorsed to contain, the following provisions:

3.3.1. The Commercial General Liability and Automobile Liability policies are to contain, or be endorsed to contain, the following provisions: City, its officers, officials, agents, and employees are additional insureds with respect to liability arising out of activities performed by, or on behalf of, Consultant; Products and Completed operations of Consultant; and automobiles owned, leased, hired, or borrowed by Consultant.

3.3.2. City, its officers, officials, agents, and employees must be additional insureds to the full limits of liability purchased by Consultant even if those limits of liability are in excess of those required by this Agreement.

Docusign Envelope ID: EAF5A188-B9E3-40FD-A860-A1E17EBDAD2F

EXHIBIT "D"
SPECIAL CONDITIONS

DESIGN SERVICES

Standard Details and Specifications. Consultant must be familiar with City's latest revision of the MAG Specifications and MAG Standard Details as amended by City. City's current amendment to the MAG Specifications, part of City's Unified Development Manual, may be found and downloaded from City's website at http://www.chandleraz.gov/udm.

City Ownership of Project Documents. All work products (electronically or manually generated) including, but not limited to: plans, specifications, cost estimates, field notes, tracings, studies, investigations, design analyses, original drawings, original mylars, Computer Aided Drafting and Design (CADD) file diskettes which reflect all final drawings, and other related documents which are prepared in the performance of this Agreement (collectively referred to as "Documents") are to be and remain the property of City and are to be delivered to the Project Manager before the final payment is made to Consultant. In the event these Documents are altered, modified or adapted without the written consent of Consultant, which consent Consultant must not unreasonably withhold, City agrees to hold Consultant harmless to the extent permitted by law from the legal liability arising out of City's alteration, modification or adaptation of the Documents.

Re-use of Documents. The parties agree the documents, drawings, specifications and designs, although the property of City, are prepared for this specific project and are not intended nor represented by Consultant to be suitable for re-use for any other project. Any re-use without written verification or adaptation by Consultant for the specific purpose intended will be at City's sole risk and without liability or legal exposure to Consultant.

Documents to Bear Seal. Consultant and its subconsultants must endorse by professional seal all plans, works, and deliverables prepared by each for this Agreement as required by state law.

ACCESS TO SECURED FACILITIES

1. Contract Worker Access Controls, Badge and Key Access Requirements. A Contract Worker from Consultant's firm must not be allowed to begin work in any City facility without: (A) The prior completion and City's acceptance of the required background screening; and (8) when required, the Contract Worker's receipt of a City issued badge. A badge will be issued to a Contract Worker solely for access to City facility(s) to which the Contract Worker is assigned. Each Contract Worker who enters a City facility must use the badge issued to the Contract Worker.

2. Badges. After receipt of the badge application, the Contract Worker will proceed to the Badging Office for processing of the badge application and issuance of the badge. City will not process the badge application until the Contract Worker satisfies the required Background Screening (as defined herein). The Contract Worker must comply with all requirements and furnish all requested information as requested by the Badging Office. Any and all fees associated with security badging will be assessed in compliance with Chandler City Code §4-22.

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3. Key Access Procedures. If the Contract Worker's services require keyed access to enter a City facility(s), a separate key issue/return form must be completed and submitted by Consultant for each key issued.

4. Stolen or Lost Badges or Keys. Consultant must report lost or stolen badges or keys to City immediately. A new badge application or key issue form must be completed and submitted along with payment of the applicable fees prior to issuance of a new badge or key.
5. Return of Badges or Keys. All badges and keys are the property of City and must be returned to City at the Badging Office within one (1) business day of when the Contract Worker's access to a City facility is no longer required to furnish the services under this Agreement. Consultant must collect a Contract Worker's badge and key(s) upon the termination of the Contract Worker's employment; when the Contract Worker's services are no longer required at the particular City facility(s); or upon termination, cancellation or expiration of this Agreement.

6. Consultant’s default under this Section must include, but is not limited to the following: (1) Contract Worker gains access to a City facility(s) without the proper badge or key; (2) Contract Worker uses a badge or key of another to gain access to a City facility; (3) Contract Worker commences services under this Agreement without the proper badge, key or Background Screening; (4) Contract Worker or Consultant submits false information or negligently submits wrong information to City to obtain a badge, key or applicable Background Screening; or (5) Consultant fails to collect and timely return Contract Worker's badge or key upon termination of Contract Worker's employment, reassignment of Contract Worker to another City facility or upon the expiration, cancellation or termination of this Agreement. Consultant acknowledges and agrees that the access control, badge and key requirements in this Section are necessary to preserve and protect public health, safety and welfare. Accordingly, Consultant agrees to properly cure any default under this Section within three (3) business days from the date notice of default is sent by City. The parties agree that Consultant’s failure to properly cure any default under this Section must constitute a breach of this Section. In addition to any other remedy available to City at law or in equity, Consultant must be liable for and must pay to City the sum of one thousand dollars ($1,000.00) for each breach by Consultant of this Section. The parties further agree that the sum fixed above is reasonable and approximates the actual or anticipated loss to City at the time and making of this Agreement in the event that Consultant breaches this Section. Further, the parties expressly acknowledge and agree to the fixed sum set forth above because of the difficulty of proving City's actual damages in the event that Consultant breaches this Section. The parties further agree that three (3) breaches by Consultant of this Section arising out of any default within a consecutive period of three (3) months or three (3) breaches by Consultant of this Section arising out of the same default within a period of twelve (12) consecutive months will constitute a material breach of this Agreement by Consultant and City expressly reserves all of its rights, remedies and interests under this Agreement, at law and in equity including, but not limited to, termination of this Agreement.

Docusign Envelope ID: EAF5A188-B9E3-40FD-A860-A1E17EBDAD2F

EXHIBIT "E"
SUBCONSULTANT DOCUMENTS WITH CONSULTANT

Any subconsultant assumptions, clarifications, exclusions, terms & conditions, signature blocks, etc. included are strictly between the Consultant and their subconsultants, and do not apply to the Agreement between the Consultant and the City.

N/A

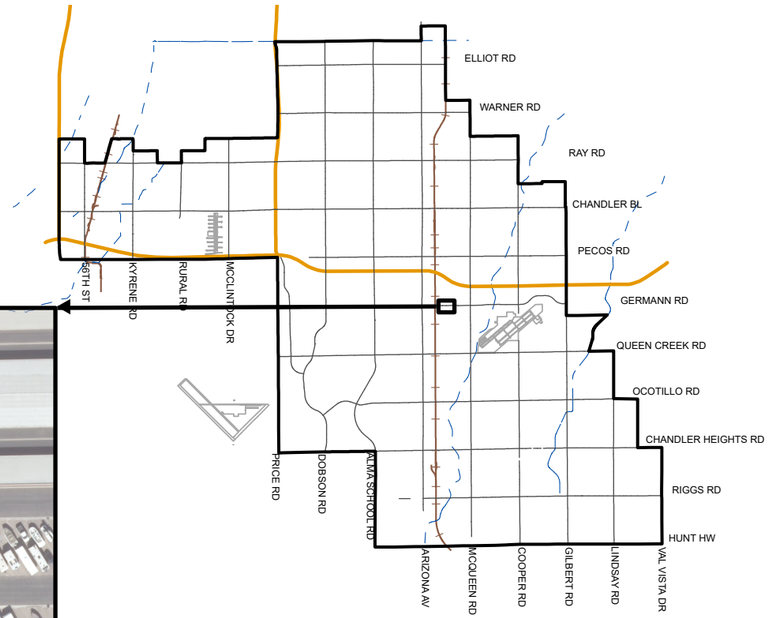
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EXHIBIT "F"
FEDERAL REQUIREMENTS

N/A

RECLAIMED WATER PIPE EXTENSION
GERMANN ROAD AND HAMILTON STREET CONSTRUCTION MANAGEMENT SERVICES
PROJECT NO. WW2206.454





MEMO NO. CP25-127

PROJECT LOCATION

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CHANDLER arizona
Community of Innovation

City Council Memorandum Public Works & Utilities Memo No. CP25-128

Date: June 12, 2025
To: Mayor and Council
Thru: Joshua H. Wright, City Manager
Andy Bass, Deputy City Manager
John Knudson, Public Works and Utilities Director
Daniel Haskins, Capital Projects Division Manager
From: Ivan Magana, Engineer
Subject: Construction Services Agreement No. ST2103.504, SRP Contract No. 4225073, with Salt River Project (SRP), for the Ray Road and Dobson Road Intersection Improvements

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Proposed Motion:

Move City Council award Construction Services Agreement No. ST2103.504, SRP Contract No. 4225073, to SRP, for the Ray Road and Dobson Road Intersection Improvements, in an amount not to exceed $328,834.

