



CHANDLER
arizona
Community of Innovation

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

CONSTRUCTION BID

TURF TO XERISCAPE PROGRAM, PHASE I CITY PROJECT NO.: ST2405.401

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

CITY OF CHANDLER, ARIZONA

CONSTRUCTION BID

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INVITATION TO BID

TURF TO XERISCAPE PROGRAM, PHASE I CITY PROJECT NO.: ST2405.401

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. Solicitation documents and addenda may be downloaded at the Arizona Procurement Portal - <https://app.az.gov/>. It is the contractor's sole responsibility to obtain all addenda from the Arizona Procurement Portal 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 Arizona Procurement Portal - <https://app.az.gov/> for updated information.

PRE-BID CONFERENCE:

	THERE WILL BE NO PRE-BID CONFERENCE
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SOLICITATION QUESTIONS DUE DATE:

May 15, 2025 5:00 p.m. Arizona time	All solicitation questions must be emailed to Bid.Questions@chandleraz.gov with the subject line of: "ST2405.401 TURF TO XERISCAPE PROGRAM, PHASE I BID QUESTION" . Questions received after the due date and time will NOT be considered.
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BID SUBMISSION:

May 29, 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: "TURF TO XERISCAPE PROGRAM, PHASE I" "ST2405.401"
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Work under this Agreement includes:

The City of Chandler Turf to Xeriscape project consists of converting turf grass to xeriscape landscape in eight city-maintained sites within the City of Chandler.

Work must be completed within **300** consecutive calendar days from the Notice to Proceed. The Engineer's Estimate range is **\$5 million - \$7 million**.

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:	5/1/2025 5/8/2025 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: **TURF TO XERISCAPE PROGRAM, PHASE I**

CITY PROJECT NO.: **ST2405.401**

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, ELS Construction, Inc., (hereinafter "Principal"), as Principal, and Travelers Casualty & Surety Company of America, (hereinafter "Surety"), a corporation organized and existing under the laws of the State of Connecticut, with its principal offices in Phoenix, Az, 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, AZ, (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:

TURF TO XERISCAPE PROGRAM, PHASE I ST2405.401

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 29th day of May, 20 25

ELS Construction, Inc.

Principal [Signature] SEAL

By: [Signature]

Its: SECRETARY

Travelers Casualty & Surety Company of America

SURETY [Signature] SEAL

By: [Signature]
Jessika Gulliver Attorney-in-Fact

USI Insurance Services, LLC

AGENCY OF RECORD

2375 E. Camelback Rd Ste 740 Phoenix, AZ 85016

AGENCY ADDRESS

CITY OF CHANDLER
CHANDLER, ARIZONA

**TURF TO XERISCAPE PROGRAM, PHASE I
ST2405.401**

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 **300** 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
<u>1</u>	<u>5/23/25</u>	<u>1</u>	<u>5/23/25</u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>

PROPOSAL ACKNOWLEDGEMENT

THIS BID IS SUBMITTED BY: ELS CONSTRUCTION, 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: 312090 - B1

ATTACH PHOTOCOPY

Classification B1 No. 312090
CR21 - 315071

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,

ELS Construction, Inc.

Firm

86-0398337

Federal Tax ID Number

3329 E. Southern Ave, Phoenix, AZ 85040

Address

City, State and Zip Code

602-243-1106

Phone

By (Signature Required)

John Lupoe - PreConstruction Director

Name and Title (Print)

jlupoe@evergreenaz.com

Email Address

ADDENDUM 1 (5/22/25)

NAME OF BIDDER: ELS CONSTRUCTION, INC.
CITY OF CHANDLER

TURF TO XERISCAPE - PHASE 1
Project No. ST2405.401
ADDENDUM 1 - MAY 22, 2025
BID SCHEDULE

NO.	DESCRIPTION	UNIT	EST. QTY.	UNIT PRICE	EXTENDED PRICE
1	Construction Surveying and Layout	LS	1	\$11,400.00	\$11,400.00
2	Erosion Control (SWPPP Preparation, Installation, Maintenance, and Removal)	LS	1	\$22,800.00	\$22,800.00
3	Mobilization/Demobilization	LS	1	\$236,071.20	\$236,071.20
4	Clearing and Grubbing (include shrub and stump removal)	LS	1	\$11,480.00	\$11,480.00
5	Remove Concrete Header	LF	9,236	\$7.25	\$66,961.00
6	Remove Turf Grass	SF	1,075,265	\$1.85	\$1,989,240.25
7	Remove Decomposed Granite	SF	66,658	\$0.65	\$43,327.70
8	Remove Water Meter	EA	2	\$75.00	\$150.00
9	Remove Backflow Preventer & Enclosure Cage	EA	2	\$90.00	\$180.00
10	Remove Irrigation Pump	EA	2	\$280.00	\$560.00
11	Remove Irrigation Controller	EA	8	\$70.00	\$560.00
12	Remove Trees (4" dia. and larger)	EA	4	\$2,100.00	\$8,400.00
13	Remove Irrigation Valves & Equipment	LS	1	\$15,280.00	\$15,280.00
14	Sawcut, Remove and Replace Asphalt	SY	26	\$179.00	\$4,654.00
15	Trees - 36 IN Box	EA	153	\$620.00	\$94,860.00
16	Trees - 24 IN Box	EA	445	\$230.00	\$102,350.00
17	Trees - 15 GAL	EA	33	\$125.00	\$4,125.00
18	Shrubs - 5 GAL	EA	1,856	\$19.50	\$36,192.00
19	Groundcovers - 5 GAL	EA	1,505	\$19.50	\$29,347.50
20	Accents - 5 GAL	EA	1,842	\$26.00	\$47,892.00
21	Decomposed Granite- 1-1/4" Screened Desert Gold	SF	1,120,537	\$0.58	\$649,911.46
22	River Rock- d50=9"	CY	88	\$155.00	\$13,640.00
23	Concrete Header	LF	373	\$16.00	\$5,968.00
24	Turf Seed & Soil Preparation	SF	14,564	\$0.38	\$5,534.32
25	Tree Protection Fencing	LF	15,120	\$16.00	\$241,920.00
27	2" Ball Valve Assembly	EA	1	\$410.00	\$410.00
28	1.5" Ball Valve Assembly	EA	6	\$10.00	\$60.00
29	1.25" Ball Valve Assembly	EA	5	\$350.00	\$1,750.00
30	1" Drip Remote Control Valve Assembly	EA	54	\$510.00	\$27,540.00
31	1.5" Turf Remote Control Valve Assembly	EA	3	\$670.00	\$2,010.00
33	Multi Outlet Emitter Assembly	EA	3,168	\$37.00	\$117,216.00
34	Deep Root Watering Assembly	EA	305	\$65.00	\$19,825.00
35	Turf Rotors	EA	35	\$100.00	\$3,500.00
36	End Cap Flush Valve Assembly	EA	111	\$120.00	\$13,320.00
38	2 IN Mainline Pipe - Sch 40 PVC	LF	384	\$6.05	\$2,323.20

NO.	DESCRIPTION	UNIT	EST. QTY.		EXTENDED PRICE
39	1.5 IN Mainline Pipe - Sch 40 PVC	LF	3,747	\$5.35	\$20,046.45
40	1.25 IN Mainline Pipe - Sch 40 PVC	LF	3,918	\$5.90	\$23,116.20
42	2 IN Lateral Pipe - Sch 40 PVC	LF	99	\$2.25	\$222.75
43	1.5 IN Lateral Pipe - Sch 40 PVC	LF	118	\$1.90	\$224.20
44	1.25 IN Lateral Pipe - Sch 40 PVC	LF	184	\$1.75	\$322.00
45	1 IN Lateral Pipe - Sch 40 PVC	LF	829	\$1.55	\$1,284.95
46	3/4 IN Lateral Pipe - Sch 40 PVC	LF	74,226	\$1.25	\$92,782.50
47	6 IN Irrigation Pipe Sleeve (Schedule 40 PVC)	LF	10	\$13.35	\$133.50
48	4 IN Irrigation Pipe Sleeve (Schedule 40 PVC)	LF	81	\$6.70	\$542.70
49	3 IN Irrigation Pipe Sleeve (Schedule 40 PVC)	LF	117	\$5.90	\$690.30
50	2 IN Irrigation Pipe Sleeve (Schedule 40 PVC)	LF	25	\$4.65	\$116.25
51	1 IN Master Valve & Flow Meter Assembly	EA	6	\$2,285.00	\$13,710.00
52	1.5 IN Master Valve & Flow Meter Assembly	EA	1	\$2,425.00	\$2,425.00
54	12 Station Wall Mounted Controller	EA	1	\$12,150.00	\$12,150.00
55	12 Station Pedestal Mounted Irrigation Controller	EA	5	\$17,800.00	\$89,000.00
56	24 Station Pedestal Mounted Irrigation Controller	EA	1	\$18,400.00	\$18,400.00
57	Owner's Allowance	AL	1	\$ 540,000.00	\$ 540,000.00

TOTAL BASE BID:
\$4,643,485.43

ALTERNATE NO. 1 (PLAN SHEET 53 TO 61 WORK NORTH OF BUTLER AVENUE)		UNIT	EST. QTY.	UNIT PRICE	EXTENDED PRICE
1	Construction Surveying and Layout	LS	1		\$2,400.00
2	Erosion Control (SWPPP Preparation, Installation, Maintenance, and Removal)	LS	1		\$4,800.00
3	Mobilization/Demobilization	LS	1		\$49,699.20
4	Clearing and Grubbing (include shrub and stump removal)	LS	1		\$3,380.00
5	Remove Concrete Header	LF	1,250	\$7.25	\$9,062.50
6	Remove Turf Grass	SF	221,459	\$1.85	\$409,699.15
7	Remove Decomposed Granite	SF	19,167	\$0.65	\$12,458.55
11	Remove Irrigation Controller	EA	1	\$70.00	\$70.00
13	Remove Irrigation Valves & Equipment	LS	1		\$4,180.00
15	Trees - 36 IN Box	EA	36	\$620.00	\$22,320.00
16	Trees - 24 IN Box	EA	58	\$230.00	\$13,340.00
17	Trees - 15 GAL	EA	9	\$125.00	\$1,125.00
18	Shrubs - 5 GAL	EA	224	\$19.50	\$4,368.00
19	Groundcovers - 5 GAL	EA	165	\$19.50	\$3,217.50
20	Accents - 5 GAL	EA	266	\$26.00	\$6,916.00
21	Decomposed Granite- 1-1/4" Screened Desert Gold	SF	184,020	\$0.58	\$106,731.60
22	River Rock- d50=9"	CY	22	\$155.00	\$3,410.00
23	Concrete Header	LF	2,059	\$16.00	\$32,944.00
24	Turf Seed & Soil Preparation	SF	57,345	\$0.38	\$21,791.10
25	Tree Protection Fencing	LF	1,610	\$16.00	\$25,760.00
26	2.5" Ball Valve Assembly	EA	2	\$640.00	\$1,280.00

BID SCHEDULE

NO.	DESCRIPTION	UNIT	EST. QTY.	UNIT PRICE	EXTENDED PRICE
28	1.5" Ball Valve Assembly	EA	2	\$350.00	\$700.00
30	1" Drip Remote Control Valve Assembly	EA	10	\$510.00	\$5,100.00
31	1.5" Turf Remote Control Valve Assembly	EA	5	\$670.00	\$3,350.00
32	2" Turf Remote Control Valve Assembly	EA	2	\$725.00	\$1,450.00
33	Multi Outlet Emitter Assembly	EA	495	\$37.00	\$18,315.00
35	Turf Rotors	EA	83	\$100.00	\$8,300.00
36	End Cap Flush Valve Assembly	EA	23	\$120.00	\$2,760.00
37	2.5 IN Mainline Pipe - Sch 40 PVC	LF	528	\$6.20	\$3,273.60
38	2 IN Mainline Pipe - Sch 40 PVC	LF	317	\$6.05	\$1,917.85
39	1.5 IN Mainline Pipe - Sch 40 PVC	LF	1,232	\$5.35	\$6,591.20
41	2.5 IN Lateral Pipe - Sch 40 PVC	LF	12	\$4.85	\$58.20
42	2 IN Lateral Pipe - Sch 40 PVC	LF	271	\$2.25	\$609.75
43	1.5 IN Lateral Pipe - Sch 40 PVC	LF	212	\$1.90	\$402.80
44	1.25 IN Lateral Pipe - Sch 40 PVC	LF	1,147	\$1.75	\$2,007.25
45	1 IN Lateral Pipe - Sch 40 PVC	LF	1,001	\$1.55	\$1,551.55
46	3/4 IN Lateral Pipe - Sch 40 PVC	LF	8,937	\$1.25	\$11,171.25
47	6 IN Irrigation Pipe Sleeve (Schedule 40 PVC)	LF	55	\$13.35	\$734.25
53	2 IN Master Valve & Flow Meter Assembly	EA	1	\$2,585.00	\$2,585.00
56	24 Station Pedestal Mounted Irrigation Controller	EA	1	\$18,400.00	\$18,400.00

ALTERNATE 1 BID:
\$825,790.30

ALTERNATE NO. 2 (PLAN SHEET 53 TO 61 WORK SOUTH OF BUTLER AVENUE)		UNIT	EST. QTY.	UNIT PRICE	EXTENDED PRICE
1	Construction Surveying and Layout	LS	1		\$1,200.00
2	Erosion Control (SWPPP Preparation, Installation, Maintenance, and Removal)	LS	1		\$2,400.00
3	Mobilization/Demobilization	LS	1		\$24,849.60
4	Clearing and Grubbing (include shrub and stump removal)	LS	1		\$2,320.00
5	Remove Concrete Header	LF	737	\$7.25	\$5,343.25
6	Remove Turf Grass	SF	117,898	\$1.85	\$218,111.30
7	Remove Decomposed Granite	SF	14,680	\$0.65	\$9,542.00
11	Remove Irrigation Controller	EA	1	\$70.00	\$70.00
13	Remove Irrigation Valves & Equipment	LS	1		\$2,700.00
15	Trees - 36 IN Box	EA	36	\$620.00	\$22,320.00
16	Trees - 24 IN Box	EA	40	\$230.00	\$9,200.00
17	Trees - 15 GAL	EA	5	\$125.00	\$625.00
18	Shrubs - 5 GAL	EA	171	\$19.50	\$3,334.50
19	Groundcovers - 5 GAL	EA	176	\$19.50	\$3,432.00
20	Accents - 5 GAL	EA	106	\$26.00	\$2,756.00
21	Decomposed Granite- 1-1/4" Screened Desert Gold	SF	127,341	\$0.58	\$73,857.78
22	River Rock- d50=9"	CY	16	\$155.00	\$2,480.00
25	Tree Protection Fencing	LF	1,775	\$16.00	\$28,400.00

BID SCHEDULE

NO.	DESCRIPTION	UNIT	EST. QTY.	UNIT PRICE	EXTENDED PRICE
28	1.5" Ball Valve Assembly	EA	2	\$350.00	\$700.00
30	1" Drip Remote Control Valve Assembly	EA	6	\$510.00	\$3,060.00
33	Multi Outlet Emitter Assembly	EA	335	\$37.00	\$12,395.00
34	Deep Root Watering Assembly	EA	10	\$65.00	\$650.00
36	End Cap Flush Valve Assembly	EA	19	\$120.00	\$2,280.00
39	1.5 IN Mainline Pipe - Sch 40 PVC	LF	584	\$5.35	\$3,124.40
45	1 IN Lateral Pipe - Sch 40 PVC	LF	20	\$1.55	\$31.00
46	3/4 IN Lateral Pipe - Sch 40 PVC	LF	6,514	\$1.25	\$8,142.50
48	4 IN Irrigation Pipe Sleeve (Schedule 40 PVC)	LF	15	\$6.70	\$100.50
51	1 IN Master Valve & Flow Meter Assembly	EA	1	\$2,285.00	\$2,285.00
55	12 Station Pedestal Mounted Irrigation Controller	EA	1	\$17,800.00	\$17,800.00

ALTERNATE 2 BID:

\$461,069.83

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 TURF TO XERISCAPE PROGRAM, PHASE I ST2405.401
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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:	One Stop Asphalt	Company Name:	
Contact Name:	Ricky Dehoyoz	Contact Name:	N/A
Contact Email:	ricky@onestopasphalt.com	Contact Email:	
Contact Phone:	602-595-9658	Contact Phone:	
Work Component:	Asphalt Removal & Replacement	Work Component:	
Percentage of Total Work Performed:	0.1%	Percentage of Total Work Performed:	

Company Name:	N/A	Company Name:	N/A
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:	N/A	Company Name:	N/A
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:	\$ 10,000 ⁰⁰	Overall Bid Total:	\$ 5,937,630 ³⁵
Overall Prime Contractor Self-performance %:			99%

**NON-COLLUSION BIDDING
CERTIFICATION**

(STATE OF)
ss.
(COUNTY OF)

I, John Lupoe 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 John Lupoe a, Pre-Construction Director
(Name) (Title, Position, etc.)