Background/Discussion:

On September 18, 2023, City Council approved a design agreement for the Ray Road and Dobson Road Intersection Improvements. This project includes widening the intersection of Ray and Dobson roads to improve capacity and safety, as well as the addition of bike lanes, curb and gutter, sidewalk, raised medians, traffic signal modifications, street lighting, and storm drainage. As part of the project, SRP will underground the 12 kV distribution line through the project area on Dobson Road. The scope of work to be performed by SRP for this agreement includes the design and installation of pad-mounted devices and 12 kV conductors.

There are two agreements with SRP on the agenda that are related to this project. This agreement is for the actual underground work of the electrical lines, while the other agreement is for the relocation of SRP electrical conductors and equipment within the project area.

Evaluation:

SRP will self-perform the work, providing the trench, conduit, backfill, and restoration. The city is required to reimburse SRP for all associated costs to relocate its facilities.

Fiscal Impact

Account No.	Fund Name	Program Name	Dollar Amount	CIP Funded Y/N
411.3310.6111.0.6ST754	GO Bonds	Ray Rd/Dobson Rd Intersection	$328,834	Y

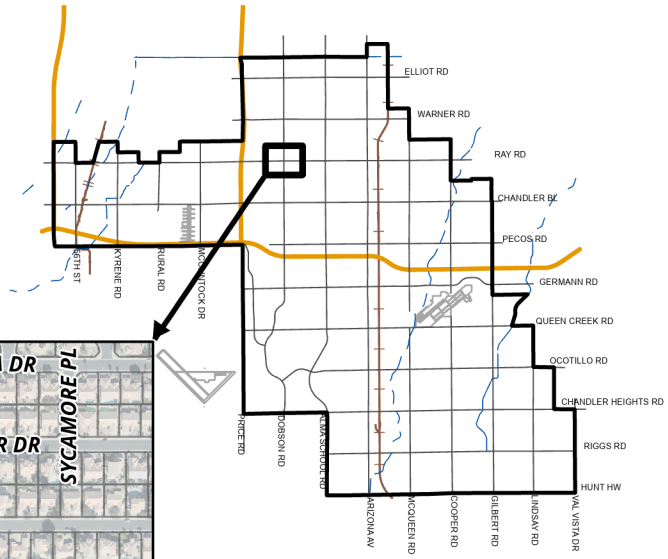
Attachments

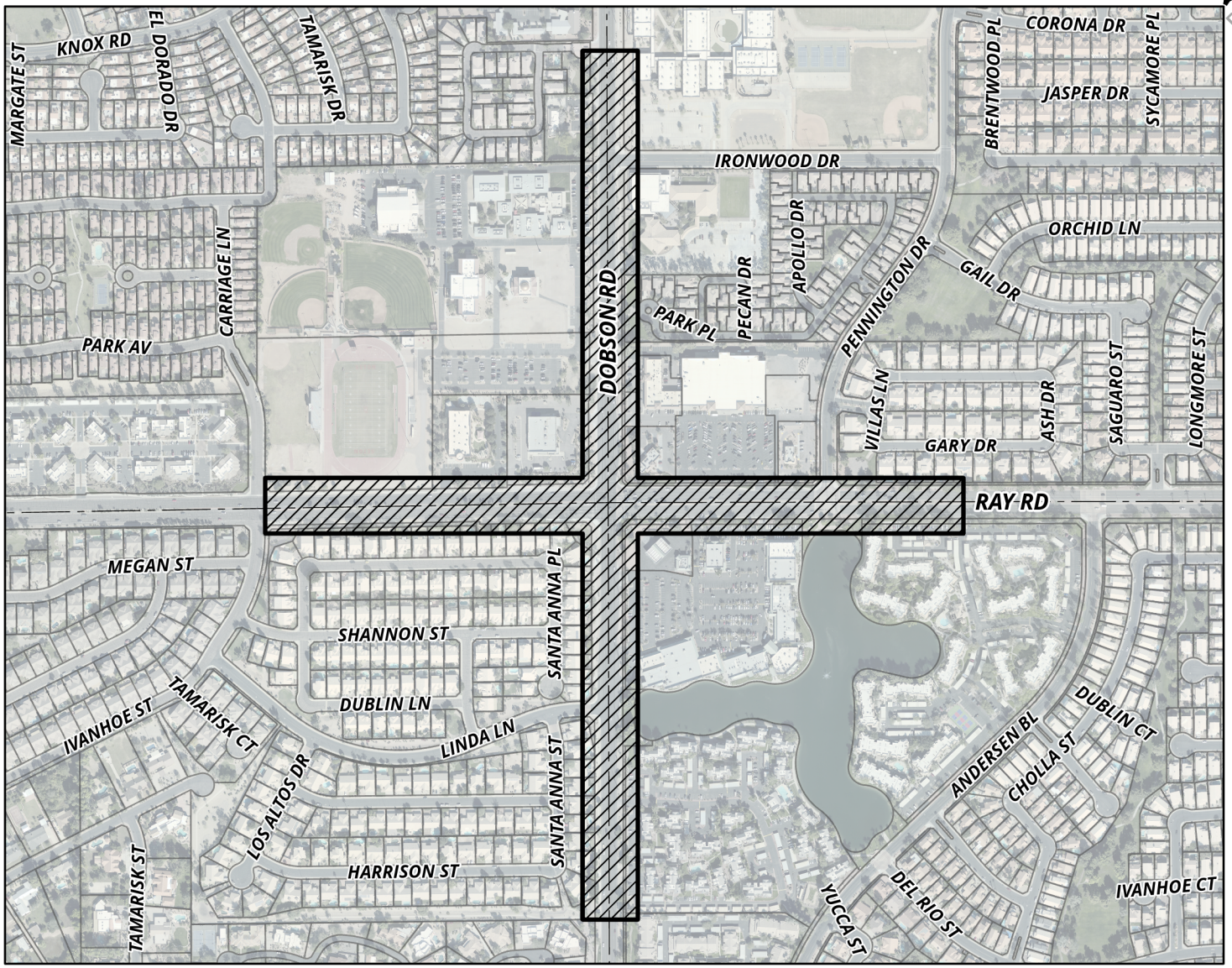
Location Map

SRP Agreement

CHANDLER arizona

RAY ROAD AND DOBSON ROAD INTERSECTION IMPROVEMENTS PROJECT NO. ST2103.504





MEMO NO. CP25-128

PROJECT LOCATION

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Docusign Envelope ID: 634D4F91-BECE-4DDE-83ED-133A1D962651

Design Services Contract (Municipal – Distribution)

Customer Construction Services
SRP XCT-320
P.O. Box 52025
Phoenix, AZ 85072-2025

Contract #: 4225073
Issue Date: 04/16/2025

ATTN: DENNIS AUST
CITY OF CHANDLER

SRP Contact: Adam Dudley
Contact Phone: 602-236-6833
Contact Fax:

The Salt River Project Agricultural Improvement and Power District, an agricultural improvement district organized and existing under the laws of the State of Arizona (SRP), and CITY OF CHANDLER, a municipal corporation organized and existing under the laws of the State of Arizona, (Municipality) enter into this contract (Contract) for the design of electrical facilities for the following Municipality project (Project):

Project:	CUS BA UE CH RAY & DOBSON 12KV UNDERBUILD CONV	**Work Order #:**	T3585706
Location:	RAY RD AND DOBSON RD, CHANDLER	**Municipality Job #:**	

This Contract includes the attached Terms and Conditions, and describes the general obligations of SRP and the Municipality. Except as otherwise specifically provided in this Contract, any changes, amendments or modifications to this Contract shall be in writing and signed by both parties.