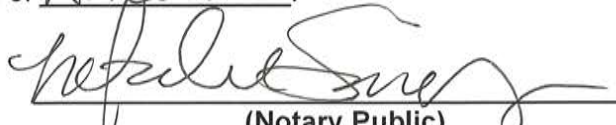
of the firm of ELS CONSTRUCTION, INC., the Bidder making
the Bid for City of Chandler, **TURF TO XERISCAPE PROGRAM, PHASE I, City Project No. ST2405.401** and
that I executed the said Bid with full authority so to do; that said Bidder has not, directly or indirectly entered
into any agreement, participated 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.

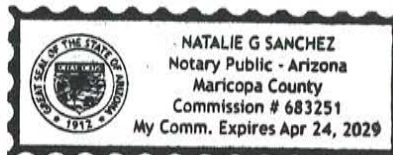
I further warrant that no person or selling agency has been employed or retained to solicit or secure such
Contract upon an agreement of understanding, for a commission, percentage, brokerage or contingent fee,
except bonafide employees or bonafide established commercial or selling agencies maintained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


(Signature of Bidder)
John Lupoe
(Printed or Typed Name of Bidder)

Sworn to before me this 29th day of may, 2025, in the County
of

Maricopa, State of Arizona.


(Notary Public)



CERTIFICATE OF INSURABILITY AND BONDING

I hereby certify that as Bidder to **City of Chandler TURF TO XERISCAPE PROGRAM, PHASE I ST2405.401**, 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

PRE CONSTRUCTION DIRECTOR

Title

5/29/25

Date

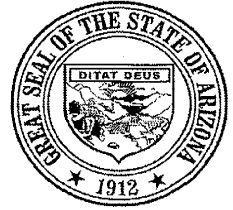
**ARIZONA DEPARTMENT OF REVENUE
PRIVILEGE TAX LICENSE**

PROJECT NAME: TURF TO XERISCAPE PROGRAM, PHASE I

PROJECT NUMBER: ST2405.401

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

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: ELS CONSTRUCTION INC
3329 E SOUTHERN AVE
PHOENIX AZ 85040-3824

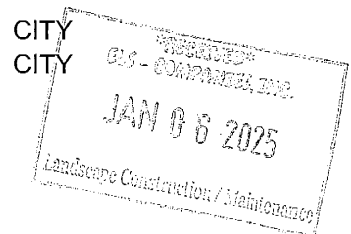
ALL communications and
reports MUST REFER to
this LICENSE NO.

LICENSE: 07430655
START DATE: 03/01/1992
ISSUED: 12/24/2024
EXPIRES: 12/31/2025

LOCATION: CODE 001
ELS CONSTRUCTION INC
3329 E SOUTHERN AVE
PHOENIX, AZ 85040
2400069192401



BUSINESS CODE	REGION	JURISDICTION
015 - CONTRACTING - PRIME	COC - COCONINO	COUNTY
015 - CONTRACTING - PRIME	GLA - GILA	COUNTY
015 - CONTRACTING - PRIME	MAR - MARICOPA	COUNTY
017 - RETAIL	MAR - MARICOPA	COUNTY
215 - PRE-6/2010 CONTRACTING	MAR - MARICOPA	COUNTY
015 - CONTRACTING - PRIME	PMA - PIMA	COUNTY
014 - PERSONAL PROPERTY RENTAL	PNL - PINAL	COUNTY
015 - CONTRACTING - PRIME	PNL - PINAL	COUNTY
215 - PRE-6/2010 CONTRACTING	PNL - PINAL	COUNTY
015 - CONTRACTING - PRIME	AJ - APACHE JUNCTION	CITY
015 - CONTRACTING - PRIME	AV - AVONDALE	CITY
015 - CONTRACTING - PRIME	BE - BUCKEYE	CITY
015 - CONTRACTING - PRIME	CH - CHANDLER	CITY
029 - USE TAX	CH - CHANDLER	CITY
015 - CONTRACTING - PRIME	FS - FLAGSTAFF	CITY
029 - USE TAX	FS - FLAGSTAFF	CITY
015 - CONTRACTING - PRIME	GB - GILBERT	CITY
017 - RETAIL	GB - GILBERT	CITY
016 - CONSTRUCTION CONTRACTING - SPECULATIVE BUILDERS	GE - GLENDALE	CITY
029 - USE TAX	GE - GLENDALE	CITY
015 - CONTRACTING - PRIME	GL - GLOBE	CITY

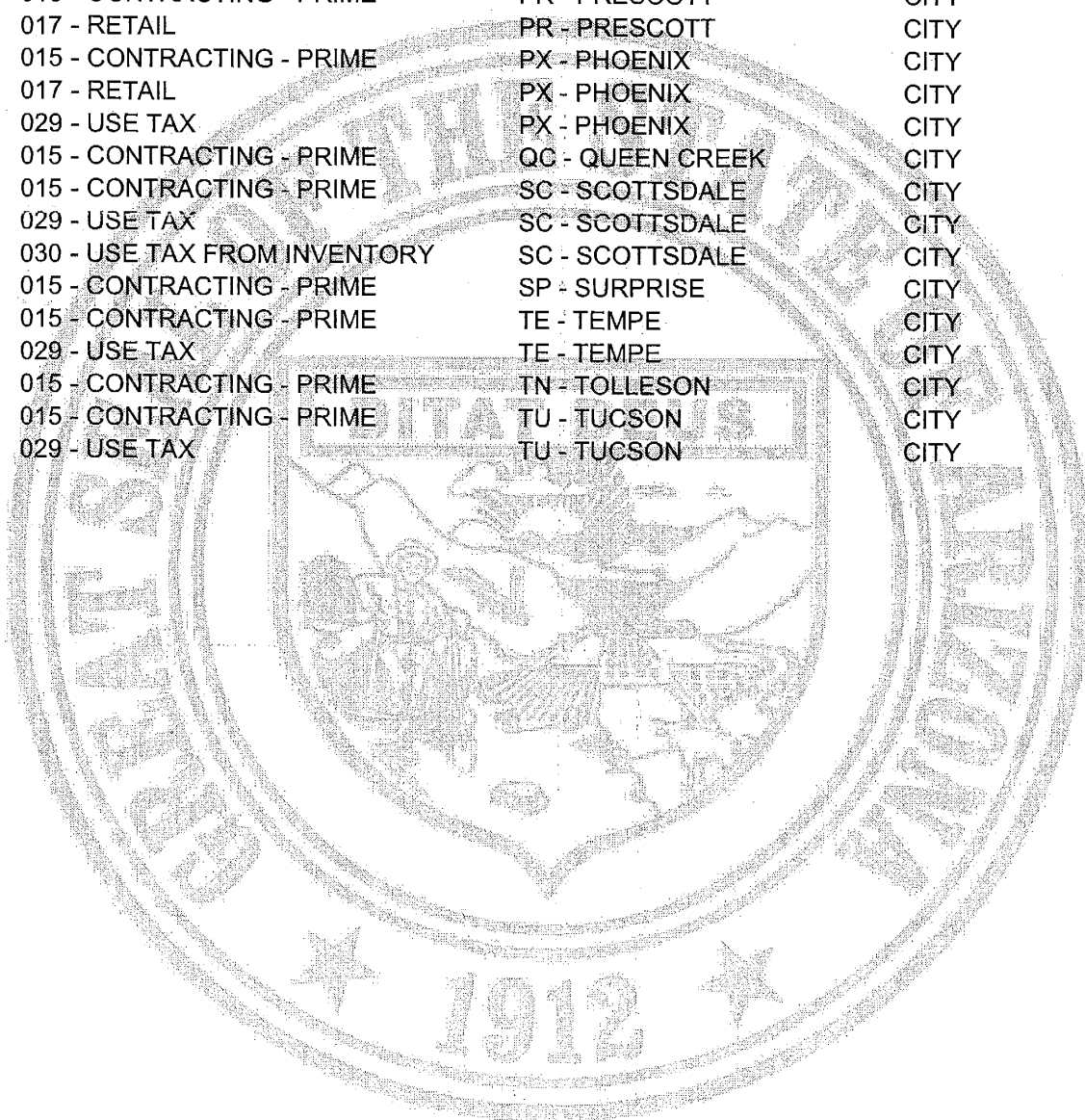


SCANNED

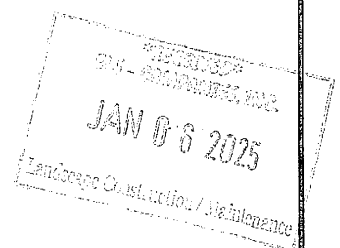
This License is issued to the business named above for the address shown. Licenses, by law, cannot be transferred from one person to another, nor can they be transferred from one location to another. Arizona law requires licensees to notify the Department of Revenue if there is a change in business name, 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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BUSINESS CODE	REGION	JURISDICTION
015 - CONTRACTING - PRIME	GY - GOODYEAR	CITY
015 - CONTRACTING - PRIME	ME - MESA	CITY
015 - CONTRACTING - PRIME	PE - PEORIA	CITY
017 - RETAIL	PE - PEORIA	CITY
029 - USE TAX	PE - PEORIA	CITY
062 - RETAIL SALES FOOD FOR HOME CONSUMPTION	PE - PEORIA	CITY
015 - CONTRACTING - PRIME	PR - PRESCOTT	CITY
017 - RETAIL	PR - PRESCOTT	CITY
015 - CONTRACTING - PRIME	PX - PHOENIX	CITY
017 - RETAIL	PX - PHOENIX	CITY
029 - USE TAX	PX - PHOENIX	CITY
015 - CONTRACTING - PRIME	QC - QUEEN CREEK	CITY
015 - CONTRACTING - PRIME	SC - SCOTTSDALE	CITY
029 - USE TAX	SC - SCOTTSDALE	CITY
030 - USE TAX FROM INVENTORY	SC - SCOTTSDALE	CITY
015 - CONTRACTING - PRIME	SP - SURPRISE	CITY
015 - CONTRACTING - PRIME	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



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**CITY OF CHANDLER, ARIZONA
TURF TO XERISCAPE – PHASE 1**

Project No. ST2405.401

ADDENDUM NO. 1

Date: MAY 22, 2025

1. Bidder must acknowledge the receipt of this addendum on the Proposal Acknowledgement page of the **BID SUBMITTAL**. This addendum, containing **24 pages**, is hereby incorporated into the Construction Agreement by this reference.
2. **Bid schedule.** Replace the BID SCHEDULE in its entirety with the accompanying **BID SCHEDULE REVISION dated May 22, 2025**. (4 Pages)
3. **Plan Sheet Revisions.** Replace Plans sheet(s) **4, 5, 6, 8, 9, 10, 12, 18, 27, 41, 44, 46, 47, 49, 50, 51, 53, 56, 60** in its entirety with accompanying revised Plans sheets **4, 5, 6, 8, 9, 10, 12, 18, 27, 41, 44, 46, 47, 49, 50, 51, 53, 56, 60** dated **May 19, 2025 – Addendum 1**. (19 Pages)
4. **Notice to Proceed.** Due to grant funding requirements, the Notice to Proceed will be issued on **July 10, 2025**. This is assuming the construction agreement is approved at the June 26, 2025 City Council Meeting.
5. **Question:** Desert Gold gravel is a color that is no longer available. Could we use 1.25" screened coral or ADOT spec 1.25" coral as alternatives?
Response: If Desert Gold is not available at the time of ordering, please use 1.25" screened Madison Gold in its place.
6. **Question:** How do I submit a proposal for this project?
Response: All bid documents pertaining to this project can be found on the Arizona Procurement Portal. Bid must be submitted in person on May 29, 2025, as detailed in the bid advertisement.

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

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

NAME OF BIDDER: _____

CITY OF CHANDLER

TURF TO XERISCAPE - PHASE 1

Project No. ST2405.401

ADDENDUM 1 - MAY 22, 2025

BID SCHEDULE

NO.	DESCRIPTION	UNIT	EST. QTY.	UNIT PRICE	EXTENDED PRICE
1	Construction Surveying and Layout	LS	1		
2	Erosion Control (SWPPP Preparation, Installation, Maintenance, and Removal)	LS	1		
3	Mobilization/Demobilization	LS	1		
4	Clearing and Grubbing (include shrub and stump removal)	LS	1		
5	Remove Concrete Header	LF	9,236		
6	Remove Turf Grass	SF	1,075,265		
7	Remove Decomposed Granite	SF	66,658		
8	Remove Water Meter	EA	2		
9	Remove Backflow Preventer & Enclosure Cage	EA	2		
10	Remove Irrigation Pump	EA	2		
11	Remove Irrigation Controller	EA	8		
12	Remove Trees (4" dia. and larger)	EA	4		
13	Remove Irrigation Valves & Equipment	LS	1		
14	Sawcut, Remove and Replace Asphalt	SY	26		
15	Trees - 36 IN Box	EA	153		
16	Trees - 24 IN Box	EA	445		
17	Trees - 15 GAL	EA	33		
18	Shrubs - 5 GAL	EA	1,856		
19	Groundcovers - 5 GAL	EA	1,505		
20	Accents - 5 GAL	EA	1,842		
21	Decomposed Granite- 1-1/4" Screened Desert Gold	SF	1,120,537		
22	River Rock- d50=9"	CY	88		
23	Concrete Header	LF	373		
24	Turf Seed & Soil Preparation	SF	14,564		
25	Tree Protection Fencing	LF	15,120		
27	2" Ball Valve Assembly	EA	1		
28	1.5" Ball Valve Assembly	EA	6		
29	1.25" Ball Valve Assembly	EA	5		
30	1" Drip Remote Control Valve Assembly	EA	54		
31	1.5" Turf Remote Control Valve Assembly	EA	3		
33	Multi Outlet Emitter Assembly	EA	3,168		
34	Deep Root Watering Assembly	EA	305		
35	Turf Rotors	EA	35		
36	End Cap Flush Valve Assembly	EA	111		
38	2 IN Mainline Pipe - Sch 40 PVC	LF	384		

BID SCHEDULE

NO.	DESCRIPTION	UNIT	EST. QTY.	UNIT PRICE	EXTENDED PRICE
39	1.5 IN Mainline Pipe - Sch 40 PVC	LF	3,747		
40	1.25 IN Mainline Pipe - Sch 40 PVC	LF	3,918		
42	2 IN Lateral Pipe - Sch 40 PVC	LF	99		
43	1.5 IN Lateral Pipe - Sch 40 PVC	LF	118		
44	1.25 IN Lateral Pipe - Sch 40 PVC	LF	184		
45	1 IN Lateral Pipe - Sch 40 PVC	LF	829		
46	3/4 IN Lateral Pipe - Sch 40 PVC	LF	74,226		
47	6 IN Irrigation Pipe Sleeve (Schedule 40 PVC)	LF	10		
48	4 IN Irrigation Pipe Sleeve (Schedule 40 PVC)	LF	81		
49	3 IN Irrigation Pipe Sleeve (Schedule 40 PVC)	LF	117		
50	2 IN Irrigation Pipe Sleeve (Schedule 40 PVC)	LF	25		
51	1 IN Master Valve & Flow Meter Assembly	EA	6		
52	1.5 IN Master Valve & Flow Meter Assembly	EA	1		
54	12 Station Wall Mounted Controller	EA	1		
55	12 Station Pedestal Mounted Irrigation Controller	EA	5		
56	24 Station Pedestal Mounted Irrigation Controller	EA	1		
57	Owner's Allowance	AL	1	\$ 540,000.00	\$ 540,000.00

TOTAL BASE BID: _____

ALTERNATE NO. 1 (PLAN SHEET 53 TO 61 WORK NORTH OF BUTLER AVENUE)		UNIT	EST. QTY.	UNIT PRICE	EXTENDED PRICE
1	Construction Surveying and Layout	LS	1		
2	Erosion Control (SWPPP Preparation, Installation, Maintenance, and Removal)	LS	1		
3	Mobilization/Demobilization	LS	1		
4	Clearing and Grubbing (include shrub and stump removal)	LS	1		
5	Remove Concrete Header	LF	1,250		
6	Remove Turf Grass	SF	221,459		
7	Remove Decomposed Granite	SF	19,167		
11	Remove Irrigation Controller	EA	1		
13	Remove Irrigation Valves & Equipment	LS	1		
15	Trees - 36 IN Box	EA	36		
16	Trees - 24 IN Box	EA	58		
17	Trees - 15 GAL	EA	9		
18	Shrubs - 5 GAL	EA	224		
19	Groundcovers - 5 GAL	EA	165		
20	Accents - 5 GAL	EA	266		
21	Decomposed Granite- 1-1/4" Screened Desert Gold	SF	184,020		
22	River Rock- d50=9"	CY	22		
23	Concrete Header	LF	2,059		
24	Turf Seed & Soil Preparation	SF	57,345		
25	Tree Protection Fencing	LF	1,610		
26	2.5" Ball Valve Assembly	EA	2		

BID SCHEDULE

NO.	DESCRIPTION	UNIT	EST. QTY.	UNIT PRICE	EXTENDED PRICE
28	1.5" Ball Valve Assembly	EA	2		
30	1" Drip Remote Control Valve Assembly	EA	10		
31	1.5" Turf Remote Control Valve Assembly	EA	5		
32	2" Turf Remote Control Valve Assembly	EA	2		
33	Multi Outlet Emitter Assembly	EA	495		
35	Turf Rotors	EA	83		
36	End Cap Flush Valve Assembly	EA	23		
37	2.5 IN Mainline Pipe - Sch 40 PVC	LF	528		
38	2 IN Mainline Pipe - Sch 40 PVC	LF	317		
39	1.5 IN Mainline Pipe - Sch 40 PVC	LF	1,232		
41	2.5 IN Lateral Pipe - Sch 40 PVC	LF	12		
42	2 IN Lateral Pipe - Sch 40 PVC	LF	271		
43	1.5 IN Lateral Pipe - Sch 40 PVC	LF	212		
44	1.25 IN Lateral Pipe - Sch 40 PVC	LF	1,147		
45	1 IN Lateral Pipe - Sch 40 PVC	LF	1,001		
46	3/4 IN Lateral Pipe - Sch 40 PVC	LF	8,937		
47	6 IN Irrigation Pipe Sleeve (Schedule 40 PVC)	LF	55		
53	2 IN Master Valve & Flow Meter Assembly	EA	1		
56	24 Station Pedestal Mounted Irrigation Controller	EA	1		

ALTERNATE 1 BID: _____

ALTERNATE NO. 2 (PLAN SHEET 53 TO 61 WORK SOUTH OF BUTLER AVENUE)		UNIT	EST. QTY.	UNIT PRICE	EXTENDED PRICE
1	Construction Surveying and Layout	LS	1		
2	Erosion Control (SWPPP Preparation, Installation, Maintenance, and Removal)	LS	1		
3	Mobilization/Demobilization	LS	1		
4	Clearing and Grubbing (include shrub and stump removal)	LS	1		
5	Remove Concrete Header	LF	737		
6	Remove Turf Grass	SF	117,898		
7	Remove Decomposed Granite	SF	14,680		
11	Remove Irrigation Controller	EA	1		
13	Remove Irrigation Valves & Equipment	LS	1		
15	Trees - 36 IN Box	EA	36		
16	Trees - 24 IN Box	EA	40		
17	Trees - 15 GAL	EA	5		
18	Shrubs - 5 GAL	EA	171		
19	Groundcovers - 5 GAL	EA	176		
20	Accents - 5 GAL	EA	106		
21	Decomposed Granite- 1-1/4" Screened Desert Gold	SF	127,341		
22	River Rock- d50=9"	CY	16		
25	Tree Protection Fencing	LF	1,775		

BID SCHEDULE

NO.	DESCRIPTION	UNIT	EST. QTY.	UNIT PRICE	EXTENDED PRICE
28	1.5" Ball Valve Assembly	EA	2		
30	1" Drip Remote Control Valve Assembly	EA	6		
33	Multi Outlet Emitter Assembly	EA	335		
34	Deep Root Watering Assembly	EA	10		
36	End Cap Flush Valve Assembly	EA	19		
39	1.5 IN Mainline Pipe - Sch 40 PVC	LF	584		
45	1 IN Lateral Pipe - Sch 40 PVC	LF	20		
46	3/4 IN Lateral Pipe - Sch 40 PVC	LF	6,514		
48	4 IN Irrigation Pipe Sleeve (Schedule 40 PVC)	LF	15		
51	1 IN Master Valve & Flow Meter Assembly	EA	1		
55	12 Station Pedestal Mounted Irrigation Controller	EA	1		

ALTERNATE 2 BID: _____

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).

LANDSCAPE GENERAL NOTES:

1. NO PLANT SUBSTITUTIONS, TYPE, OR QUANTITY DEVIATIONS FROM THE APPROVED LANDSCAPE PLANS WILL BE PERMITTED WITHOUT PRIOR APPROVAL FROM THE CITY OF CHANDLER REPRESENTATIVE. CONTRACTOR SHALL PROVIDE INFORMATION AS TO AVAILABILITY OF PLANT MATERIALS AS A SUBMITTAL WITHIN 30 DAYS OF NOTICE TO PROCEED. SEE SPECIFICATIONS.

2. ALL PLANT MATERIAL SPECIFICATIONS SHALL CONFORM TO THE ARIZONA NURSERY ASSOCIATION STANDARDS CURRENT EDITION.

3. ALL RIGHT-OF-WAY PLANT MATERIAL TO BE IN COMPLIANCE WITH THE ARIZONA DEPARTMENT OF WATER RESOURCES LOW WATER USE PLANT LIST AND CITY OF CHANDLER APPROVED STANDARDS.

4. ALL LANDSCAPE CONSTRUCTION REQUIRED TO COMPLETE THESE PLANS SHALL BE IN ACCORDANCE WITH CITY OF CHANDLER (C.O.C.) SUPPLEMENTS TO THE MAG UNIFORM STANDARD SPECIFICATIONS, UNLESS SPECIFIED OTHERWISE IN THESE PLANS AND SPECIFICATIONS. THE CONTRACTOR SHALL BE FAMILIAR WITH ALL REQUIRED STANDARD SPECIFICATIONS, DETAILS, AND SUPPLEMENTS PRIOR TO BEGINNING CONSTRUCTION.

5. THE CONTRACTOR SHALL COMPLY WITH ALL LOCAL, STATE AND FEDERAL LAWS, CODES AND REGULATIONS APPLICABLE TO THE ITEMS AND AREAS PERTAINING TO THESE PLANS AND SPECIFICATIONS.

6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING AND COMPLYING WITH ALL PERMITS REQUIRED TO COMPLETE THE LANDSCAPE CONSTRUCTION WORK COVERED BY THESE PLANS AND SPECIFICATIONS.

7. THE QUANTITIES AND SITE CONDITIONS SHOWN ON THESE PLANS ARE FOR INFORMATIONAL PURPOSES ONLY. THE CONTRACTOR SHALL VERIFY THE ACTUAL QUANTITIES AND SITE CONDITIONS PRIOR TO BEGINNING THE WORK COVERED BY THESE PLANS AND SPECIFICATIONS.

8. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO UTILITIES AND/OR FACILITIES CAUSED DURING THE LANDSCAPE CONSTRUCTION OPERATIONS. THE CONTRACTOR SHALL CALL FOR BLUE STAKE AT 602-263-1100 TWO WORKING DAYS PRIOR TO ANY EXCAVATION.

9. ANY DISCREPANCIES FOUND BETWEEN THESE PLANS AND SPECIFICATIONS AND THE SITE SHALL BE REPORTED TO THE CITY OF CHANDLER REPRESENTATIVE PRIOR TO STARTING ANY LANDSCAPE WORK.

10. SHOULD THE CONTRACTOR HAVE ANY QUESTIONS REGARDING THESE PLANS AND SPECIFICATIONS, OR SHOULD THERE BE ANY DISCREPANCIES, THE CONTRACTOR SHALL CONTACT THE CITY OF CHANDLER REPRESENTATIVE DIRECTLY FOR CLARIFICATION BEFORE PROCEEDING FURTHER WITH ANY OTHER WORK.

11. IT IS THE CONTRACTOR'S RESPONSIBILITY TO INSPECT THE JOB SITE TO BECOME FAMILIAR WITH ALL EXISTING CONDITIONS THAT COULD AFFECT THE INSTALLATION OF ANY WORK SET FORTH IN THESE PLANS AND SPECIFICATIONS PRIOR TO BEGINNING WORK.

12. CONTRACTOR SHALL VERIFY ROCK AND SOIL CONDITIONS WITHIN THE PROJECT SITE PRIOR TO CONSTRUCTION. NO EXTRA PAYMENT OR TIME EXTENSION WILL BE GIVEN DUE TO ROCKY SOIL CONDITIONS. CONTRACTOR IS RESPONSIBLE FOR CONDUCTING SITE INSPECTIONS AND CHECKING SOIL BORING LOGS TO DETERMINE SUBSURFACE CONDITIONS PRIOR TO CONSTRUCTION.
13. CONTRACTOR TO VERIFY LIMITS OF DISTURBANCE THROUGHOUT THE PROJECT AND BRING DISCREPANCIES IMMEDIATELY TO THE ATTENTION OF THE CITY OF CHANDLER REPRESENTATIVE.

14. ALL WORK TO BE CONFINED WITHIN THE EXISTING LIMITS OF DISTURBANCE.

15. THE INFORMATION SHOWN ON THIS SET OF DRAWINGS CONCERNING TYPE AND LOCATION OF UNDERGROUND UTILITIES IS DIAGRAMMATIC AND NOT REPRESENTED TO BE ACCURATE OR ALL INCLUSIVE. THE INFORMATION IS MADE AVAILABLE TO PROVIDE THE CONTRACTOR WITH READY ACCESS TO THE SAME INFORMATION USED BY THE CONSULTANT IN PREPARATION OF THESE DOCUMENTS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY TYPE AND LOCATION OF UTILITIES AS NECESSARY TO AVOID DAMAGE THERETO. ALL UTILITIES SHALL BE LOCATED AND VERIFIED PRIOR TO ANY EXCAVATION.

16. THE CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL AND LEGAL DISPOSAL OF ANY DEBRIS RESULTING FROM THE CONSTRUCTION. AT NO TIME SHALL ANY OF THIS MATERIAL OBSTRUCT THE NORMAL OPERATION OF ANY ADJOINING STREET AREAS ASSOCIATED WITH THIS PROJECT.

17. THE JOB SITE AT THE COMPLETION OF THE CONSTRUCTION SHALL BE CLEANEED OF ANY DEBRIS RESULTING FROM CONSTRUCTION. NO JOB WILL BE CONSIDERED COMPLETE UNTIL ALL CURBS, GUTTERS AND PAVEMENT HAVE BEEN SWEEPED CLEAN OF ALL DIRT AND DEBRIS.

18. SUBSTANTIAL INSPECTION - AN INSPECTION AT COMPLETION OF THE LANDSCAPE AND IRRIGATION INSTALLATION WILL BE MADE BY THE CITY OF CHANDLER. ANY DEFICIENCIES IN THE INSTALLATION WILL BE NOTED AND CORRECTED BY THE CONTRACTOR PRIOR TO THE START OF THE LANDSCAPE MAINTENANCE PERIOD.

19. LANDSCAPE MAINTENANCE PERIOD - THE CONTRACTOR SHALL NOTIFY THE CITY OF CHANDLER REPRESENTATIVE WHEN ALL LANDSCAPING IS COMPLETED, INCLUDING ALL SUBSTANTIAL COMPLETION PUNCHLIST ITEMS, AND READY FOR A LANDSCAPE AND IRRIGATION INSPECTION. THE CITY OF CHANDLER SHALL ISSUE A LETTER TO BEGIN THE LANDSCAPE MAINTENANCE PERIOD. THE LANDSCAPE MAINTENANCE PERIOD SHALL BE FOR A MINIMUM OF 90 DAYS AND EXTEND UNTIL ALL TURF IS ESTABLISHED AND ACCEPTED BY THE CITY OF CHANDLER REPRESENTATIVE FOR ONE FULL GROWING SEASON.

20. FINAL ACCEPTANCE - A FINAL INSPECTION IS REQUIRED AT THE END OF THE LANDSCAPE MAINTENANCE PERIOD TO DETERMINE FINAL ACCEPTANCE. A LETTER OF FINAL ACCEPTANCE WILL BE ISSUED BY THE CITY OF CHANDLER REPRESENTATIVE.

21. CITY OF CHANDLER BUILDING SAFETY INSPECTIONS ARE REQUIRED FOR THE BACKFLOW PREVENTER AND RELATED ELECTRICAL CONNECTIONS AND REQUIRE A MINIMUM OF 48 HOURS PRIOR NOTIFICATION TO THE CITY OF CHANDLER.

22. THE CONTRACTOR IS ADVISED THAT DAMAGE TO ANY PORTION OF THIS PROJECT'S CURBS, GUTTERS, PAVEMENTS, FENCING OR SURROUNDING AREAS THAT IS NOT NOTED ON THE PLANS TO BE DISTURBED IS TO BE REPAIRED AT THE CONTRACTOR'S EXPENSE.

23. ALL EQUIPMENT AND MATERIALS NOT SHOWN OR SPECIFIED ON THE PLANS OR SPECIFICATIONS, BUT WHICH ARE REQUIRED TO COMPLETE THIS INSTALLATION, SHALL BE SUPPLIED BY THE CONTRACTOR AS PART OF THIS CONTRACT WORK AND SHALL BE CONSIDERED INCLUDED TO THE WORK INVOLVED.

24. ALL PLANT PITS ARE TO BE INSPECTED BY CITY OF CHANDLER REPRESENTATIVE PRIOR TO PLANTING BY THE CONTRACTOR. THE CONTRACTOR SHALL REQUEST AN INSPECTION 48 HOURS IN ADVANCE.

25. PLANT PIT DEPTH SHALL BE MEASURED ON THE LOW SIDE OF PLANT PIT WHEN ON A SLOPE.

26. ALL PLANTS SHALL BE CENTERED IN PLANT PITS.

27. FINAL PLANT MATERIAL PLACEMENT IN THE FIELD MAY BE REQUIRED TO BE ADJUSTED WHERE TREES OCCUR DIRECTLY UNDER OR OVER EXISTING UTILITIES.

28. THE PLANT PIT SOIL MIXTURE SHALL COMPLY WITH THE MAG STANDARDS SECTION 430 AND SHALL BE PLACED IN SIX INCH (6") LIFTS. EACH LIFT SHALL BE WATER SETTLED WITHOUT PUDDLING.

29. WHERE CALICHE IS ENCOUNTERED IN PLANT PITS, THE WIDTH OF THE PIT SHALL BE INCREASED BY ONE-THIRD (1/3) OVER SPECIFICATIONS. A LIQUID PENETRANT SHALL BE INCORPORATED FOR EACH PIT PER MANUFACTURER'S RECOMMENDATIONS. NO OVER EXCAVATION SHALL OCCUR WITHOUT APPROVAL OF CITY OF CHANDLER. IF CALICHE IS DISCOVERED TO BE PREVALENT IN THE AREA, CONTRACTOR SHALL IMMEDIATELY NOTIFY CITY OF CHANDLER REPRESENTATIVE TO DETERMINE ACTION AND ASSOCIATED COST. CONTRACTOR SHALL NOT PROCEED WITH ADDITIONAL WORK UNTIL DIRECTED BY CITY OF CHANDLER REPRESENTATIVE.

30. PLANT LOCATIONS ARE DIAGRAMMATIC. THE CONTRACTOR SHALL STAKE T LOCATIONS TO BE APPROVED BY CITY OF CHANDLER REPRESENTATIVE PRIOR TO INSTALLATION. THE STAKES SHALL BE CODED TO IDENTIFY THE PLANTS.

31. THE CONTRACTOR SHALL PROVIDE GRANITE SAMPLES TO CITY OF CHANDLER REPRESENTATIVE PRIOR TO INSTALLATION. A 5-GALLON SAMPLE SHALL BE DELIVERED TO PROJECT SITE AT LOCATION APPROVED BY CITY OF CHANDLER REPRESENTATIVE AND SPREAD TO THICKNESS AS CALLED FOR IN THE DETAILS AND WASHED, FOR REVIEW AND APPROVAL.

32. PLANT MATERIAL SHALL NOT BE INSTALLED OR ALLOWED TO GROW WITHIN 3' OF A FIRE HYDRANT OR FIRE DEPARTMENT CONNECTION (FDC). MAINTAIN A MINIMUM VERTICAL CLEARANCE OF 15 FEET WHERE TREES OVERHANG CURB LINE.

33. PLANTS DELIVERED WITH CRACKED OR BROKEN CONTAINERS WILL BE REJECTED.

34. MINIMUM PLANT PITS SHALL BE PER DETAILS AND SPECIFICATIONS.

35. DRY WELLS WERE INSPECTED DURING DESIGN PHASE AND ARE FUNCTIONING CORRECTLY. CONTRACTOR TO PROTECT IN PLACE, IF MATERIAL GETS INTO DRY WELL. CONTRACTOR IS RESPONSIBLE FOR CLEANING THE DRY WELL.

36. ONLY CITY OF CHANDLER ARBORIST APPROVED HERBICIDE MAY BE USED WITHIN TREE PROTECTION ZONES. TURF WITHIN THESE ZONES MUST BE REMOVED MANUALLY.

37. CHANDLER REPRESENTATIVES WILL HAND SELECT TREES AT THE NURSERY. IF INSUFFICIENT QUANTITIES OF ACCEPTABLE PANT MATERIAL IS FOUND AT ONE NURSERY, THE CONTRACTOR SHALL SOURCE TREES FROM OTHER PREFERRED NURSERIES.