Municipality understands that SRP will not begin design until Municipality signs and returns this Contract. Upon receipt of the signed Contract, SRP will commence design and defer collecting any design fees or costs until the parties execute a contract for construction of the Project.

Upon completion of the job design, SRP shall provide to the Municipality a set of design drawings and a contract for construction of the Project. If Municipality desires SRP to proceed with construction of the Project in accordance with the design drawings, Municipality shall execute and return the Construction Services Contract and pay SRP the specified fees for construction of the Project. Municipality acknowledges and agrees that the fees payable under the Construction Services Contract will include the design fees and costs incurred by SRP under this Contract. **If Municipality cancels the Project at any time, or if Municipality fails to execute a contract with SRP for construction of the Project within 120 days after SRP delivers design drawings for the Project to Municipality, Municipality agrees to reimburse SRP for the design fees and costs incurred by SRP under this Contract.** If the Contract is terminated, Customer may request in writing that SRP reschedule the Project, in which case, SRP may require a complete redesign, as well as a recalculation and repayment by Customer of CIAC. No credits will be offered for prior design or construction work performed by SRP to the extent such prior work is not part of the scope of the revised design or construction work.

Further, if the Customer does not execute this contract within ninety (90) days, SRP reserves the right to revise the Conceptual Project Estimate and issue an updated contract. In addition, delays in the execution of the contract may cause construction delays.

For informational purposes only, the following conceptual Project estimate is provided to the Municipality. This conceptual estimate is non-binding.

Conceptual Project Estimate:	$328,834.00
Comments:	Customer to install approximately 1,635 linear feet of trench & conduit. Customer responsible for backfill and restoration. SRP to install approximately 4 three phase pad mounted device(s). SRP to install approximately 1 riser(s). SRP to install approximately 9,081 feet of aluminum conductor.

SRP shall not be required to perform inspections or begin any construction or installation work on the Project until Municipality (i) approves and returns the signed Construction Services Contract that will be provided upon completion of this Design Services Contract, (ii) accepts the completed design drawings by signing them, (iii) pays SRP the specified fees for construction of the Project, (iv) provides SRP the approved Municipal permit(s) and (v) provides to SRP a copy of a deed or deeds evidencing ownership of all the real property that is encompassed within or will be affected by the Project or other written documentation acceptable to SRP that establishes Municipality's authority in connection with the Project before SRP will begin any construction or installation work under this Contract. If Municipality is unable to provide such documentation, and as a result SRP is required to modify its designs for the Project, Municipality shall be responsible for paying additional costs of the redesign work. If Municipality changes the Project, or if there is any change to the information regarding the Project provided by Municipality and relied upon by SRP, SRP will charge Municipality and Municipality shall pay for any additional costs incurred by SRP, including but not limited to redesign and engineering costs.

SRP's delivery of this Contract to Municipality constitutes an offer to perform the design services on the terms and conditions set forth in this Contract. Municipality may accept this offer by signing this Contract (with no additions, deletions, or modifications) and returning it to SRP. This offer shall expire if Municipality has not signed and returned this Contract to SRP within 120 days of the

date first set forth above.

Municipality understands and agrees to the terms and conditions of this Contract. The undersigned represents and warrants that he or she has the authority to sign this Contract on behalf of Municipality.

For Customer:

Authorized Signature: Daniel Haskins Date: May 9, 2025

Printed Name: Daniel Haskins Title: CIP City Engineer

For SRP:

Authorized Signature: Date:

Printed Name: Tim R Sandberg Title: MANAGER DESIGN

Terms and Conditions

1. The existing applicable SRP Rules and Regulations, as they may be amended or revised from time to time by SRP, and all terms and conditions thereof, are adopted and incorporated herein by reference as part of this Contract. The Rules and Regulations can be found at www.srpnet.com and are on file at the principal offices of SRP.
2. SRP shall construct all electric facilities up to the point(s) of delivery, including any connections to electric, in accordance with the SRP Rules and Regulations and SRP construction specifications and practices.
3. Municipality shall timely provide SRP all drawings and data requested by SRP that are pertinent to the design of the Municipality Project. SRP shall review such drawings and data for compatibility with SRP facilities and shall have sole discretion in determining whether the Municipality facilities may be used with SRP's facilities.
4. Before beginning construction, Municipality shall provide SRP executed originals of the Contract, all requested easements, including any easements required from third parties, for SRP to access and maintain the electric facilities installed under this Contract, using SRP's standard form(s) of easement. Municipality understands and agrees that SRP shall have no obligation to provide electric service to the Project unless and until Municipality has provided all such easements. Municipality, at all times, shall permit SRP to access and maintain any SRP electric facility on Municipality property.
5. Municipality shall require that any construction work performed by Municipality or its contractor or subcontractor shall be in accordance with national and local building and safety codes, the SRP Electric Service Specifications and construction drawings, and the Electric Utility Service Entrance Requirements Committee.
6. Municipality shall secure all required State, County, and local permits and approvals.
7. If Municipality decides to provide trenching, provision and installation of conduit, backfilling and/or surveying, ("Municipality Work"), then all Municipality Work shall conform to SRP's standards, and Municipality shall permit SRP to inspect, at any time, any Municipality Work or Municipality-provided facility. If Municipality decides to provide surveying, then Municipality shall be responsible for setting or verification of road right-of-way monuments and/or construction staking, and Municipality shall forward all results of survey to SRP for review and approval. If, at the time of inspection, there are no offset stakes to enable SRP to verify that the facilities are installed within the easements granted to SRP, SRP's Survey Department will reset the offset staked at Municipality's expense. Any inspection by SRP shall not be deemed an approval of any Municipality-provided facility or a waiver by SRP of any right to enforce strict compliance with the terms and conditions of this Contract.
8. SRP shall not be responsible for, and Municipality shall indemnify, defend and hold harmless SRP and members of its governing bodies, its officers, agents and employees, for, from and against any and all claims, demands, suits, costs of defense, attorney's fees, witness fees of any type, losses, damages, expenses and liabilities ("Claims") arising out of or relating to Municipality's performance of the Municipality Work, including without limitation Municipality's breach of its obligations under this Agreement or Claims arising out of the performance of Municipality Work.
9. Prior to SRP's installing any electric facility, the Municipality shall install all water and sewer facilities and backfill. Municipality shall not install any curb, sidewalk, paving, or any conflicting foundation within the Project boundaries until SRP completes the installation of the electric facilities. Municipality shall and hereby does release SRP from any loss, damage, liability, cost, or expense incurred by Municipality arising out of (i) any delay by SRP in performing or completing its work or inspecting any Municipality Work or (ii) any loss or damage to any installation prohibited by this Section 9, even if such damage was caused by the negligent or intentional act or omission of SRP.
10. Municipality shall permit SRP to inspect, at any time, any Municipality provided facility. Any inspection by SRP shall not be deemed an approval of any Municipality provided facility or a waiver by SRP of any right to enforce strict compliance with the terms and conditions of this Contract.
11. Municipality, upon demand, shall reimburse SRP for the costs of relocation of facilities found to be installed at the wrong location or grade due to Municipality requested changes in property lines, easement grade, and/or errors in staking, trenching, or survey.
12. If Municipality's load grows to a total coincident demand of 6,740 kVA or greater, but less than 11,800 kVA, the load will be served from at least one dedicated SRP feeder circuit or a substation dedicated to serve only Municipality. Any dedicated feeder circuit(s) or substations shall be provided by SRP at the sole expense of Municipality. Notwithstanding the foregoing, Municipality may elect to provide its own substation at Municipality's sole expense. Any dedicated substation, whether provided by SRP or Municipality, shall be owned, operated, and maintained by Municipality or its agents at Municipality's sole expense.
13. This Contract shall be interpreted, governed by and construed in accordance with the substantive and procedural laws of the State of Arizona, without regard to conflicts of law principles. SRP and Municipality agree that any action, suit, or proceeding arising out of or relating to this Contract shall be initiated and prosecuted in a state or federal court of competent jurisdiction located in Maricopa County, Arizona, and the parties irrevocably submit to the jurisdiction and venue of such court. To the fullest extent permitted by law, SRP and Municipality hereby irrevocably waive any and all rights to a trial by jury and covenant and agree that neither will request a trial by jury, with respect to any legal proceeding arising out of or relating to this Contract.
14. The title to all work performed by SRP, or performed by Municipality at SRP's request and accepted by SRP, shall remain with SRP at all times.
15. Municipality shall meet with an SRP inspector before construction begins. The meeting may be scheduled by calling SRP Inspection Scheduling.
16. SRP's summer outage moratorium from May through September may result in delay in completing this Project.
17. This Contract is subject to A.R.S Section 38-511.

Docusign Envelope ID: 634D4F91-BECE-4DDE-83ED-133A1D962651

City Project No.:	**ST2103.504**
City Project Name**:**	**RAY ROAD AND DOBSON ROAD INTERSECTION IMPROVEMENTS**
SRP Project Name:	**CUS BA UE CH RAY & DOBSON 12KV UNDERBUILD CONV**
SRP Contract No.:	**4225073**
SRP Job Work Order No.:	**T3585706**
Job Location:	**RAY RD AND DOBSON RD, CHANDLER**
Amount:	**$328,834.00**

ADDITIONAL TERMS AND CONDITIONS:

- This Agreement is subject to A.R.S. 38-511

For Customer (City of Chandler):

MAYOR Signature: _____

Authorized Signature: Daniel Haskins Date: May 9, 2025

Printed Name: Daniel Haskins, P.E.

Title: CIP City Engineer

Approved as to Form: _____

City Attorney JMB

Attest: _____

City Clerk Seal

CHANDLER arizona
Community of Innovation

City Council Memorandum Public Works & Utilities Memo No. CP25-129

Date: June 12, 2025
To: Mayor and Council
Thru: Joshua H. Wright, City Manager
Andy Bass, Deputy City Manager
John Knudson, Public Works and Utilities Director
Daniel Haskins, Capital Projects Division Manager

From: Ivan Magana, Engineer
Subject: Construction Services Agreement No. ST2103.505, SRP Contract No. 4225072, with Salt River Project (SRP), for the Ray Road and Dobson Road Intersection Improvements

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Proposed Motion:

Move City Council award Construction Services Agreement No. ST2103.505, SRP Contract No. 4225072, to SRP, for the Ray Road and Dobson Road Intersection Improvements, in an amount not to exceed $352,235.

Background/Discussion:

On September 18, 2023, the City Council approved the design agreement for the Ray Road and Dobson Road Intersection Improvements. This project includes widening the intersection of Ray and Dobson roads to improve capacity and safety, as well as the addition of bike lanes, curb and gutter, sidewalk, raised medians, traffic signal modifications, street lighting, and storm drainage. As part of the project, SRP will need to relocate the underground 12KV distribution electrical infrastructure throughout the project area as required. The scope of work to be performed by SRP for this agreement includes the design and installation of pad-mounted devices and 12 kV conductors.

There are two agreements with SRP on the agenda related to this project. This agreement is for the relocation of SRP electrical conductors and equipment, while the other agreement with SRP is for the actual undergrounding of the electrical lines within the project area.

Evaluation:

SRP will self-perform the associated work, which includes all the trenching, conduit, backfill, and restoration needed to complete the project. The city is required to reimburse SRP for all associated costs to relocate its facilities.

Fiscal Impact

Account No.	Fund Name	Program Name	Dollar Amount	CIP Funded Y/N
411.3310.6111.0.6ST754	GO Bonds	Ray Rd/Dobson Rd Intersection	$352,235.00	Y

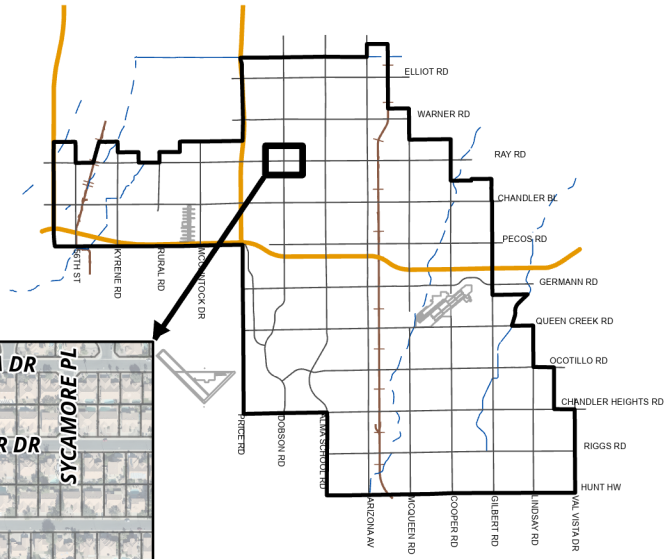
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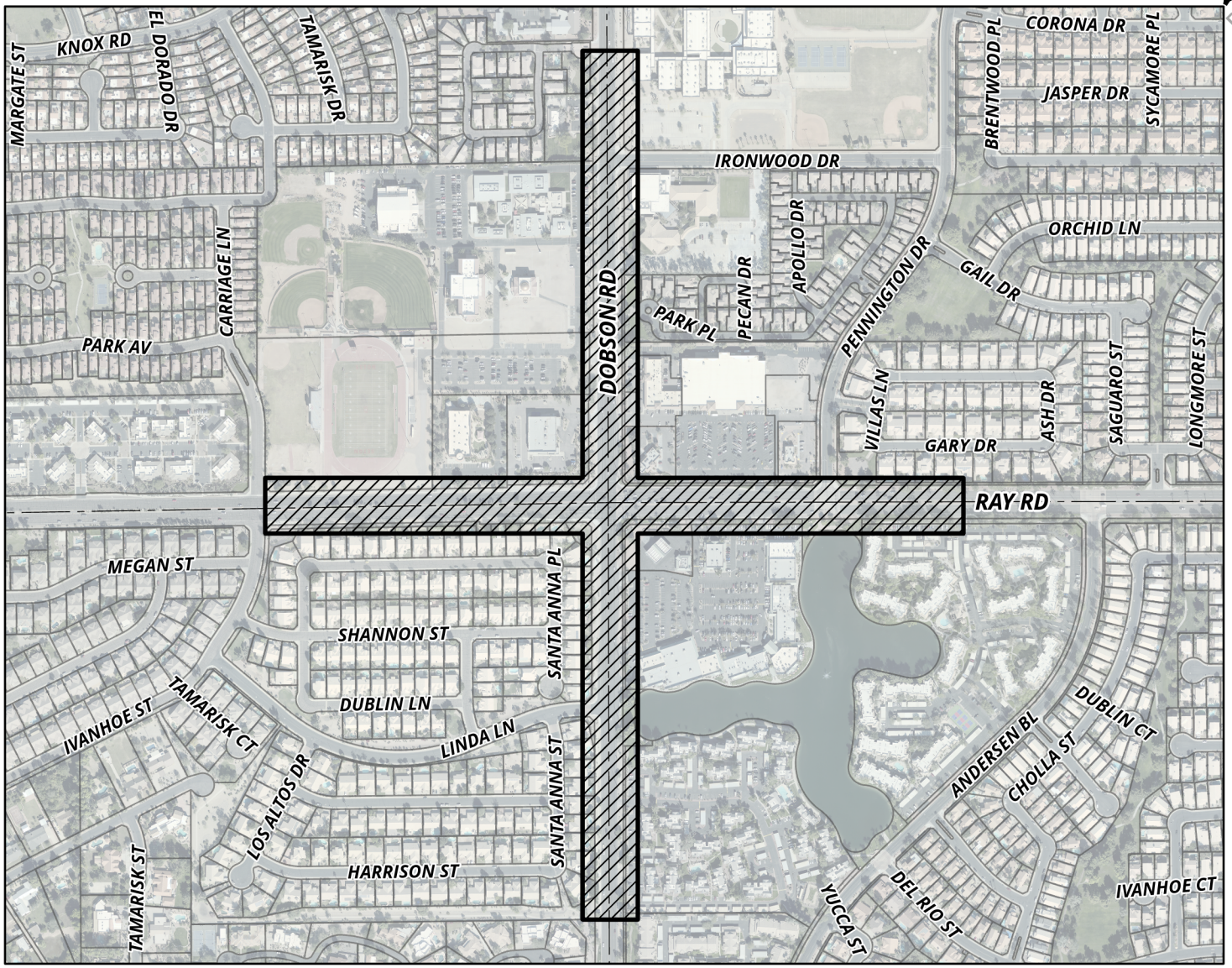
Location Map