CITY OF CHANDLER NOTES:

1. ALL TREES WITHIN VEHICULAR SIGHT DISTANCE/VISIBILITY CLEAR ZONES SHALL HAVE A VERTICAL CANOPY CLEARANCE/CLEAR TRUNK TO 6' ABOVE THE NEAREST CURB ELEVATION. ALL SHRUBS IN THIS AREA MAY NOT REACH A MATURE HEIGHT OVER 24". EandDSM CHAPTER 8, SECTION 8.4.3.3

2. TREES MUST MAINTAIN A MINIMUM 6' SETBACK FROM THE FACE OF CURB (IN AREAS EFFECTED BY FUTURE TURN LANES, TREES MAY BE PLACED NO LESS THAN 4' FROM FACE OF CURB). EandDSM CHAPTER 8, SECTION 8.4.3.4

3. THE LANDSCAPE WILL BE MAINTAINED BY THE CONTRACTOR FOR A PERIOD OF NINETY (90) DAYS FOLLOWING A PRELIMINARY INSPECTION AND ACCEPTANCE BY THE CITY. IF NOT HEALTHY AT THE END OF THE MAINTENANCE PERIOD, THE MAINTENANCE SHALL BE CONTINUED UNTIL THE PLANT MATERIAL IS APPROVED BY THE CITY. EandDSM CHAPTER 8, SECTION 8.2.3.7

4. THE CONTRACTOR SHALL GUARANTEE ALL PLANT MATERIAL FOR A PERIOD OF ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE OR REPLACEMENTS. ALL ROCK GROUND COVER AREAS SHALL BE SPRAYED WITH PRE-EMERGENT HERBICIDE BY A LICENSED APPLICATOR AS PART OF INSTALLATION AS FOLLOWS (A MINIMUM OF THREE (3) APPLICATIONS ARE REQUIRED):
 - PRIOR TO THE APPLICATION OF GRANITE: ½ GALLON PER ACRE
 - AFTER GRANITE APPLICATION: ¾ GALLON PER ACRE
 - PRIOR TO FINAL ACCEPTANCE: 1 GALLON PER ACRE

THE CITY SHALL BE FURNISHED WITH WRITTEN DOCUMENTATION OF APPLICATORS LICENSE, ALL MATERIALS USED, APPLICATION RATES, AND THE SCHEDULED DATES FOR APPLICATION PRIOR TO THE START OF ANY APPLICATION (SPRAY LOGS). EandDSM CHAPTER 8 SECTION 8.2.4.2

6. INSPECTIONS

THE CITY'S CIVIL ENGINEERING OFFSITE INSPECTION GROUP WILL INSPECT AND APPROVE THE WORK AT THE FOLLOWING STAGES OF COMPLETION, ANY WORK COMPLETED WITHOUT THESE INSPECTION MUST BE REMOVED PRIOR TO ACCEPTANCE OF THE PHASE OF WORK. THESE STAGES ARE:

DEMOLITION - COMBINED AREA QUANTITIES		
SYMBOL	DESCRIPTION	QUANTITY
1	REMOVE CONCRETE HEADER	11,235 SF.
2	REMOVE & DISPOSE OF TURF	1,419,677 SF.
3	REMOVE DECOMPOSED GRANITE	93,836 SF.
4	REMOVE WATER METER, SERVICE LINE AND CLOSE CORP STOP AT WATER MAIN	2
5	REMOVE BACKFLOW PREVENTER	2
6	DISCONNECT AND REMOVE BOOSTER PUMP	2
7	REMOVE IRRIGATION CONTROLLER	10
8	SAWCUT, REMOVE AND REPLACE EXISTING ASPHALT PER MAG STD DTL 200-1 "T-TOP", TRENCH REPAIR BACKFILL WITH 1/2 SACK CLSM	26 SY.

PLANTING - COMBINED AREA QUANTITIES		PLANT INVENTORY QUANTITY	
Designation	Quantity	Tree	Palm
36" Box Tree	225	Salvage	0
24" Box Tree	543	Destroy	5
15 Gallon Tree	47	Protect In Place	299
5 Gallon Shrub	2,251	Total	307
5 Gallon Groundcover	1,841		
5 Gallon Accent	2,214		

SURFACE MATERIALS - COMBINED AREA QUANTITIES			
SYMBOL	DESCRIPTION	COLOR & SIZE	QTY
	Decomposed Granite	Desert Gold or approved Equal, 1 1/4" Screened MIN., 2 1/2" Depth Detail 7 on SHT. D-1.01	1,431,761 SF.
	Rip Rap	Desert Gold or Approved Equal, 3" - 6", 6" Depth Detail 6 on SHT. D-1.01	6,651 SF.
	Concrete Header	8" x 6" Concrete Header	2,408 LF.
	Turf Grass Seed	'Rio' F1 Hybrid Bermuda	71,909 SF

NOTE: ALL QUANTITIES PROVIDED ARE INCLUSIVE OF BASE BID, ALTERNATE NO. 1 & ALTERNATE NO. 2.

Landscape Legend - Combined Area Quantities

Trees / Palms		Size	Qty.	Remarks
	Acacia aneura Mulga	15 Gal. 24" Box	14 147	15 Gal: Standard H 4'-5" W 1'-2" Cal. 0.5"-0.75" 24": Standard H 6'-7" W 2'-3" Cal. 0.75" -1.25"
	Acacia salicina Willow Acacia	24" Box 36" Box	73 42	24": Standard H 7'-8" W 2.5'-3.5' Cal. 1.25"-1.5" 36": Standard H 9'-11" W 5'-7" Cal. 2.0"-2.5"
	Chitalpa tashkentensis Chitalpa	24" Box	23	24": Standard H 6'-7" W 3'-4" Cal. 1.0"-1.5" 36": Standard H 8'-10" W 5'-7" Cal. 2.0"-2.5"
	Chilopsis linearis spp Desert Willow	15 Gal. 24" Box	27 140	15 Gal: Multi H 4'-5" W 2'-3" 24": Multi H 5'-7" W 3'-4"
	Eucalyptus papuana Ghost Gum Eucalyptus	15 Gal. 24" Box	6 5	15 Gal: Standard H 6'-7" W 3'-4" Cal. 0.5"-1.0" 24": Standard H 8'-10" W 5'-7" Cal. 1.25"-1.5"
	Olea europaea 'Wilsonii' Wilson's Fruitless Olive	24" Box 36" Box	3 61	24": Multi H 6'-8" W 3'-5" 36": Multi H 8'-10" W 5'-7"
	Parkinsonia Florida Blue Palo Verde	24" Box 36" Box	11 34	24": Multi H 5'-8" W 3'-4" 36": Multi H 8'-10" W 5'-7"
	Pistacia 'Red Push' Red Push Pistache	24" Box 36" Box	31 62	24": Standard H 7'-8" W 2.5'-3.5' Cal. 1.0"-1.5" 36": Standard H 12'-14" W 6'-8" Cal. 3"-4"
	Quercus Virginiana 'Heritage' Southern Live Oak	24" Box 36" Box	110 26	24": Standard H 7'-8" W 3'-4" Cal. 1.0"-1.5" 36": Standard H 10'-12" W 5'-7" Cal. 1.75"-2.5"
	Existing Palm Protect In Place	Varies	3	Varies
	Existing Tree Protect In Place	Varies	299	Varies

Shrubs		Size	Qty.	Remarks
	Calliandra californica Red Fairy Duster	5 Gallon	141	Full Past Can
	Caesalpinia pulcherrima Red Bird of Paradise	5 Gallon	490	Full Past Can
	Simmondsia chinensis Jojoba	5 Gallon	235	Full Past Can
	Buddleja marrubifolia Woolly Butterfly Bush	5 Gallon	161	Full Past Can
	Leucophyllum frutescens Texas Sage	5 Gallon	261	Full Past Can
	Ruellia peninsularis Desert Ruellia	5 Gallon	233	Full Past Can
	Senna artemisioides Feathery Senna	5 Gallon	236	Full Past Can
	Tecoma x 'Orange Jubilee' Orange Jubilee	5 Gallon	494	Full Past Can

Groundcovers		Size	Qty.	Remarks
	Acacia redolens 'Low Boy' Trailing Acacia	5 Gallon	527	Full Past Can
	Convolvulus cneorum Bush Morning Glory	5 Gallon	726	Full Past Can
	Eremophila glabra 'Mingenew Gold' Outback Sunrise Ernu	5 Gallon	515	Full Past Can
	Oenothera berlandieri Mexican Evening Primrose	5 Gallon	73	Full Past Can

Accents		Size	Qty.	Remarks
	Agave americana 'Variegata' Vanegated Century Plant	5 Gallon	299	Full Past Can
	Agave desmettiana Smooth Agave	5 Gallon	105	Full Past Can
	Hesperaloe parviflora 'Perpa' Brakelights Red Yucca	5 Gallon	240	Full Past Can
	Hesperaloe parviflora 'Yellow' Yellow Yucca	5 Gallon	282	Full Past Can
	Hesperaloe funifera Giant Hesperaloe	5 Gallon	162	Full Past Can
	Muhlenbergia rigens Deer Grass	5 Gallon	690	Full Past Can
	Nolina microcarpa Bear Grass	5 Gallon	412	Full Past Can
	Opuntia engelmannii Engelmann's Prickly Pear	5 Gallon	24	Full Past Can

PROTECTION FENCING LEGEND:		
SYMBOL	DESCRIPTION	QTY
	TREE PROTECTION FENCING FOR EXISTING TREES. REFER TO DETAILS 1-2, SHEET LD-1.02	19,490 LF



4649 E COTTON GIN LOOP B2 PHOENIX, AZ 85040 602.438.2221

CONSULTANT(S):

CLIENT:



CITY OF CHANDLER
TURF TO XERISCAPE PROGRAM
PHASE I
LANDSCAPE CONSTRUCTION NOTES AND QUANTITIES

05.19.25 | ADDENDUM 1

#	DATE	DESCRIPTION
		REVISIONS



DESIGNED BY: AL, KZ	DRAWN BY: J2
CHECKED BY: SP/JV	APPROVED BY: JV
SCALE: NTS	DATE: 04/22/25
DRAWING NO: GN-1.03	SHEET NO: 4 OF 66

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IRRIGATION GENERAL NOTES:

1. THE QUANTITIES AND CONDITIONS SHOWN ON THESE PLANS ARE FOR INFORMATIONAL PURPOSES ONLY. THE CONTRACTOR SHALL VERIFY THE ACTUAL QUANTITIES AND SITE CONDITIONS PRIOR TO BIDDING THE WORK.
2. PRIOR TO ANY WORK, THE CONTRACTOR SHALL PERFORM A SURVEY TO ESTABLISH THE OWNER RIGHT OF WAY AND WORK LIMITS.
3. PRIOR TO COMMENCEMENT OF ANY WORK, THE ONTRACTOR SHALL CONTACT BLUE STAKE (811 OR 602-263-1100) TO VERIFY LOCATIONS OF UNDERGROUND UTILITIES THAT MAY BE AFFECTED BY THIS WORK, AND SHALL BE RESPONSIBLE FOR DAMAGES TO SUCH UTILITIES CAUSED AS A RESULT OF THE WORK.
4. READ THOROUGHLY AND BECOME FAMILIAR WITH THE INSTALLATION DETAILS FOR THIS AND RELATED WORK PRIOR TO CONSTRUCTION.
5. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT ADJACENT PROPERTIES FROM DAMAGE THROUGHOUT CONSTRUCTION.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING AND COMPLYING WITH ALL PERMITS REQUIRED TO COMPLETE THE WORK COVERED BY THESE PLANS.
7. THE CONTRACTOR SHALL COMPLY WITH ALL LOCAL, STATE AND FEDERAL LAWS, CODES ANDREGULATIONS APPLICABLE TO THE WORK COVERED BY THESE PLANS.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, COORDINATION AND SEQUENCING DURING CONSTRUCTION UNLESS SPECIFICALLY ADDRESSED OTHERWISE IN THESE PLANS AND SPECIFICATIONS.
9. ONCE CONSTRUCTION OPERATIONS HAVE COMMENCED, IT IS THE INTENTION OF THIS PROJECT THAT THE JOB SITE BE FULLY MANNED/STAFFED UNTIL THE COMPLETION OF THE WORK WITHOUT GAPS IN PROGRESS.

10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPENSATING THE OWNER FOR ANY DESIGN CHANGES MADE AS RESULT OF DEVIATION BY THE CONTRACTOR FROM THESE PLANS AND SPECIFICATIONS OR DUE TO ERRORS, FAULTY MATERIAL OR FAULTY WORKMANSHIP.
11. ALL MATERIALS UTILIZED ON THIS PROJECT ARE INTENDED TO BE NEW AND OF THE BEST GRADE AVAILABLE. NO USED, SALVAGED, RECLAIMED, OR SECONDS WILL BE ACCEPTED.
12. THE CONTRACTOR SHALL VERIFY AND ACCEPT ALL SITE CONDITIONS AND ROUGH GRADES PRIOR TO STARTING ANY WORK. ALL DRAINAGE FLOWS SHALL BE PROTECTED AND MAINTAINED THROUGHOUT CONSTRUCTION.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DUST CONTROL DURING CONSTRUCTION AND SHALL ACQUIRE A DUST CONTROL PERMIT FROM MARICOPA COUNTY. ALL COST ASSOCIATED WITH DUST CONTROL AND PERMITS IS CONSIDERED INCIDENTAL TO THE PROJECT.

14. THE CONTRACTOR SHALL BE LIABLE FOR PAYMENT OF STATE, COUNTY, AND CITY SALES TAXES.
15. THE CONTRACTOR AGREES TO INDEMNIFY AND SAVE HARMLESS THE OWNER, ITS OFFICERS, AGENTS, AND EMPLOYEES AND ANY JURISDICTION OR AGENCY ISSUING PERMITS FOR ANY WORK INCLUDED IN THE PROJECT FROM ALL SUITS, INCLUDING ATTORNEY'S FEES AND COST OF LITIGATION, ACTIONS, LOSS DAMAGE, EXPENSE, COST OR CLAIMS OF ANY CHARACTER OR NATURE ARISING OUT OF THE WORK DONE IN FULFILLMENT OF THE TERMS OF THESE PLANS OR SPECIFICATIONS, OR FROM ANY CLAIM OR ACT UNDER THE WORKMAN'S COMPENSATION LAW, OR ARISING OUT OF THE CONTRACTOR TO CONFORM TO ANY SUITS, REGULATION, LAW OR COURT DECREE.

16. THE CONTRACTOR SHALL PROVIDE IRRIGATION COVERAGE TO ALL PLANT MATERIAL AS IDENTIFIED PER PLAN.
17. INSTALL MAINLINES AND LATERALS AT THE DEPTHS SPECIFIED ON THE TRENCHING DETAIL.
18. INSTALL ALL SLEEVES AT PIPE DEPTHS OR AT 24" MINIMUM COVER WHEN UNDER DRIVING SURFACES.
19. 24 VOLT CONTROL WIRE CONNECTIONS ARE TO BE MADE WITH APPROVED WATERPROOF WIRE CONNECTORS WITH SEALANT.
20. ALL VALVE BOXES SHALL BE TAN IN COLOR .

21. ALL IRRIGATION EQUIPMENT SHALL BE INSTALLED PER PROJECT SPECIFICATIONS. CITY OF CHANDLER SANDARD DETAILS, IRRIGATION DETAILS IN PLANS, AND PER MANUFACTURER'S SPECIFICATIONS.
22. ALL GEOTEXTILE FABRIC FOR IRRIGATION EQUIPMENT SUMPS SHALL BE NON-WOVEN CLASS 'B' PER MAG SECTION 796.2.2.
23. AN INSPECTION INTERVAL ON THE TEMPORARY IRRIGATION SYSTEM FOR PLANTS DESIGNATED AS PIP UNTIL THE PERMANENT IRRIGATION SYSTEM IS OPERATIONAL

TRENCHING ADJACENT TO EXISTING TREES SPECIAL NOTE:

WHERE IT IS NECESSARY TO EXCAVATE ADJACENT TO EXISTING TREES, THE CONTRACTOR SHALL USE CARE TO AVOID INJURY TO TREES AND TREE ROOTS. EXCAVATION IN AREAS WHERE 2" AND LARGER ROOTS OCCUR SHALL BE DONE BY HAND. ROOTS 6" AND LARGER IN DIAMETER, EXCEPT DIRECTLY IN THE PATH OF PIPE OR CONDUIT, SHALL BE TUNNELED UNDER AND SHALL BE HEAVILY WRAPPED WITH BURLAP TO PREVENT SCARRING OR EXCESSIVE DRYING. WHERE A DITCHING MACHINE IS RUN CLOSE TO TREES HAVING ROOTS SMALLER THAN 2 INCHES IN DIAMETER, THE WALL OF THE TRENCH ADJACENT TO THE TREE SHALL BE HAND TRIMMED, MAKING CLEAN CUTS. ROOTS 1" AND LARGER IN DIAMETER SHALL BE PAINTED WITH TWO COATS OF TREE SEAL OR APPROVED EQUAL. TRENCHES WITH IRRIGATION PIPING ADJACENT TO TREES SHOULD BE PRESSURE TESTED AS REQUIRED AND CLOSED WITHIN 24 HOURS, AND WHERE THIS IS NOT POSSIBLE THE SIDE OF THE TRENCH ADJACENT TO THE TREE SHALL BE KEPT SHADED WITH BURLAP OR CANVAS.