SRP Agreement

CHANDLER arizona

RAY ROAD AND DOBSON ROAD INTERSECTION IMPROVEMENTS PROJECT NO. ST2103.505





MEMO NO. CP25-129

PROJECT LOCATION

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Docusign Envelope ID: F8D1B6DE-955D-4812-A888-6F435EBA3093

Design Services Contract (Municipal – Distribution)

Customer Construction Services
SRP XCT-320
P.O. Box 52025
Phoenix, AZ 85072-2025

Contract #: 4225072
Issue Date: 04/16/2025

ATTN: DENNIS AUST
CITY OF CHANDLER

SRP Contact: Adam Dudley
Contact Phone: 602-236-6833
Contact Fax:

The Salt River Project Agricultural Improvement and Power District, an agricultural improvement district organized and existing under the laws of the State of Arizona (SRP), and CITY OF CHANDLER, a municipal corporation organized and existing under the laws of the State of Arizona, (Municipality) enter into this contract (Contract) for the design of electrical facilities for the following Municipality project (Project):

Project:	CUS BA UE CH RAY & DOBSON UG RELOC	**Work Order #:**	T3582462
Location:	RAY RD AND DOBSON RD, CHANDLER	**Municipality Job #:**	

This Contract includes the attached Terms and Conditions, and describes the general obligations of SRP and the Municipality. Except as otherwise specifically provided in this Contract, any changes, amendments or modifications to this Contract shall be in writing and signed by both parties.

Municipality understands that SRP will not begin design until Municipality signs and returns this Contract. Upon receipt of the signed Contract, SRP will commence design and defer collecting any design fees or costs until the parties execute a contract for construction of the Project.

Upon completion of the job design, SRP shall provide to the Municipality a set of design drawings and a contract for construction of the Project. If Municipality desires SRP to proceed with construction of the Project in accordance with the design drawings, Municipality shall execute and return the Construction Services Contract and pay SRP the specified fees for construction of the Project. Municipality acknowledges and agrees that the fees payable under the Construction Services Contract will include the design fees and costs incurred by SRP under this Contract. **If Municipality cancels the Project at any time, or if Municipality fails to execute a contract with SRP for construction of the Project within 120 days after SRP delivers design drawings for the Project to Municipality, Municipality agrees to reimburse SRP for the design fees and costs incurred by SRP under this Contract.** If the Contract is terminated, Customer may request in writing that SRP reschedule the Project, in which case, SRP may require a complete redesign, as well as a recalculation and repayment by Customer of CIAC. No credits will be offered for prior design or construction work performed by SRP to the extent such prior work is not part of the scope of the revised design or construction work.

Further, if the Customer does not execute this contract within ninety (90) days, SRP reserves the right to revise the Conceptual Project Estimate and issue an updated contract. In addition, delays in the execution of the contract may cause construction delays.

For informational purposes only, the following conceptual Project estimate is provided to the Municipality. This conceptual estimate is non-binding.

Conceptual Project Estimate:	$352,235.00
Comments:	Customer to install approximately 1,295 linear feet of trench & conduit. Customer responsible for backfill and restoration. SRP to install approximately 1 single phase pad mounted device(s). SRP to install approximately 6 three phase pad mounted device(s). SRP to install approximately 10,560 feet of aluminum conductor.

SRP shall not be required to perform inspections or begin any construction or installation work on the Project until Municipality (i) approves and returns the signed Construction Services Contract that will be provided upon completion of this Design Services Contract, (ii) accepts the completed design drawings by signing them, (iii) pays SRP the specified fees for construction of the Project, (iv) provides SRP the approved Municipal permit(s) and (v) provides to SRP a copy of a deed or deeds evidencing ownership of all the real property that is encompassed within or will be affected by the Project or other written documentation acceptable to SRP that establishes Municipality's authority in connection with the Project before SRP will begin any construction or installation work under this Contract. If Municipality is unable to provide such documentation, and as a result SRP is required to modify its designs for the Project, Municipality shall be responsible for paying additional costs of the redesign work. If Municipality changes the Project, or if there is any change to the information regarding the Project provided by Municipality and relied upon by SRP, SRP will charge Municipality and Municipality shall pay for any additional costs incurred by SRP, including but not limited to redesign and engineering costs.

SRP's delivery of this Contract to Municipality constitutes an offer to perform the design services on the terms and conditions set forth in this Contract. Municipality may accept this offer by signing this Contract (with no additions, deletions, or modifications) and returning it to SRP. This offer shall expire if Municipality has not signed and returned this Contract to SRP within 120 days of the date first set forth above.

Municipality understands and agrees to the terms and conditions of this Contract. The undersigned represents and warrants that he or she has the authority to sign this Contract on behalf of Municipality.

For Customer:

Authorized Signature: Daniel Haskins Date: May 9, 2025

Printed Name: Daniel Haskins Title: CIP City Engineer

For SRP:

Authorized Signature: Date:

Printed Name: Tim R Sandberg Title: MANAGER DESIGN

Terms and Conditions

1. The existing applicable SRP Rules and Regulations, as they may be amended or revised from time to time by SRP, and all terms and conditions thereof, are adopted and incorporated herein by reference as part of this Contract. The Rules and Regulations can be found at www.srpnet.com and are on file at the principal offices of SRP.
2. SRP shall construct all electric facilities up to the point(s) of delivery, including any connections to electric, in accordance with the SRP Rules and Regulations and SRP construction specifications and practices.
3. Municipality shall timely provide SRP all drawings and data requested by SRP that are pertinent to the design of the Municipality Project. SRP shall review such drawings and data for compatibility with SRP facilities and shall have sole discretion in determining whether the Municipality facilities may be used with SRP's facilities.
4. Before beginning construction, Municipality shall provide SRP executed originals of the Contract, all requested easements, including any easements required from third parties, for SRP to access and maintain the electric facilities installed under this Contract, using SRP's standard form(s) of easement. Municipality understands and agrees that SRP shall have no obligation to provide electric service to the Project unless and until Municipality has provided all such easements. Municipality, at all times, shall permit SRP to access and maintain any SRP electric facility on Municipality property.
5. Municipality shall require that any construction work performed by Municipality or its contractor or subcontractor shall be in accordance with national and local building and safety codes, the SRP Electric Service Specifications and construction drawings, and the Electric Utility Service Entrance Requirements Committee.
6. Municipality shall secure all required State, County, and local permits and approvals.
7. If Municipality decides to provide trenching, provision and installation of conduit, backfilling and/or surveying, ("Municipality Work"), then all Municipality Work shall conform to SRP's standards, and Municipality shall permit SRP to inspect, at any time, any Municipality Work or Municipality-provided facility. If Municipality decides to provide surveying, then Municipality shall be responsible for setting or verification of road right-of-way monuments and/or construction staking, and Municipality shall forward all results of survey to SRP for review and approval. If, at the time of inspection, there are no offset stakes to enable SRP to verify that the facilities are installed within the easements granted to SRP, SRP's Survey Department will reset the offset staked at Municipality's expense. Any inspection by SRP shall not be deemed an approval of any Municipality-provided facility or a waiver by SRP of any right to enforce strict compliance with the terms and conditions of this Contract.
8. SRP shall not be responsible for, and Municipality shall indemnify, defend and hold harmless SRP and members of its governing bodies, its officers, agents and employees, for, from and against any and all claims, demands, suits, costs of defense, attorney's fees, witness fees of any type, losses, damages, expenses and liabilities ("Claims") arising out of or relating to Municipality's performance of the Municipality Work, including without limitation Municipality's breach of its obligations under this Agreement or Claims arising out of the performance of Municipality Work.
9. Prior to SRP's installing any electric facility, the Municipality shall install all water and sewer facilities and backfill. Municipality shall not install any curb, sidewalk, paving, or any conflicting foundation within the Project boundaries until SRP completes the installation of the electric facilities. Municipality shall and hereby does release SRP from any loss, damage, liability, cost, or expense incurred by Municipality arising out of (i) any delay by SRP in performing or completing its work or inspecting any Municipality Work or (ii) any loss or damage to any installation prohibited by this Section 9, even if such damage was caused by the negligent or intentional act or omission of SRP.
10. Municipality shall permit SRP to inspect, at any time, any Municipality provided facility. Any inspection by SRP shall not be deemed an approval of any Municipality provided facility or a waiver by SRP of any right to enforce strict compliance with the terms and conditions of this Contract.
11. Municipality, upon demand, shall reimburse SRP for the costs of relocation of facilities found to be installed at the wrong location or grade due to Municipality requested changes in property lines, easement grade, and/or errors in staking, trenching, or survey.
12. If Municipality's load grows to a total coincident demand of 6,740 kVA or greater, but less than 11,800 kVA, the load will be served from at least one dedicated SRP feeder circuit or a substation dedicated to serve only Municipality. Any dedicated feeder circuit(s) or substations shall be provided by SRP at the sole expense of Municipality. Notwithstanding the foregoing, Municipality may elect to provide its own substation at Municipality's sole expense. Any dedicated substation, whether provided by SRP or Municipality, shall be owned, operated, and maintained by Municipality or its agents at Municipality's sole expense.
13. This Contract shall be interpreted, governed by and construed in accordance with the substantive and procedural laws of the State of Arizona, without regard to conflicts of law principles. SRP and Municipality agree that any action, suit, or proceeding arising out of or relating to this Contract shall be initiated and prosecuted in a state or federal court of competent jurisdiction located in Maricopa County, Arizona, and the parties irrevocably submit to the jurisdiction and venue of such court. To the fullest extent permitted by law, SRP and Municipality hereby irrevocably waive any and all rights to a trial by jury and covenant and agree that neither will request a trial by jury, with respect to any legal proceeding arising out of or relating to this Contract.
14. The title to all work performed by SRP, or performed by Municipality at SRP's request and accepted by SRP, shall remain with SRP at all times.
15. Municipality shall meet with an SRP inspector before construction begins. The meeting may be scheduled by calling SRP Inspection Scheduling.
16. SRP's summer outage moratorium from May through September may result in delay in completing this Project.
17. This Contract is subject to A.R.S Section 38-511.

Docusign Envelope ID: F8D1B6DE-955D-4812-A888-6F435EBA3093

City Project No.:	**ST2103.505**
City Project Name**:**	**RAY ROAD AND DOBSON ROAD INTERSECTION IMPROVEMENTS**
SRP Project Name:	**CUS BA UE CH RAY & DOBSON UG RELOC**
SRP Contract No.:	**4225072**
SRP Job Work Order No.:	**T3582462**
Job Location:	**RAY RD AND DOBSON RD, CHANDLER**
Amount:	**$352,235.00**

ADDITIONAL TERMS AND CONDITIONS:

- This Agreement is subject to A.R.S. 38-511

For Customer (City of Chandler):

MAYOR Signature: _____

Authorized Signature: Daniel Haskins Date: May 9, 2025

Printed Name: Daniel Haskins, P.E.

Title: CIP City Engineer

Approved as to Form: _____

City Attorney

Attest: _____

City Clerk Seal

CHANDLER arizona
Community of Innovation

City Council Memorandum Public Works & Utilities Memo No. UA25-084

Date:	June 12, 2025
To:	Mayor and Council
Thru:	Joshua H. Wright, City Manager Andy Bass, Deputy City Manager John Knudson, Public Works and Utilities Director
From:	Josef Kennis, Wastewater Facilities Manager
Subject:	Purchase of Flow Meters, Level Meters, and Repair Services

Proposed Motion:

Move City Council approve the purchase of flow meters, level meters, and repair services from Western Environmental Equipment Co., utilizing City of Phoenix Contract No. 4701010048, in an amount not to exceed $162,932.49.

Background/Discussion:

The Public Works & Utilities Department (PW&U) administers an ongoing Wastewater Sewer Assessment Program to evaluate, prioritize, and repair deteriorated sewer pipes and manholes within the city's collection system. The program ensures compliance with federal and state regulations and complies with the Capacity Management and Operations Maintenance Program. The use of flow monitoring units, installed in manholes, will enable PW&U staff to evaluate existing capacity to guide future development.

This request is for an amendment to an existing purchase order with Western Environmental Equipment Co., to purchase two additional flow monitoring units. This action will increase the total number of flow monitoring units that the city has for the collection system to five.

Evaluation:

The City of Phoenix competitively solicited and awarded a contract for flow meters, level meters, and repair services to Western Environmental Equipment Co. The city has a current agreement with the City of Phoenix allowing for the cooperative use of the contract. Staff recommends use of this contract because of competitive pricing and quality customer service. The City of Phoenix contract is valid through August 15, 2029.

Financial Implications:

To date, the department has spent $99,360 in fiscal year 2024-2025 under an existing purchase order. An additional $63,572.49 is required to cover equipment costs through the end of the fiscal year due to additional needs.

Fiscal Impact

Account No.	Fund Name	Program Name	Dollar Amount	CIP Funded Y/N
615.3910.6817.0000.6WW266.0	Wastewater Capital	Sewer Assessment and Rehabilitation	$63,572.49	Y

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City Council Memorandum Public Works & Utilities Memo No. UA25-085

Date: June 12, 2025
To: Mayor and Council
Thru: Joshua H. Wright, City Manager
Andy Bass, Deputy City Manager
John Knudson, Public Works and Utilities Director
From: Josef Kennis, Wastewater Facilities Manager
Subject: Purchase of Replacement Furniture for Public Works and Utilities, Wastewater Collections Building

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Proposed Motion:

Move City Council approve the purchase of replacement furniture for Public Works and Utilities, Wastewater Collections Building, utilizing State of Arizona Contract No. CTR067399, with Elontec, LLC, in an amount not to exceed $206,168.10.

Background/Discussion:

The Wastewater Collections Building (also known as Building J), located at 975 East Armstrong Way, has served the city reliably since its construction in 2000. However, after 25 years of use and only minimal interior updates, the facility is in critical need of renovation to meet current operational demands. The existing workstations are outdated, cannot be upgraded, and do not support current operational requirements. Additionally, certain furniture is damaged beyond repair and needs immediate replacement. To address these challenges, staff propose replacement of the current workstations and flooring, leveraging a new layout focused on maximizing space efficiency and improving employee productivity.

This project will also address the need for adequate meeting space for staff training, operational briefings, and capital improvement project planning. This renovation will extend the building’s useful life, support the city's long-term staffing goals, and foster a more productive work environment.

Evaluation:

The State of Arizona competitively solicited and awarded a contract for statewide furniture, products, and related services. The city has a current agreement with the State of Arizona allowing for the cooperative usage of the State's contracts. Staff recommend the cooperative use of this contract.