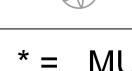
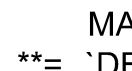
IRRIGATION CONTRACTOR NOTES:

1. CONTRACTOR SHALL VERIFY STATIC PRESSURE AT CITY MAINLINE PRIOR TO INITIATING ANY WORK AND NOTIFY BOTH CITY AND LANDSCAPE ARCHITECT IF STATIC PRESSURE IS BEYOND 10% ABOVE OR BELOW STATIC DESIGN PRESSURE OF 60 PSI PRIOR TO INITIATING ANY WORK.
2. THE PLANS INDICATE A DETAILED LAYOUT OF IRRIGATION LINES, LATERALS, AND EQUIPMENT LOCATIONS; HOWEVER, SOME OF THE PIPING MAY BE SHOWN OUTSIDE OF THE PLANTING AREAS FOR GRAPHIC CLARITY. MULTIPLE LINES DRAWN PARALLEL IN CLOSE PROXIMITY ARE INTENDED TO BE INSTALLED WITHIN SAME TRENCH. THE CONTRACTOR SHALL FOLLOW THE INTENT OF THE PLAN LAYOUT AND SHALL REVIEW AND OBTAIN WRITTEN APPROVAL FROM THE OWNER'S AUTHORIZED REPRESENTATIVE FOR ANY REQUESTED CHANGES.
3. DO NOT PROCEED WITH THE INSTALLATION OF THE IRRIGATION SYSTEM WHEN IT IS OBVIOUS IN THE FIELD THAT DISCREPANCIES IN CONSTRUCTION SPECIFICATIONS, DETAILS, LEGENDS, OR NOTES ARE DISCOVERED. BRING ALL SUCH DISCREPANCIES TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE UPON DISCOVERY .
4. THE IRRIGATION CONTRACTOR IS RESPONSIBLE FOR THE INSTALLATION OF IRRIGATION SLEEVEING, SLEEVES ARE REQUIRED FOR BOTH PIPING AND ELECTRICAL WIRING AT EACH HARDSCAPE CROSSING. COORDINATE INSTALLATION OF SLEEVEING WITH OTHER TRADES. ANY PIPE OR WIRE WHICH PASSES BENEATH EXISTING HARDSCAPE WHERE SLEEVEING WAS NOT INSTALLED AS SHOWN ON PLANS WILL REQUIRE HORIZONTAL BORING BY THE IRRIGATION CONTRACTOR AT NO ADDITIONAL COST TO THE CITY.
5. CONTRACTOR SHALL MAINTAIN THE IRRIGATION SYSTEM FOR A PERIOD OF NINETY (90) DAYS AFTER PROJECT CONSTRUCTION ACCEPTANCE. MAINTENANCE SHALL INCLUDE ALL NECESSARY REPLACEMENTS, ADJUSTMENTS, AND CLEAN UP OPERATIONS.
6. CONTRACTOR SHALL GUARANTEE THE IRRIGATION SYSTEM MATERIALS AND LABOR FOR A PERIOD OF ONE (1) YEAR AFTER MAINTENANCE CONCLUSION AND ACCEPTANCE.
7. ADJUST IRRIGATION OPERATING TIMES TO ACCOMMODATE FOR PLANT MATURITY, SOIL TYPE, PLANT EXPOSURE, SLOPE CONDITIONS, AND SEASONAL REQUIREMENTS.
8. CONTRACTOR SHALL NOT DISTURB EXISTING PLANTS OR GROUND SURFACES IN AREAS SHOWN ON PLANS AS "NON-DISTURBANCE AREAS" OR SHALL BE SUBJECT TO RESTORING AREAS BACK TO ORIGINAL CONDITION OR BETTER AT NO ADDITIONAL COST TO THE CITY.
9. THE CITY'S CIVIL ENGINEERING OFFSITE INSPECTIONS GROUP WILL INSPECT AND APPROVE THE WORK AT THE FOLLOWING STAGES OF C OMPLETION. ANY WORK COMPLETED WITHOUT THESE INSPECTIONS MUST BE RMOVED PRIOR TO ACCEPTANCE OF THAT PHSE OF WORK. THESE STAGES ARE:

- A. COMPLETION OF ALL TRENCHING AND INSTALLATION OF ALL MAIN LINES PRIOR TO BACK FILLING, INCLUDING THE BACKFLOW PREVENTER AND ELECTRIC VALVES. THE MAINLINE SHALL BE PRESSURE TESTED FOR THIRTY (30) MINUTES AT THIS INSPECTION
- B. COMPLETION OF INSTALLATION OF ALL CONTROL WIRES PRIOR TO BACKFILLING.
- C. INSTALLTLION OF ALL LATERAL LINES AND HEADS PROOR TO BACKFILLING.

WIRE PATH NOTES:

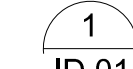
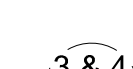
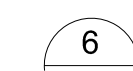
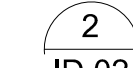
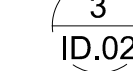
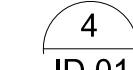
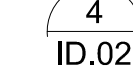
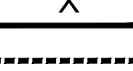
1. ALL CONVENTIONAL CONTROL WIRES SHALL BE TYPE UF & TWU IN ACCORDANCE TO NATIONAL ELECTRIC CODE FOR OPERATION AT A POTENTIAL OF 600 VOLTS OR LESS AND AT A TEMPERATURE OF 75°C OR LESS. LISTED BY UL, ETL, OR CSA. CONDUCTORS SHALL BE OF SOFT DRAWN BARE COPPER MEETING THE REQUIREMENTS OF ASTM SPECIFICATION B-3 OR B-8. TEMPERATURE RATING OF -10°C + 75°C. INSULATION SHALL BE POLYVINYL CHLORIDE RATED TO 75°C CONFORMING TO UL STANDARDS 493 AND 83. INSULATION SHALL BE MARKED WITH MANUFACTURER'S NAME, VOLTAGE RATING, SIZE AND TYPE, LISTING FILE NUMBERS, RoHS. ALL CABLES SHALL BE TESTED PHYSICALLY AND ELECTRICALLY IN ACCORDANCE WITH UL STANDARD 493 AND 83. IT SHOULD ALSO BE TESTED TO CSA RULE C.22.2 NO. 75. ALL REELS AND CARTONS BEAR LISTING LABELS.
2. ALL COMMON AND SPARE WIRES SHALL BE #12 GAUGE SOLID WIRE. ALL CONTROL WIRES SHALL BE #14 GAUGE SOLID WIRE. ALL WIRES SHALL BE INSTALLED WITHIN CONTINUOUS GRAY COLOR PVC ELECTRICAL CONDUIT WHEN BELOW GRADE AND EMT CONDUIT WHEN ABOVE GRADE. DIFFERENT COLOR WIRES SHALL BE USED TO IDENTIFY WHICH CONTROLLER WIRES ARE ASSOCIATED.
3. ALL 24 VOLT CONTROL WIRE CONNECTIONS SHALL BE MADE WITH 3M DBR/Y-6 GEL FILLED CONNECTOR SEALING PACKS OR APPROVED EQUAL PER IRRIGATION CONTROLLER MANUFACTURERS SPECIFICATIONS.
4. DIRECT BURY OF WIRE SPLICES IS NOT ACCEPTABLE. WIRE SPLICES SHALL ONLY OCCUR INSIDE VALVE BOXES AT VALVES AS SHOWN PER DETAILS AND INSIDE DEDICATED WIRE SPLICE BOXES WHERE WIRES TEE IN DIFFERENT DIRECTIONS AND WHERE WIRE RUNS EXCEED 2,500 LF. ALL WIRE ENDS INSIDE WIRE SPLICE BOXES SHALL BE LABELED WITH ASSOCIATED STATION NUMBERS.

EMITTER LEGEND				
SYMBOL:	BOTANICAL NAME / COMMON NAME:	QUANTITY / TYPE:	# PORTS / VOLUME:	VOLUME PER PLANT:
TREES:				
	ACACIA ANEURA	1 / MULTI	4 / 2.0 GPH	8.0 GPH
	MULGA ACACIA ACACIA SALICINA	1 / MULTI	5 / 2.0 GPH	10.0 GPH
	WILLOW ACACIA CHILOPSIS LINEARIS	1 / MULTI	4 / 2.0 GPH	8.0 GPH
	DESERT WILLOW CHITALPA TASHKENTENSIS	1 / MULTI	4 / 2.0 GPH	8.0 GPH
	CHITALPA EUCALYPTUS PAPUANA	1 / MULTI	5 / 2.0 GPH	10.0 GPH
	GHOST GUM OLEA EUROPAEA 'WILSONII'	1 / MULTI	5 / 2.0 GPH	10.0 GPH
	PARKINSONIA FLORIDUM	1 / MULTI	12 / 2.0 GPH	12.0 GPH
	BLUE PALO VERDE PISTACIA 'RED PUSH'	1 / MULTI	12 / 2.0 GPH	12.0 GPH
	RED PUSH PISTACHE QUERCUS VIRGINIANA 'HERITAGE'	1 / MULTI	4 / 2.0 GPM	8.0 GPH
	HERITAGE LIVE OAK	2 / MULTI	12 / 2.0 GPH	24.0 GPH
	EXISTING TREE	2 / MULTI	12 / 2.0 GPH	24.0 GPH
	EXISTING TREE OAK IN DG	2 / MULTI	12 / 2.0 GPH	24.0 GPH
	EXISTING TREE- EUCALYPTUS, ASH, OAK, OLIVE, & DATE PALM;	2 / DEEP ROOT & 2 / MULTI **	24 / 2.0 GPH	48.0 GPH
	EXISTING TREE- PINE <24" CALIPER	3 / DEEP ROOT & 3 / MULTI **	36 / 2.0 GPH	72.0 GPH
	EXISTING TREE- PINE >24" CALIPER			
SHRUBS:				
	CAESALPINIA PULCHERRIMA	1 / MULTI *	2 / 1.0 GPH	2.0 GPH
	RED BIRD OF PARADISE CALLIANDRA CALIFORNICA	1 / MULTI *	1 / 1.0 GPH	1.0 GPH
	BAJA RED FAIRY DUSTER SIMMONDSIA CHINENSIS	1 / MULTI *	1 / 1.0 GPH	1.0 GPH
	JOJOBA BUDDLEJA MARRUBIIFOLIA	1 / MULTI *	1 / 1.0 GPH	1.0 GPH
	WOOLLY BUTTERFLY BUSH LEOCOPHYLLUM FRUTESCENS	1 / MULTI *	1 / 1.0 GPH	1.0 GPH
	TEXAS SAGE RUELLIA PENINSULARIS	1 / MULTI *	1 / 1.0 GPH	1.0 GPH
	BAJA RUELLIA SENNA ARTIMISIODES	1 / MULTI *	2 / 1.0 GPH	2.0 GPH
	FEATHERY SENNA TECOMA x ORANGE JUBILEE	1 / MULTI *	2 / 1.0 GPH	2.0 GPH
	ORANGE JUBILEE			
GROUNDCOVERS:				
	ACACIA REDOLENS 'LOW BOY'	1 / MULTI *	1 / 1.0 GPH	1.0 GPH
	TRAILING ACACIA CONVOLVULUS CNEORUM	1 / MULTI *	1 / 1.0 GPH	1.0 GPH
	BUSH MORNING GLORY EREMOPHILA GLABRA	1 / MULTI *	1 / 1.0 GPH	1.0 GPH
	'MINGENEW GOLD' OUTBACK SUNRISE EMU			
	OENOTHERA BERLANDIERI MEXICAN EVENING PRIMROSE	1 / MULTI *	1 / 1.0 GPH	1.0 GPH
ACCENTS:				
	AGAVE AMERICANA 'VERIGATA'	1 / MULTI *	1 / 1.0 GPH	1.0 GPH
	VARIEGATED CENTURY PLANT AGAVE DESMETTIANA	1 / MULTI *	1 / 1.0 GPH	1.0 GPH
	AGAVE DESMETTIANA SMOOTH AGAVE	1 / MULTI *	1 / 1.0 GPH	1.0 GPH
	HESPERALOE PARVIFLORA 'PERPA'	1 / MULTI *	1 / 1.0 GPH	1.0 GPH
	BRAKELIGHTS RED YUCCA HESPERALOE FUNIFERA	1 / MULTI *	1 / 1.0 GPH	1.0 GPH
	GIANT HESPERALOE MUHLENBERGIA RIGENS	1 / MULTI *	1 / 1.0 GPH	1.0 GPH
	DEERGRASS OPUNTIA ENGELMANNII	1 / MULTI *	1 / 1.0 GPH	1.0 GPH
	ENGELMANN'S PRICKLY PEAR NOLINA MICROCARPA	1 / MULTI *	1 / 1.0 GPH	1.0 GPH
	BEAR GRASS			

* = MULTI PORT EMITTERS SHALL BE SHARED BETWEEN ADJACENT PLANT WITHIN 8'-0"
MAX EMITTER TUBE REACH WITH SAME EMITTER TYPE.
**= 'DEEPROOT' LOCATIONS AS SHOWN ON IRRIGATION PLANS.

EMITTER NOTES:

1. SEE 'EMITTER LEGEND' FOR EMITTER FLOWS & QUANTITIES PER PLANT. SEE EMITTER DETAILS FOR REQUIRED LAYOUT.
2. EMITTER TUBES (DISTRIBUTION TUBING) SHALL BE VINYL MATERIAL SIZED AS REQUIRED TO FIT THE APPROVED EMITTER TYPE AND SHALL NOT EXCEED 5'-0" IN LENGTH. ALL EMITTER TUBES SHALL BE DIRECT BURIED A MINIMUM OF 2" BELOW FINISH GRADE OF SOIL AND SHALL BE VISIBLE AND CUT 1" MINIMUM TO 2" MAXIMUM ABOVE FINISH GRADE OF DECOMPOSED GRANITE, BURYING TUBES BENEATH DECOMPOSED GRANITE ONLY IS NOT PERMITTED.
3. 1/2" SCHEDULE 40 PVC PIPE MAY BE USED AS EMITTER LATERAL PIPES AT A MAXIMUM TOTAL DISTANCE OF 15 LINEAR FEET FROM 3/4" DRIP LATERAL PIPES TO EMITTER LOCATIONS. THIS 1/2" EMITTER LATERAL PIPES ARE NOT SHOWN IN PLANS AND QUANTITIES ARE INCIDENTAL TO 3/4" LATER PIPE QUANTITY.
4. INSTALL MULTI-PORT EMITTERS WITHIN 6" ROUND EMITTER BOX PER DESCRIPTION AND DETAIL.
5. INSTALL FLUSHING END CAPS AT ENDS OF LATERALS AS SHOWN. INSTALL FLUSHING END CAPS IN DG WITH A MINIMUM 10" DIA. CIRCULAR LOCKING VALVE BOX.

COMBINED IRRIGATION QUANTITIES			
DETAIL:	SYMBOL:	DESCRIPTION:	QTYS:
		ISOLATION BALL VALVE	2.5" - 2 EA 2.0" - 1 EA 1.5" - 10 EA 1.25" - 5 EA
		IRRIGATION CONTROLLER: 12 STATION WALL MOUNT 12 STATION PEDESTAL MOUNT 24 STATION PEDESTAL MOUNT	1 EA 6 EA 2 EA
		MASTER VALVE & FLOW METER ASSEMBLY	1" - 7 EA 1.5" - 1 EA 2" - 1 EA
		DRIP REMOTE CONTROL VALVE ASSEMBLY	70 EA
		TURF REMOTE CONTROL VALVE ASSEMBLY	2.0" - 2 EA 1.5" - 8 EA
	NOT SHOWN	MULTI EMITTER ASSEMBLY	3,998 EA
		DEEP ROOT WATERING ASSEMBLY	315 EA
		TURF ROTOR ASSEMBLY	118 EA
		END CAP FLUSH VALVE ASSEMBLY	153 EA
		MAINLINE PIPE- SCH 40	2.5" - 528 LF 2.0" - 701 LF 1.5" - 5,663 LF 1.25" - 3,918 LF
		TURF & DRIP & DEEP ROOT LATERAL PIPE- SCH 40 PVC	2.5" - 12 LF 2.0" - 370 LF 1.5" - 330 LF 1.25" - 1,331 LF 1.0" - 1,850 LF 0.75" - 89,677 LF
		PIPE SLEEVE (PS)	6"PS= 65 LF 4"PS= 96 LF 3"PS= 117 LF 2"PS= 25 LF

NOTE:
ALL QUANTITIES PROVIDED ARE INCLUSIVE OF BASE BID,
ALTERNATE NO. 1 & ALTERNATE NO. 2.

BASELINE'S EXTENDED 10 YEAR EQUIPMENT WARRANTY: A 10 YEAR BASELINE SYSTEM CERTIFICATION MUST BE PERFORMED BY A BASELINE AUTHORIZED DISTRIBUTOR OF EACH INDIVIDUAL SYSTEM ONCE INSTALLATION IS COMPLETED. UPON COMPLETION OF TESTING, IF SYSTEM DOES NOT MEET THE CRITERIA THE CONTRACTOR IS RESPONSIBLE TO MAKE APPROPRIATE CHANGES NEEDED IN ORDER TO PASS THE 10-YEAR WARRANTY REQUIREMENTS.

- TO APPLY FOR BASELINE'S EXTENDED 10 YEAR EQUIPMENT WARRANTY, CONTRACTOR MUST COMPLETE AND SIGN THE 10 YEAR EQUIPMENT WARRANTY APPLICATION AND SUBMIT IT TO BASELINE WITH 30 DAYS OF INSTALLING THE BASELINE CONTROLLER.

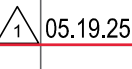
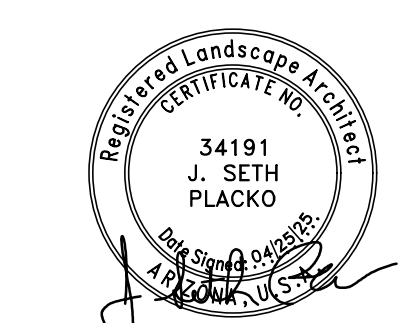


CONSULTANT(S):

CLIENT:



CITY OF CHANDLER
TURF TO XERISCAPE PROGRAM
PHASE I
GENERAL CONSTRUCTION NOTES
AND SHEET INDEX

	05.19.25	ADDENDUM 1
#	DATE	DESCRIPTION
REVISIONS		
		
DESIGNED BY: AL KZ	DRAWN BY: J2	
CHECKED BY: SP/JV	APPROVED BY: JV	
SCALE: NTS	DATE: 04/22/25	
DRAWING NO.: GN-1.04	SHEET NO.: 5	OF 66

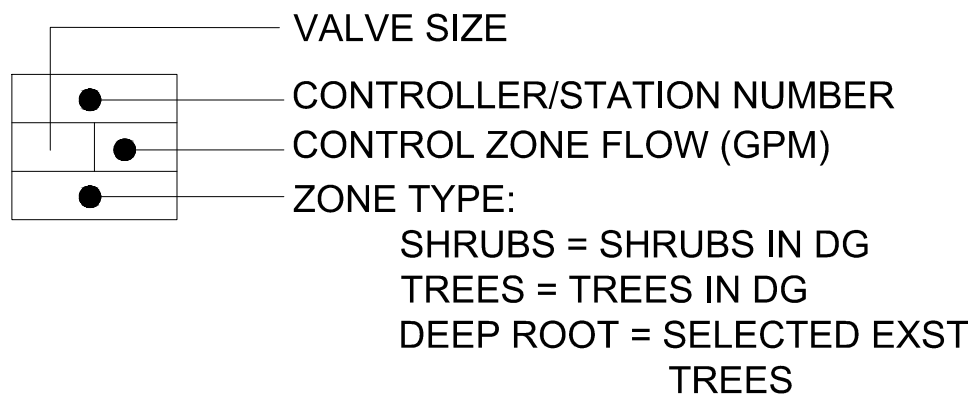
Landscape Legend - Area 107					
Trees / Palms					
Symbol	Botanical / Common Name	Size	Qty.	Remarks	
	Acacia aneura Mulga	24" Box	28	24": Standard H 6'-7' W 2'-3" Cal. 0.75" -1.25"	
	Eucalyptus papuana Ghost Gum Eucalyptus	15 Gal.	4	15 Gal. Standard H 6'-7' W 2'-3" Cal. 0.5"-1.0"	
		24" Box	5	24": Standard H 7'-9" W 3'-4" Cal. 1.25"-1.5"	
	Parkinsonia Florida Blue Palo Verde	24" Box	11	24": Multi H 5'-8" W 3'-4" 36": Multi H 8'-10" W 5'-7"	
	Pistacia 'Red Push' Red Push Pistache	24" Box	11	24": Standard H 7'-9" W 2.5'-3.5" Cal. 1.0"-1.5"	
		36" Box	18	36": Standard H 12'-14" W 6'-8" Cal. 3'-4"	
	Existing Palm Protect In Place	Varies	3	Varies	
	Existing Tree Protect In Place	Varies	12	Varies	
Shrubs					
Symbol	Botanical / Common Name	Size	Qty.	Remarks	
	Calliandra californica Red Fairy Duster	5 Gallon	35	Full Past Can	
	Caesalpinia pulcherrima Red Bird of Paradise	5 Gallon	51	Full Past Can	
	Simmondsia chinensis Jojoba	5 Gallon	34	Full Past Can	
	Buddleja marrubifolia Woolly Butterfly Bush	5 Gallon	24	Full Past Can	
	Ruellia peninsularis Desert Ruellia	5 Gallon	42	Full Past Can	
	Senna artemisioides Feathery Senna	5 Gallon	37	Full Past Can	
	Tecoma x 'Orange Jubilee' Orange Jubilee	5 Gallon	62	Full Past Can	
Groundcovers					
Symbol	Botanical / Common Name	Size	Qty.	Remarks	
	Acacia redolens 'Low Boy' Trailing Acacia	5 Gallon	86	Full Past Can	
	Convolvulus cneorum Bush Morning Glory	5 Gallon	37	Full Past Can	
	Eremophila glabra 'Mingenew Gold' Outback Sunrise Emu	5 Gallon	49	Full Past Can	
Accents					
Symbol	Botanical / Common Name	Size	Qty.	Remarks	
	Agave americana 'Variegata' Variegated Century Plant	5 Gallon	34	Full Past Can	
	Hesperaloe parviflora 'Yellow' Yellow Yucca	5 Gallon	32	Full Past Can	
	Hesperaloe funifera Giant Hesperaloe	5 Gallon	12	Full Past Can	
	Muhlenbergia rigens Deer Grass	5 Gallon	51	Full Past Can	
	Nolina microcarpa Bear Grass	5 Gallon	24	Full Past Can	
	Opuntia engelmannii Engelmann's Prickly Pear	5 Gallon	24	Full Past Can	

SURFACE MATERIALS LEGEND AREA 107			
SYMBOL	DESCRIPTION	COLOR	QUANTITY
	Decomposed Granite	Desert Gold or Approved Equal, 1 1/4" Screened MIN., 2 1/2" Depth	114,062 SF
	Riprap	Desert Gold or Approved Equal, 3" - 6", 6" Depth	285 SF

DEMOLITION KEY NOTES - AREA 107		
1	REMOVE CONCRETE HEADER (1,200LF.)	----
2	REMOVE & DISPOSE OF TURF (104,741 SF.)	
3	REMOVE DG (9,179 SF.)	
7	REMOVE IRRIGATION CONTROLLER (1 EA)	

IRRIGATION LEGEND				
DETAIL:	SYMBOL:	DESCRIPTION:	REMARKS:	QTYS:
		EXISTING WATER METER	PROTECT IN PLACE	N/A
		EXISTING REDUCED PRESSURE BACKFLOW PREVENTION ASSEMBLY	PROTECT IN PLACE	N/A
		EXISTING ELECTRIC METER	PROTECT IN PLACE	N/A
		IRRIGATION CONTROLLER '107'	BASELINE #BL-3200X-R12-CM 12 STATION CONVENTIONALLY WIRED CONTROLLER WITH 16-GAUGE POWDERCOATED STEEL WALL MOUNT ENCLOSURE WITH #BL-CLOUD-LTE-ESIM MODEM, OMNI DIRECTIONAL ANTENNA KIT #BL-CM-OMNI WITH 50' ANTENNA CABLE #BL-CX-CBL50 AND IN-LINE SURGE ARRESTOR #BL-CX-LA-X; INCLUDE BASEMANAGER PLUS 10 YEAR SERVICE #BL-BMW2-PLUS-10Y WITH POST CONSTRUCTION EQUIPMENT SURVEY BY CONTRACTOR; GROUND CONTROLLER WITH POWER SUPPLY GROUND; CELLULAR SITE SURVEY SHALL DETERMINE CELL PROVIDER, CELL ANTENNA TYPE, AND CONFIRM ANTENNA LOCATION.	1 EA
		MASTER VALVE & FLOW METER ASSEMBLY	MASTER VALVE: 1.0" HUNTER IVC-101G GLASS-FILLED NYLON VALVE WITH SCURBBER & FLOW CONTROL (NORMALLY CLOSED); TWO SCH 80 PVC UNIONS SIZED TO MATCH; CHRISTY'S YELLOW MAXI SIZE WIRE ID TAG; CARSON JUMBO TAN COLOR RECTANGULAR VALVE BOX #1220-12; CONVENTIONAL WIRES TO CONTROLLER SHALL BE #14 AWG BLUE CONTROL, WHITE COMMON, & ONE GRAY SPARE TO MV & FS. FLOW METER: CST FSI-T10-001 1.0" PVC TEE-STYLE FLOW METER, CHRISTY'S YELLOW MAXI SIZE WIRE ID TAG; IN CARSON TAN COLOR 10" ROUND VALVE BOX #910-12; ROUTE WIRES TO CONTROLLER ENTIRELY WITHIN 1.25" SCH 40 PVC CONDUIT.	1" - 1 EA
		ISOLATION BALL VALVE	SPEARS SCH 80 PVC BALL VALVES WITH FULL PORT TRUE UNION; INSTALL IN CARSON #1220 JUMBO TAN VALVE BOX WITH BOLT DOWN T-COVER EMBOSSED WITH 2" STENCIL LETTERS PER VALVE BOX INSTALLATION DETAIL. SIZE TO MATCH PIPE SIZE.	1.25" - 1 EA
		DRIP REMOTE CONTROL VALVE ASSEMBLY	HUNTER DRIP KIT #ICZ-101-LF, 1" GLOBE VALVE, 1" WYE FILTER (150 MESH STAINLESS STEEL SCREEN) AND PRESSURE REGULATOR (25 PSI); 1" SPEARS SCH 80 PVC BALL VALVES WITH FULL PORT TRUE UNION; SCH. 80 PVC NIPPLES & FITTINGS; CHRISTY'S STANDARD YELLOW ID TAG WITH CONTROLLER LETTER & STATION NUMBER (IE: A-1) PRINTED ONE SIDE; INSTALL IN CARSON #1220 TAN JUMBO VALVE BOX WITH BOLT DOWN T-COVER EMBOSSED WITH CONTROLLER LETTER & STATION NUMBER (TO MATCH ID TAG).	4 EA
	NOT SHOWN	MULTI EMITTER ASSEMBLY	BOWSMITH #ML210 1.0 GPH BLUE COLOR AND #ML220 2.0 GPH RED COLOR MULTI-PORT EMITTERS WITH 1/2" FPT INLET; 1/2" SCH 40 FLEX PIPE RISER; 1/4" VINYL DISTRIBUTION TUBES AT 5'-0" MAX. LENGTH; IN 6" NDS TAN COLOR ROUND EMITTER BOX (SEE 'EMITTER NOTE' #4). SEE 'EMITTER SCHEDULE' FOR REQ'D FLOW & QTY. PER PLANT	353 EA
		FLUSH CAP ASSEMBLY	3/4" API PVC BALL VALVE WITH 3/4" SWIVEL FHT INPUT & 3/4" MHT OUTPUT; 3/4" PVC FLEX PIPE RISER WITH TWO 3/4" SCH 40 PVC MALE ADAPTERS; INSTALL IN CARSON #910 10" ROUND VALVE BOX WITH BOLT DOWN T-COVER EMBOSSED WITH 2" STENCIL LETTERS PER VALVE BOX INSTALLATION DETAIL IN THIS SET. (TWO END CAPS MAX. MAY BE INSTALLED WITHIN SAME VALVE BOX IF LOCATED IN SAME VICINITY)	12 EA
		MAINLINE PIPE	SCH 40 PVC PIPE WITH SCH 80 SOLVENT WELD FITTINGS, SIZE PER PLAN	1.25" - 923 LF
		DRIP LATERAL PIPE	1" SCHEDULE 40 PVC SOLVENT WELD PIPE WITH SCHEDULE 40 FITTINGS	21 LF
		DRIP LATERAL PIPE- SHRUBS	3/4" SCHEDULE 40 PVC SOLVENT WELD PIPE WITH SCHEDULE 40 FITTINGS	4,933 LF
		DRIP LATERAL PIPE- TREES	3/4" SCHEDULE 40 PVC SOLVENT WELD PIPE WITH SCHEDULE 40 FITTINGS	2,582 LF
		PIPE SLEEVE (PS)	SCHEDULE 40 PVC PIPE (WHITE); INSTALL SLEEVES AT DEEPEST PIPE DEPTH WITHIN SLEEVE OR 24" MIN. COVER UNDER DRIVING SURFACES; ANY SLEEVES NOTED FOR BORING IS CONSIDERED INCIDENTAL TO SLEEVE COST	6"PS= 10 LF

VALVE KEY:



PLANT INVENTORY								
Plant #	Species	Common Name	Caliper (in)	Width (in)	Height (in)	Inventory Designation	Action Designation	Comments
22	Searsia lancea	African Sumac	10	12	15	NS	PIP	
23	Searsia lancea	African Sumac	12	15	18	NS	PIP	
24	Searsia lancea	African Sumac	8	12	15	NS	PIP	Leaning.
25	Searsia lancea	African Sumac	8	15	12	NS	PIP	Leaning. Poor form.
26	Searsia lancea	African Sumac	6	10	12	NS	PIP	Twisted branches.
27	Searsia lancea	African Sumac	20	20	20	NS	PIP	Branch loss, canopy sparse, in decline.
28	Searsia lancea	African Sumac	18	15	15	NS	D	
29	Searsia lancea	African Sumac	8	12	15	NS	PIP	
30	Searsia lancea	African Sumac	18	15	15	NS	D	Twisted branches.
31	Searsia lancea	African Sumac	10	12	15	NS	D	Canopy loss, dead branches.
32	Searsia lancea	African Sumac	20	25	20	NS	D	Leaning and possibly uprooting.
33	Searsia lancea	African Sumac	20	30	25	NS	PIP	Leaning but attractive.
34	Searsia lancea	African Sumac	6	10	12	NS	PIP	Boulders at base of tree for support.
35	Eucalyptus spp.	Eucalyptus Variety	30	45	60	NS	PIP	
36	Eucalyptus spp.	Eucalyptus Variety	24	40	60	NS	PIP	
37	Eucalyptus spp.	Eucalyptus Variety	18	25	55	NS	PIP	
38	Washingtonia robusta	Mexican Fan Palm	20	12	45	NS	PIP	
39	Washingtonia robusta	Mexican Fan Palm	20	12	45	NS	PIP	
40	Washingtonia robusta	Mexican Fan Palm	20	12	40	NS	PIP	

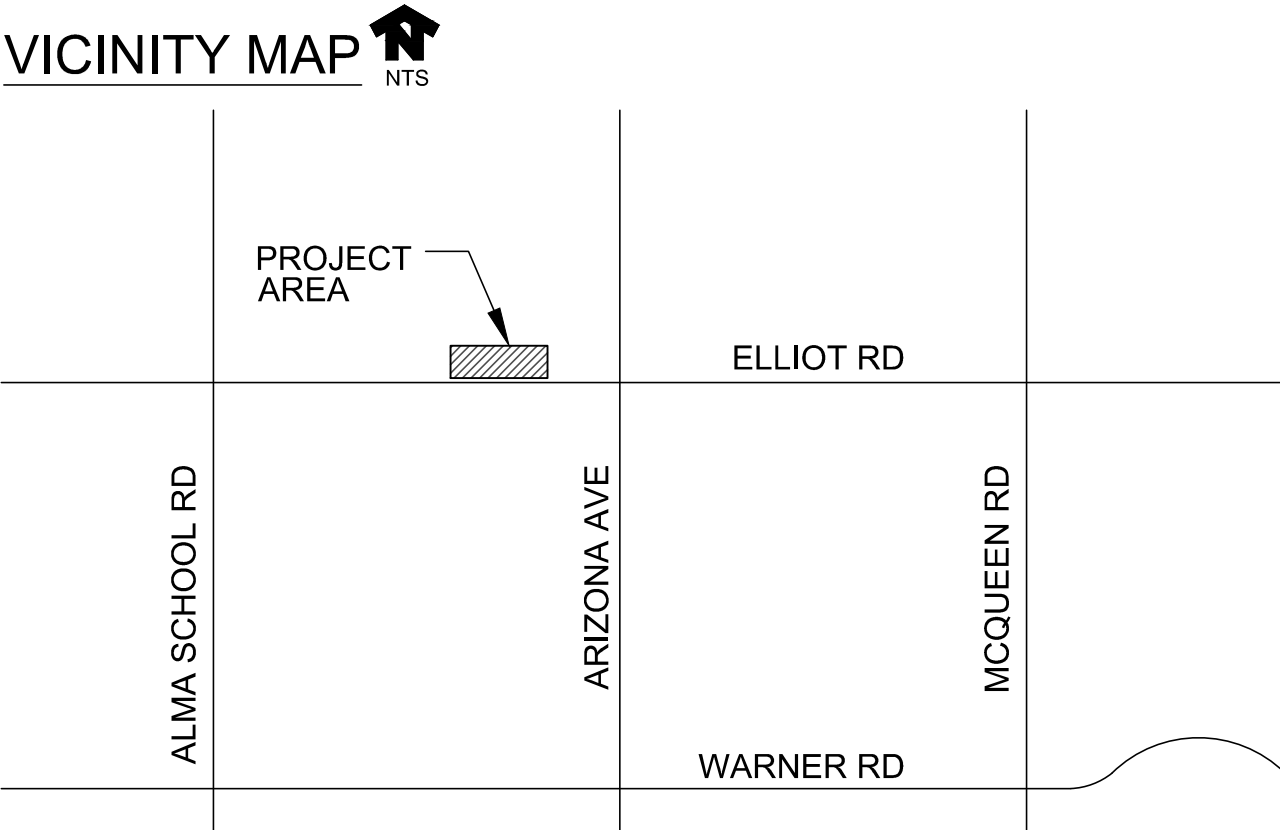
INVENTORY DESIGNATION LEGEND	
S	= Salvageable
NS	= Non-Salvageable
INTENDED DESIGNATION LEGEND	
S	= Salvage and Relocate
D	= Destroy, Not Salvageable & Cannot Remain in Place
PIP	= Preserve and Protect In Place