Fiscal Impact

Account No.	Fund Name	Program Name	Dollar Amount	CIP Funded Y/N
615.3900.5360	Wastewater Operating	N/A	$206,168.10	N

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City Council Memorandum Public Works & Utilities Memo No. UA25-087

Date: June 12, 2025
To: Mayor and Council
Thru: Joshua H. Wright, City Manager
Andy Bass, Deputy City Manager
John Knudson, Public Works and Utilities Director
From: Josef Kennis, Wastewater Facilities Manager
Subject: Purchase of Heat, Ventilation, and Cooling (HVAC) Equipment, Installation, and Services

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Proposed Motion:

Move City Council approve the purchase of HVAC equipment, installation, and services, utilizing Mohave Educational Services Cooperative Contract No. 24B-SMC-0905, with Sun Mechanical Contracting, Inc., in an amount not to exceed $325,000.

Background/Discussion:

The Airport Water Reclamation Facility (AWRF) has fourteen evaporative cooling units installed throughout its campus. Four of these units were manufactured in 1997 and are now beyond their useful life. The original manufacturer is no longer in business and parts and support are no longer available. After nearly three decades of use, these units are worn out beyond repair and no longer operational. These cooling units play a vital role in protecting critical process equipment from heat-related failure. Timely replacement is essential to avoid disruptions to plant operations. Upgrading to modern units will not only restore proper function but also deliver significant improvements in energy efficiency, reliability, and long-term performance.

Evaluation:

Mohave Educational Services Cooperative competitively solicited and awarded a contract for HVAC equipment, installation, and services to Sun Mechanical Contracting, Inc. The city has an agreement with Mohave Educational Services Cooperative that allows for the cooperative use of this contract. The contract is valid through September 4, 2025.

Fiscal Impact

Account No.	Fund Name	Program Name	Dollar Amount	CIP Funded Y/N
615.3960.5219	Wastewater Operating	N/A	$325,000	N

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City Council Memorandum Management Services Memo No. 25-110

Date: June 12, 2025
To: Mayor and Council
Thru: Joshua H. Wright, City Manager
Dawn Lang, Deputy City Manager - CFO
From: Matthew Dunbar, Budget and Policy Director
Subject: Public Hearing on Adoption of the FY 2025-26 Annual Budget, 2026-2035 Capital Improvement Program (CIP), and Setting the FY 2025-26 Property Tax Levies

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Proposed Motion:

1. Open Public Hearing
2. Staff Presentation
3. Council Discussion
4. Discussion from the Audience
5. Close Public Hearing

Background/Discussion

On May 22, 2025, Council adopted Resolution No. 5905, which approved the FY 2025-26 Tentative Budget in the amount of $1,628,875,875 and set June 12, 2025, as the date for a public hearing to allow taxpayers to comment and provide input on the Budget, Capital Improvement Plan (CIP) and Property Tax Levies. A Notice of Public Hearing for “Adoption of the FY 2025-26 Annual Budget and 2026-2035 Capital Improvement Program, and Setting of Property Tax Levies” has been posted on the official City website since May 28, 2025, and was published in the Arizona Republic on May 28 and June 4, 2025, as required by state statute. The notice includes a summary of the Tentative Budget, with State Auditor General budget forms schedules A and B (a complete set of budget forms is attached to the Resolution No. 5906 agenda item) and provides a general description of the 10-Year CIP.

Council action on the Budget and CIP is scheduled immediately following this Public Hearing for the FY 2025-26 Budget and 2026-2035 CIP. Action on the

Property Tax Levies is scheduled for tentative adoption June 23, 2025, and final adoption June 26, 2025.

Attachments

Public Hearing Presentation

Public Hearing

FY 2025-26 Proposed Budget
2026-2035 Capital Improvement Program (CIP)
2025-26 Property Tax Levy

Council Chambers | Thursday, June 12, 2025



“Strength in Numbers”

FY 2025-26 Proposed Budget

“Strength in Numbers”

Total Budget $1,628,875,875 | Total General Fund: $615,641,303

Proposed Budget

- Adheres to financial policies and is structurally balanced
  - Ongoing for ongoing and one-time for one-time
- Uses Strategic Framework to guide decisions
- Provides for cost-effective, quality services
- Maintains long-term financial sustainability
- Resident engagement through input opportunities
  - Kickoff, Resident Budget Survey & Three Workshops
  - All-day Budget Briefing
  - Tentative and Final Adoption in May/June

0.01% decrease overall all Funds

$783.2M operating (+4.1%)

$845.7M capital (-3.5%)

6.6% increase in General Fund

$462.9M operating (+5.5%)

$152M capital (+9.9%)

Operating Budget Highlights

Maintains city Transaction Privilege Tax (TPT) rates (lowest in Arizona) and reduces primary property tax rate

Water, Wastewater, and Solid Waste rate changes are planned in the new Fiscal Year to ensure funds are self supporting

Budget maintains existing service levels in an increasing cost environment

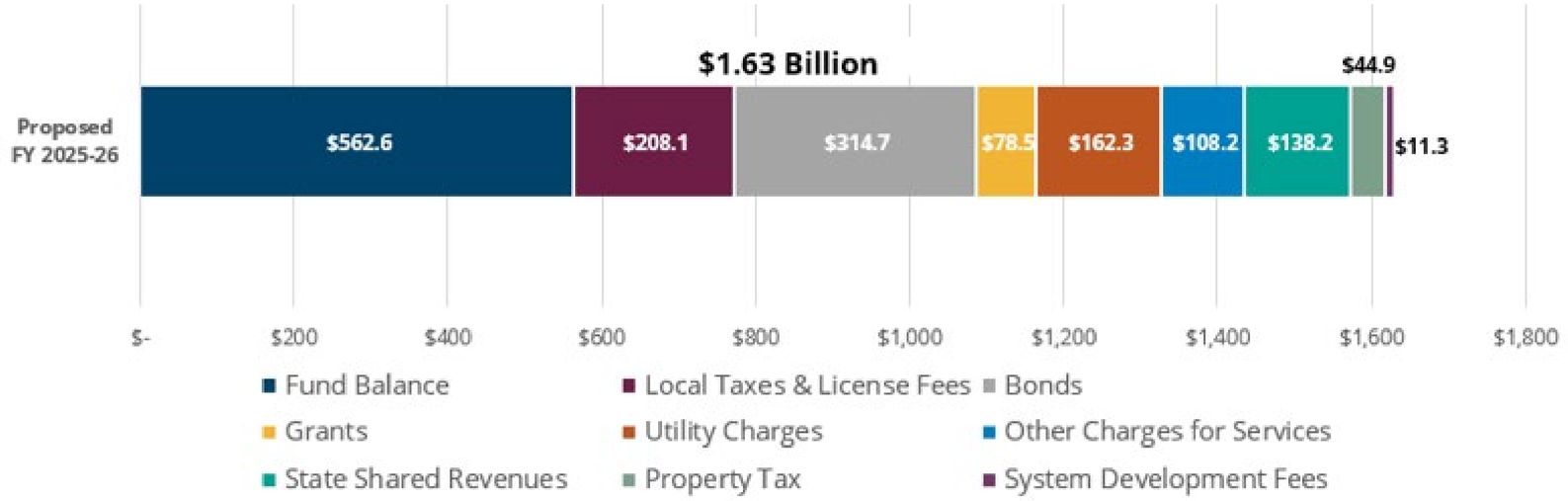
Adds funding for labor association commitments and general employee merit/market

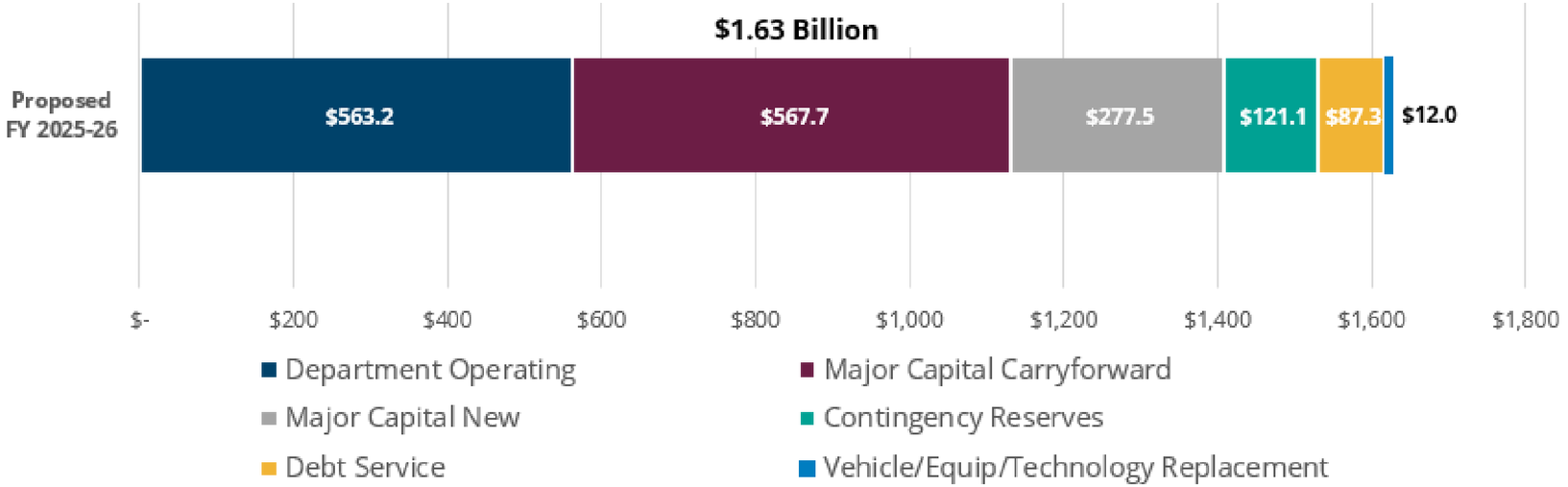
Maintains Public Safety Personnel Retirement System (PSPRS) full funding status with $25M in one-time funding

Maintains strong reserves (includes 15% General Fund contingency reserve and $10M budget stabilization reserve)

Total Annual Proposed Budget
All Funds (in millions)

Where the Money Comes From





Where the Money Goes

2026-2035 CIP Highlights



- 2026-2035 CIP total is **$2,617,730,721** ($129M more than the 2025-2034 CIP)
- Updated to reflect additional utility projects and updates project cost estimates to current values
- Increased focus on aging infrastructure
- Includes projects utilizing potential new bond authorization in years 3-10
- Only first year of CIP is appropriated, remainder is planned only

FY 2025-26 Property Tax Levy



Breakdown of $1 of Typical Chandler Property Tax Bill

Public Schools and Community College Districts
71 cents

Maricopa County & Special Districts
18 cents

City of Chandler
11 cents



*Based on 2024 Tax Bill information. Exact split will vary depending on the school district and any other special taxing districts on the bill.

FY 2025-26 Property Tax Levy

FY 2024-25 LPV
$4.108B

FY 2025-26 LPV
$4.124B

+0.4% increase
1.3% New Property
-0.9% Appreciation

2024-25 Levy
$44,473,790

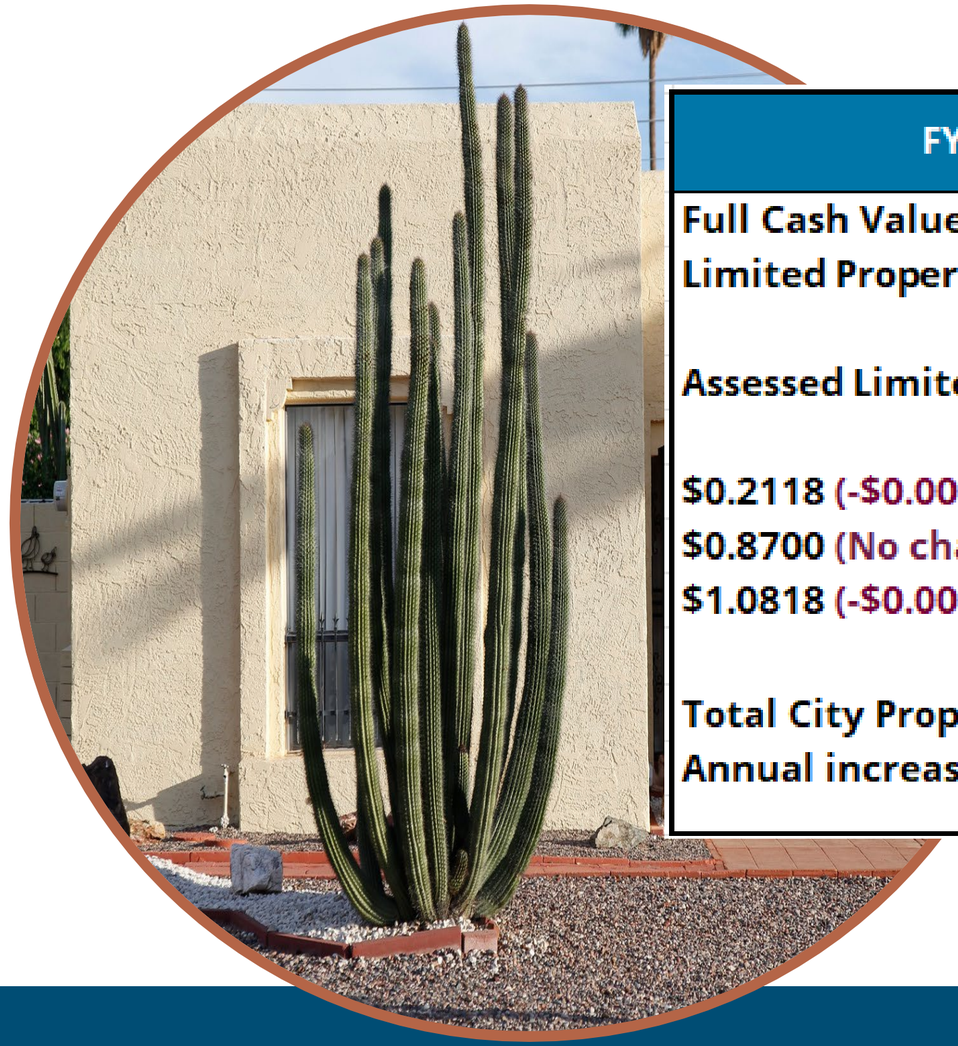
2025-26 Levy
$44,616,217

Levy Increase
$142,427

Tax rate reduction from $1.0826 to $1.0818
reduces the impact of the Limited Property Value (LPV) increase

Reduces property tax rate for the 10th consecutive year

Impact of City Tax Rate Reduction on Median Value Homeowner



FY 2025-26 Property Tax Rates	2025	2026	% Increase
Full Cash Value (FCV)	$414,800	$440,300	6.15%
Limited Property Value (LPV)	$244,210	$256,421	5.00%
Assessed Limited Cash Value (10%)	$24,421	$25,642	5.00%
$0.2118 (-$0.0008)/$100 Assessed Value (AV) - Primary	$51.92	$54.31	4.61%
$0.8700 (No change)/$100 AV - Secondary	$212.46	$223.09	5.00%
$1.0818 (-$0.0008)/$100 AV - Total Property Tax Rate			
Total City Property Tax Bill	$264.38	$277.40	4.92%
Annual increase from current year		$13.01 $1.08/month	

Key Budget Dates

Budget Event		Date
Council Budget Kickoff		**Completed Oct.**
Citizen Budget Survey		**Completed Nov. - Jan.**
Council Workshop #1		**Completed Feb.**
Council Workshop #2		**Completed early Mar.**
Council Workshop #3		**Completed late Mar.**
All Day Budget Briefing		**Completed May**
Council Meetings and Statutory Requirements	Tentative Budget/CIP Adoption	**Completed May**
	Budget Public Hearing and Final Adoption	**Tonight**
	Adoption of Tax Levies	**06/26/2025**



Questions?



For your consideration:

Res. #5906 Adopts the FY 2025-26 Annual Budget, sets the amounts proposed to be raised by direct property taxation, and adopts the 2026-2035 CIP

Tentative and final adoption of Ordinance No. 5130, setting Property Tax Levies will be June 23rd and 26th, 2025

For more information visit
chandleraz.gov/budget
or call the Budget Office at (480) 782-2254