PROTECTION FENCING LEGEND:		
SYMBOL	DESCRIPTION	QTY
	TREE PROTECTION FENCING FOR EXISTING TREES. REFER TO DETAILS 1-2, SHEET LD-1.02	930 LF

PLANT INVENTORY QUANTITY:		
	Tree	Palm
Salvage and Relocate	0	0
Destroy and Remove	4	0
Protect In Place	12	3
Total		19

A107 SHEET INDEX:

A107-1.01	AREA 107 - LEGENDS & QUANTITY
A107-2.01	AREA 107 - DEMOLITION AND PLANT INVENTORY PLAN
A107-3.01	AREA 107 - LANDSCAPE PLAN
A107-3.02	AREA 107 - LANDSCAPE PLAN
A107-4.01	AREA 107 - IRRIGATION PLAN
A107-4.02	AREA 107 - IRRIGATION PLAN



4649 E COTTON GIN LOOP B2
PHOENIX, AZ 85040
602.438.2221

CONSULTANT(S):

CLIENT:



CITY OF CHANDLER
TURF TO XERISCAPE PROGRAM
PHASE I
AREA 107 LEGENDS & QUANTITY

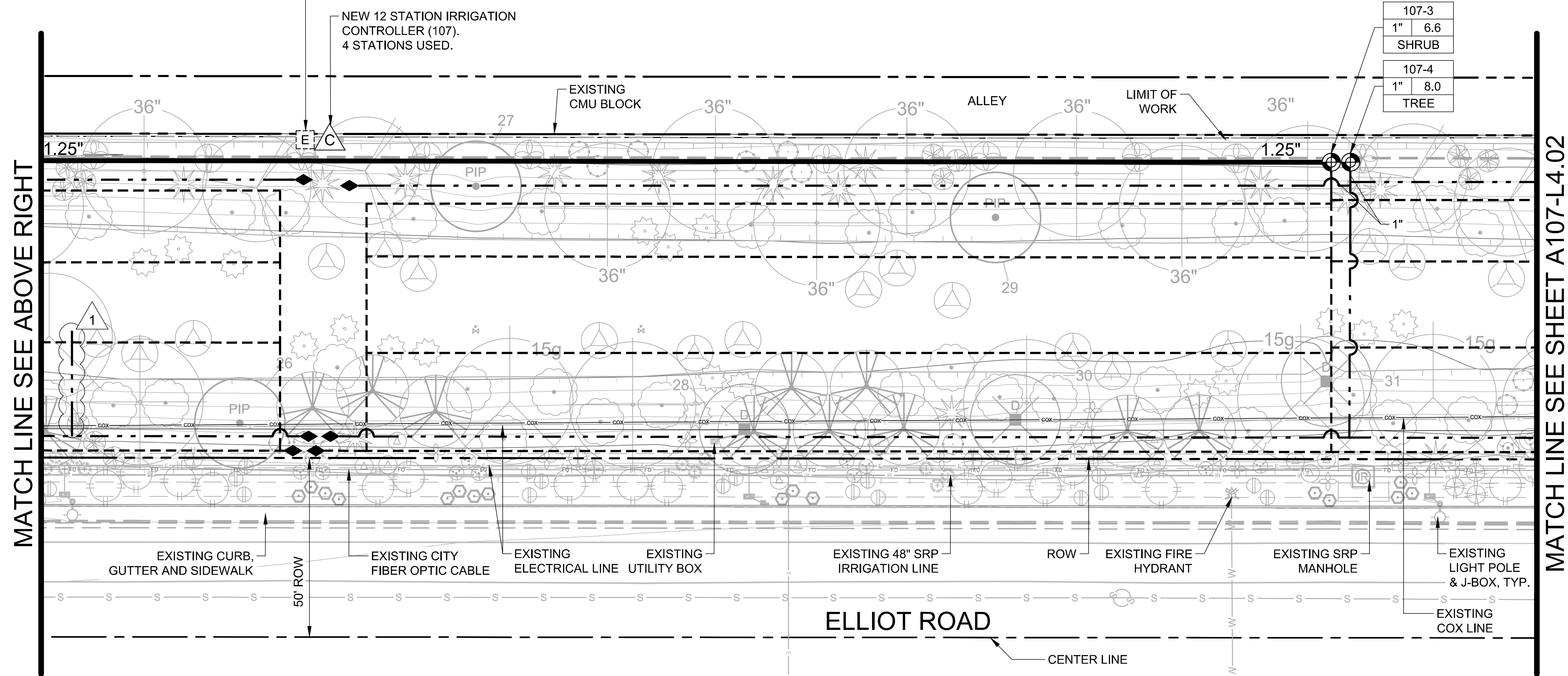
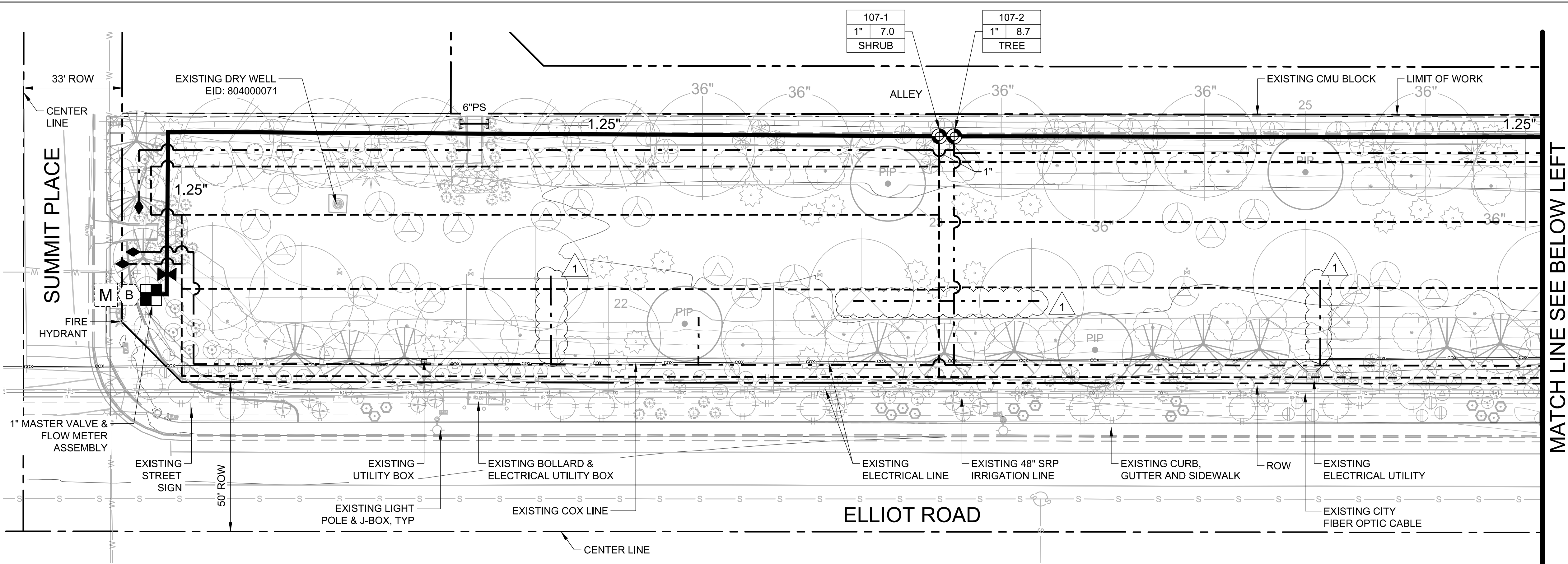
05.19.25 ADDENDUM 1

#	DATE	DESCRIPTION
REVISIONS		



DESIGNED BY: AL KZ	DRAWN BY: J2
CHECKED BY: SP/JV	APPROVED BY: JV
SCALE: NTS	DATE: 04/22/25
DRAWING NO.: A107-1.01	SHEET NO.: 6 OF 66

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IRRIGATION LEGEND	
SYMBOL:	DESCRIPTION:
	EXISTING WATER METER
	EXISTING REDUCED PRESSURE BACKFLOW PREVENTION ASSEMBLY
	EXISTING ELECTRIC METER
	IRRIGATION CONTROLLER
	MASTER VALVE & FLOW METER ASSEMBLY
	ISOLATION BALL VALVE
	DRIP REMOTE CONTROL VALVE ASSEMBLY
	MULTI EMITTER ASSEMBLY
	FLUSH CAP ASSEMBLY
	DEEP ROOT WATERING ASSEMBLY
	MAINLINE PIPE
	DRIP LATERAL PIPE
	DRIP LATERAL PIPE- SHRUBS
	DRIP LATERAL PIPE- TREES
	DRIP LATERAL PIPE- DEEP ROOT TREES
	PIPE SLEEVE (PS)

VALVE KEY:	
	VALVE SIZE
	CONTROLLER/STATION NUMBER
	CONTROL ZONE FLOW (GPM)
	ZONE TYPE:
SHRUB = SHRUBS IN DG TREE = TREES IN DG	

EXISTING UTILITIES KEY:	
SYMBOL/ LINETYPE	DESCRIPTION
	WATER
	SEWER
	ELECTRICAL
	OVERHEAD ELECTRICAL
	IRRIGATION
	GAS
	TELECO
	FIBER OPTIC CABLE
	CITY FIBER OPTIC CABLE
	COX
	LIGHT POLE
	J-BOX

- NOTE:
- ALL EXISTING UTILITIES, LIGHT POLES, J-BOX & SIGNS ARE TO BE PROTECTED IN PLANS AND CONTRACTOR TO VERIFY LOCATION WITH BLUE STAKE.
 - LIGHTS BURIED DIRECTLY IN THE BASINS WILL BE REPLACED WITH NEW FOUNDATION AND LIGHT POLE WITH LED LIGHT IN THE FUTURE BY OTHERS. CONTRACTOR TO VERIFY, LOCATE AND PROTECT IN PLACE THE CITY OF CHANDLER FIBER OPTIC CABLE LINE & CONDUIT LOCATION.



4649 E COTTON GIN LOOP B2
PHOENIX, AZ 85040
602.438.2221

CONSULTANT(S):

CLIENT:

CITY OF CHANDLER

TURF TO XERISCAPE PROGRAM

PHASE I

AREA 107 - IRRIGATION PLANS

DESIGNED BY: AL, KZ
CHECKED BY: SP/JV
SCALE: SEE PLAN
DRAWING NO.: A107-4.01

DRAWN BY: J2
APPROVED BY: JV
DATE: 04/22/25
SHEET NO.: 10 OF 66

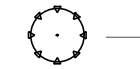
05.19.25 ADDENDUM 1

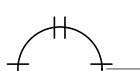
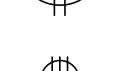
#	DATE	DESCRIPTION
REVISIONS		

PROJECT # ST2405.401; CIV24-0141; LJ106680

Landscape Legend - Area 108

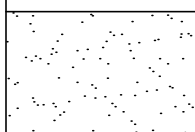
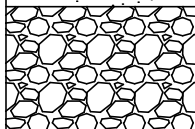
Trees / Palms				
Symbol	Botanical / Common Name	Size	Qty.	Remarks
	Acacia salicina Willow Acacia	24" Box 36" Box	28 2	24": Standard H 7'-8' W 2.5'-3.5' Cal. 1.25"-1.5"
	Chilopsis linearis spp Desert Willow	15 Gal. 24" Box	4 23	15 Gal.: Multi H 4'-5' W 2'-3" 24": Multi H 5'-7' W 3'-4"
	Olea europaea 'Wilsoni' Wilson's Fruitless Olive	36" Box	12	36": Multi H 8'-10' W 5'-7"
	Quercus Virginiana 'Heritage' Southern Live Oak	24" Box	14	24": Standard H 7'-8' W 3'-4' Cal. 1.0"-1.5"
	Existing Tree Protect In Place	Varies	36	Varies

Shrubs				
Symbol	Botanical / Common Name	Size	Qty.	Remarks
	Calliandra californica Red Fairy Duster	5 Gallon	19	Full Past Can
	Caesalpinia pulcherrima Red Bird of Paradise	5 Gallon	77	Full Past Can
	Simmondsia chinensis Jojoba	5 Gallon	52	Full Past Can
	Senna artemisioides Feathery Senna	5 Gallon	18	Full Past Can
	Tecoma x 'Orange Jubilee' Orange Jubilee	5 Gallon	90	Full Past Can

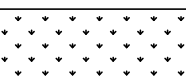
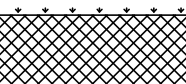
Groundcovers				
Symbol	Botanical / Common Name	Size	Qty.	Remarks
	Acacia redolens 'Low Boy' Trailing Acacia	5 Gallon	98	Full Past Can
	Convolvulus cneorum Bush Morning Glory	5 Gallon	59	Full Past Can
	Eremophila glabra 'Mingnew Gold' Outback Sunrise Emu	5 Gallon	34	Full Past Can
	Oenothera berlandieri Mexican Evening Primrose	5 Gallon	73	Full Past Can

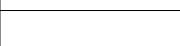
Accents				
Symbol	Botanical / Common Name	Size	Qty.	Remarks
	Agave americana 'Variegata' Variegated Century Plant	5 Gallon	50	Full Past Can
	Hesperaloe parviflora 'Yellow' Yellow Yucca	5 Gallon	61	Full Past Can
	Hesperaloe funifera Giant Hesperaloe	5 Gallon	31	Full Past Can
	Muhlenbergia rigens Deer Grass	5 Gallon	154	Full Past Can
	Nolina microcarpa Bear Grass	5 Gallon	84	Full Past Can

SURFACE MATERIALS LEGEND
AREA 108

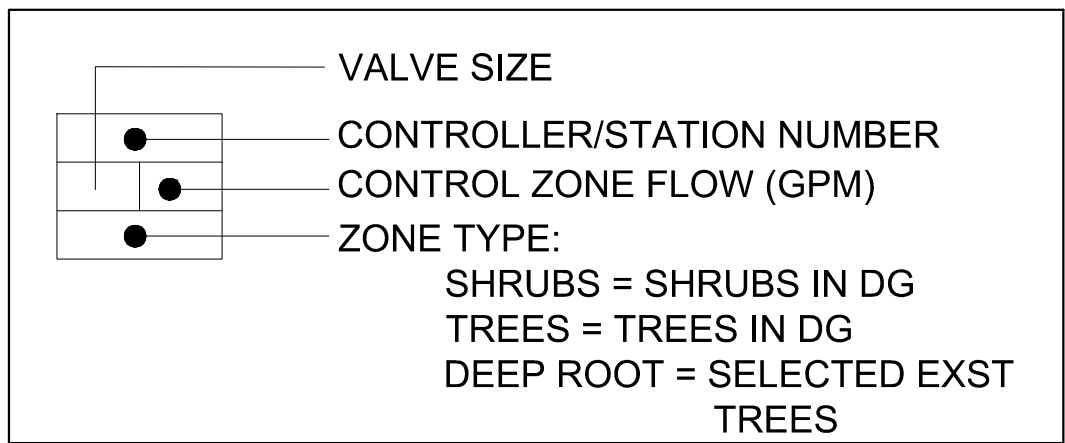
SYMBOL	DESCRIPTION	COLOR	QUANTITY
	Decomposed Granite	Desert Gold or Approved Equal, 1 1/4" Screened MIN., 2 1/2" Depth	165,492 SF
	Riprap	Desert Gold or Approved Equal, 3" - 6", 6" Depth	1,094 SF

DEMOLITION KEY NOTES - AREA 108

1	REMOVE CONCRETE HEADER (1,372 LF.)	----
2	REMOVE & DISPOSE TURF (156,979 SQ. FT.)	
3	REMOVE DG (10,818 SQ. FT.)	
7	REMOVE IRRIGATION CONTROLLER (1EA)	

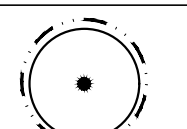
IRRIGATION LEGEND				
DETAIL:	SYMBOL:	DESCRIPTION:	REMARKS:	QTY:
		EXISTING WATER METER	PROTECT IN PLACE	N/A
		EXISTING REDUCED PRESSURE BACKFLOW PREVENTION ASSEMBLY	PROTECT IN PLACE	N/A
3 & 5 ID.03		IRRIGATION CONTROLLER '108'	BASELINE #BL-3200P-R12-CM 12 STATION CONVENTIONALLY WIRED CONTROLLER WITH 16-GAUGE POWDERCOATED STEEL PEDESTAL MOUNT ENCLOSURE WITH #BL-CLOUD-LTE-ESIM MODEM, OMNI DIRECTIONAL ANTENNA KIT #BL-CM-OMNI WITH 50' ANTENNA CABLE #BL-CX-CBL50 AND IN-LINE SURGE ARRESTOR #BL-CX-LA-X; INCLUDE BASEMANAGER PLUS 10 YEAR SERVICE #BL-BMW2-PLUS-10Y WITH POST CONSTRUCTION EQUIPMENT SURVEY BY CONTRACTOR; GROUND CONTROLLER WITH POWER SUPPLY GROUND; CELLULAR SITE SURVEY SHALL DETERMINE CELL PROVIDER, CELL ANTENNA TYPE, AND CONFIRM ANTENNA LOCATION.	1 EA
6 ID.03		MASTER VALVE & FLOW METER ASSEMBLY	MASTER VALVE: 1.0" HUNTER IVC-101G GLASS-FILLED NYLON VALVE WITH SCURBBER & FLOW CONTROL (NORMALLY CLOSED); TWO SCH 80 PVC UNIONS SIZED TO MATCH; CHRISTY'S YELLOW MAXI SIZE WIRE ID TAG; CARSON JUMBO TAN COLOR RECTANGULAR VALVE BOX #1220-12; CONVENTIONAL WIRES TO CONTROLLER SHALL BE #14 AWG BLUE CONTROL, WHITE COMMON, & ONE GRAY SPARE TO MV & FS. FLOW METER: CST FSI-T10-001 1.0" PVC TEE-STYLE FLOW METER, CHRISTY'S YELLOW MAXI SIZE WIRE ID TAG; IN CARSON TAN COLOR 10" ROUND VALVE BOX #910-12; ROUTE WIRES TO CONTROLLER ENTIRELY WITHIN 1.25" SCH 40 PVC CONDUIT.	1" - 1 EA
1 ID.01		ISOLATION BALL VALVE	SPEARS SCH 80 PVC BALL VALVE WITH FULL PORT TRUE UNION; INSTALL IN CARSON #1220 JUMBO TAN VALVE BOX WITH BOLT DOWN T-COVER EMBOSSED WITH 2" STENCIL LETTERS PER VALVE BOX INSTALLATION DETAIL. SIZE TO MATCH PIPE SIZE.	1.5" - 2 EA
1 ID.02		DRIP REMOTE CONTROL VALVE ASSEMBLY	HUNTER DRIP KIT #ICZ-101-LF, 1" GLOBE VALVE, 1" WYE FILTER (150 MESH STAINLESS STEEL SCREEN) AND PRESSURE REGULATOR (25 PSI); 1" SPEARS SCH 80 PVC BALL VALVE WITH FULL PORT TRUE UNION; SCH. 80 PVC NIPPLES & FITTINGS; CHRISTY'S STANDARD YELLOW ID TAG WITH CONTROLLER LETTER & STATION NUMBER (IE. A-1) PRINTED ONE SIDE; INSTALL IN CARSON #1220 TAN JUMBO VALVE BOX WITH BOLT DOWN T-COVER EMBOSSED WITH CONTROLLER LETTER & STATION NUMBER (TO MATCH ID TAG);	9 EA
3 ID.02	NOT SHOWN	MULTI EMITTER ASSEMBLY	BOWSMITH #ML210 1.0 GPH BLUE COLOR AND #ML220 2.0 GPH RED COLOR MULTI-PORT EMITTERS WITH 1/2" FPT INLET; 1/2" SCH 40 FLEX PIPE RISER; 1/4" VINYL DISTRIBUTION TUBES AT 5'-0" MAX. LENGTH; IN 6" NDS TAN COLOR ROUND EMITTER BOX (SEE 'EMITTER NOTE' #4). SEE 'EMITTER SCHEDULE' FOR REQ'D FLOW & QTY. PER PLANT	515 EA
1&2 ID.03		DEEP ROOT WATERING ASSEMBLY	HUNTER #RZWS-36-50-CV 36" DEPTH ROOT ZONE WATERING SYSTEM WITH 0.25 GPM BUBBLER AND FACTORY INSTALLED CHECK VALVE; INCLUDE OPTIONAL FIELD INSTALLED FILTER FABRIC SLEEVE #RZWS-SLEEVE.	78 EA
4 ID.01		FLUSH CAP ASSEMBLY	3/4" API PVC BALL VALVE WITH 3/4" SWIVEL FHT INPUT & 3/4" MHT OUTPUT; 3/4" PVC FLEX PIPE RISER WITH TWO 3/4" SCH 40 PVC MALE ADAPTERS; INSTALL IN CARSON #910 10" ROUND VALVE BOX WITH BOLT DOWN T-COVER EMBOSSED WITH 2" STENCIL LETTERS PER VALVE BOX INSTALLATION DETAIL IN THIS SET. (TWO END CAPS MAX. MAY BE INSTALLED WITHIN SAME VALVE BOX IF LOCATED IN SAME VICINITY)	13 EA
4 ID.02		MAINLINE PIPE	SCH 40 PVC PIPE WITH SCH 80 SOLVENT WELD FITTINGS, SIZE PER PLAN	1.5" - 1,149 LF
		DRIP LATERAL PIPE	1" SCHEDULE 40 PVC SOLVENT WELD PIPE WITH SCHEDULE 40 FITTINGS	36 LF
		DRIP LATERAL PIPE- SHRUBS	3/4" SCHEDULE 40 PVC SOLVENT WELD PIPE WITH SCHEDULE 40 FITTINGS	5,988 LF
		DRIP LATERAL PIPE- TREES	3/4" SCHEDULE 40 PVC SOLVENT WELD PIPE WITH SCHEDULE 40 FITTINGS	2,870 LF
		DEEP ROOT LATERAL PIPE	3/4" SCHEDULE 40 PVC SOLVENT WELD PIPE WITH SCHEDULE 40 FITTINGS	2,427 LF
7 ID.01		PIPE SLEEVE (PS)	SCHEDULE 40 PVC PIPE (WHITE); INSTALL SLEEVES AT DEEPEST PIPE DEPTH WITHIN SLEEVE OR 24" MIN. COVER UNDER DRIVING SURFACES; ANY SLEEVES NOTED FOR BORING IS CONSIDERED INCIDENTAL TO SLEEVE COST	3"PS= 30 LF

VALVE KEY:



PLANT INVENTORY								
Plant #	Species	Common Name	Caliper (in)	Width (in)	Height (in)	Inventory Designation	Action Designation	Comments
41	Pinus spp.	Pine Variety	24	40	50	NS	PIP	
42	Pinus spp.	Pine Variety	30	40	30	NS	PIP	
43	Pinus spp.	Pine Variety	16	25	30	NS	PIP	
44	Pinus spp.	Pine Variety	14	11	35	NS	PIP	
45	Pinus spp.	Pine Variety	11	18	23	NS	PIP	
46	Pinus spp.	Pine Variety	12	15	50	NS	PIP	
47	Pinus spp.	Pine Variety	10	20	25	NS	PIP	
48	Pinus spp.	Pine Variety	30	40	40	NS	PIP	
49	Pinus spp.	Pine Variety	10	15	20	NS	D	
50	Pinus spp.	Pine Variety	24	40	45	NS	PIP	
51	Pinus spp.	Pine Variety	10	15	15	S	PIP	
52	Pinus spp.	Pine Variety	20	20	35	NS	PIP	
53	Pinus spp.	Pine Variety	20	35	50	NS	PIP	
54	Pinus spp.	Pine Variety	30	35	40	NS	PIP	
55	Pinus spp.	Pine Variety	25	40	45	NS	PIP	
56	Pinus spp.	Pine Variety	25	35	45	NS	PIP	
57	Pinus spp.	Pine Variety	25	35	45	NS	PIP	
58	Pinus spp.	Pine Variety	35	35	45	NS	PIP	
59	Pinus spp.	Pine Variety	30	35	50	NS	PIP	
60	Pinus spp.	Pine Variety	20	24	50	NS	PIP	
61	Pinus spp.	Pine Variety	24	30	50	NS	PIP	
62	Pinus spp.	Pine Variety	27	30	45	NS	PIP	
63	Pinus spp.	Pine Variety	30	40	60	NS	PIP	
64	Pinus spp.	Pine Variety	26	45	55	NS	PIP	
65	Pinus canariensis	Canary Island Pine	24	30	45	NS	PIP	
66	Pinus canariensis	Canary Island Pine	28	25	50	NS	PIP	
67	Pinus canariensis	Canary Island Pine	22	20	40	NS	PIP	
68	Eucalyptus spp.	Eucalyptus Variety	18	35	60	NS	PIP	
69	Eucalyptus spp.	Eucalyptus Variety	48	60	65	NS	PIP	
70	Searsia lancea	African Sumac	9	20	25	NS	PIP	
71	Searsia lancea	African Sumac	15	22	25	NS	PIP	
72	Searsia lancea	African Sumac	15	18	35	NS	PIP	
73	Pinus spp.	Pine Variety	22	30	45	NS	PIP	
74	Pinus spp.	Pine Variety	24	20	40	NS	PIP	
75	Pinus spp.	Pine Variety	30	55	60	NS	PIP	
76	Pinus spp.	Pine Variety	20	20	25	NS	PIP	
77	Pinus spp.	Pine Variety	22	30	45	NS	PIP	

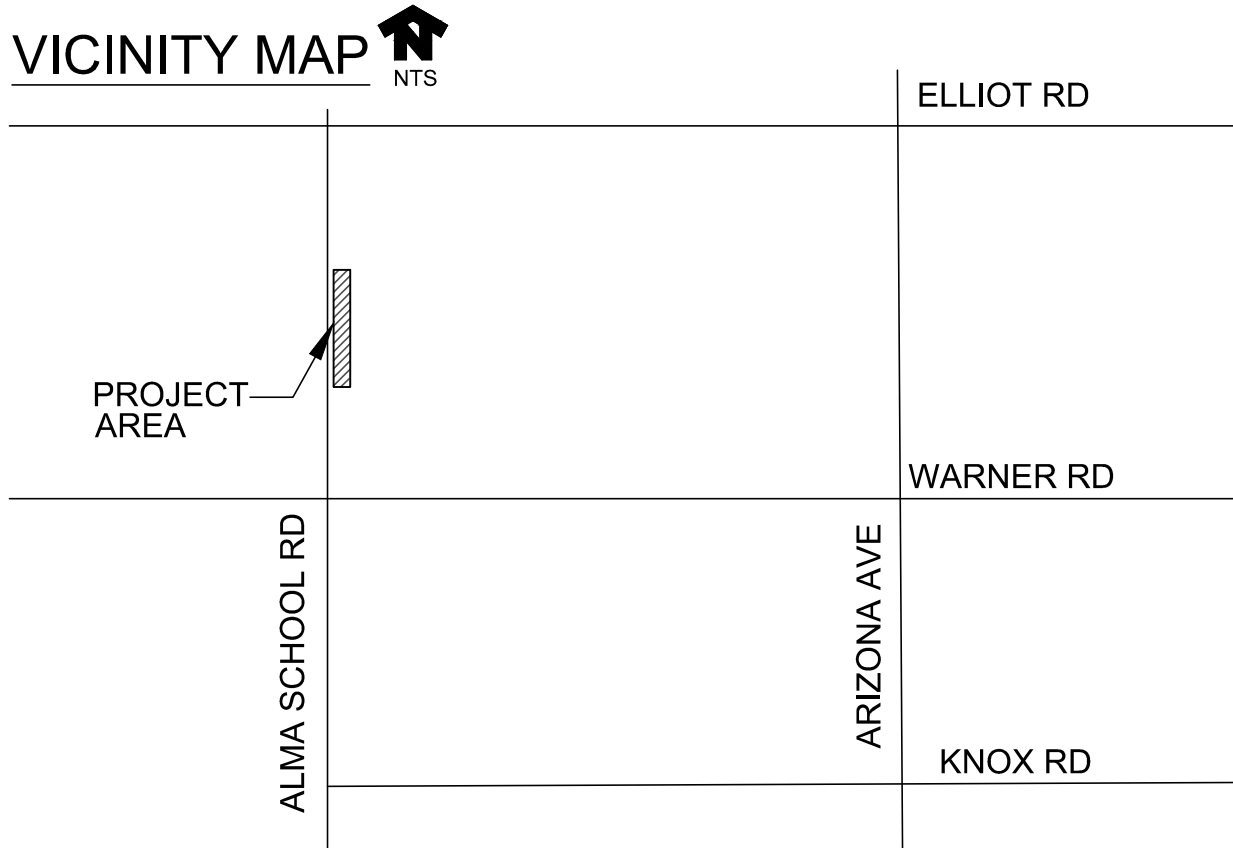
INVENTORY DESIGNATION LEGEND		
S	= Salvageable	
NS	= Non-Salvageable	
INTENDED DESIGNATION LEGEND		
S	= Salvage and Relocate	
D	= Destroy, Not Salvageable & Cannot Remain in Place	
PIP	= Preserve and Protect In Place	

PROTECTION FENCING LEGEND:		
SYMBOL	DESCRIPTION	QTY
	TREE PROTECTION FENCING FOR EXISTING TREES. REFER TO DETAILS 1-2, SHEET LD-1.02	2,785 LF

PLANT INVENTORY QUANTITY:	
	Tree
Salvage and Relocate	0
Destroy and Remove	1
Protect In Place	36
Total	37

AREA 108 SHEET INDEX:

A108-1.01	AREA 108 - LEGENDS & QUANTITY
A108-2.01	AREA 108 - DEMOLITION AND PLANT INVENTORY PLAN
A108-3.01	AREA 108 - LANDSCAPE PLAN
A108-3.02	AREA 108 - LANDSCAPE PLAN
A108-4.01	AREA 108 - IRRIGATION PLAN
A108-4.02	AREA 108 - IRRIGATION PLAN



4649 E COTTON GIN LOOP B2
PHOENIX, AZ 85040
602.438.2221

CONSULTANT(S):

CLIENT:



CITY OF CHANDLER
TURF TO XERISCAPE PROGRAM
PHASE I
AREA 108 LEGENDS AND QUANTITIES

05.19.25 ADDENDUM 1

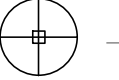
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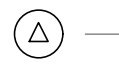
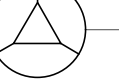
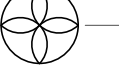
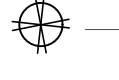
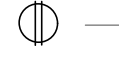
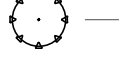


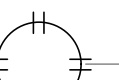
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CHECKED BY: SP/JV	APPROVED BY: JV
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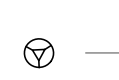
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Landscpe Legend - Area 119

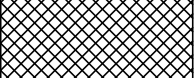
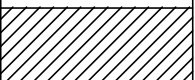
Trees / Palms				
Symbol	Botanical / Common Name	Size	Qty.	Remarks
	Acacia aneura Mulga	24" Box	27	24": Standard H 6'-7" W 2'-3" Cal. 0.75" -1.25"
	Acacia salicina Willow Acacia	24" Box 36" Box	24 2	24": Standard H 7'-8" W 2.5'-3.5" Cal. 1.25"-1.5" 36": Standard H 9'-11" W 5'-7" Cal. 2.0"-2.5"
	Chitalpa tashkentensis Chitalpa	24" Box	23	24": Standard H 6'-7" W 3'-4" Cal. 1.0"-1.5"
	Chilopsis linearis spp. Desert Willow	15 Gal. 24" Box	7 32	15": Multi H 4'-5" W 2'-3" 24": Multi H 5'-7" W 3'-4"
	Parkinsonia Florida Blue Palo Verde	36" Box	34	36": Multi H 8'-10" W 5'-7"
	Existing Tree Protect In Place	Varies	42	Varies

Shrubs				
Symbol	Botanical / Common Name	Size	Qty.	Remarks
	Calliandra californica Red Fairy Duster	5 Gallon	87	Full Past Can
	Caesalpinia pulcherrima Red Bird of Paradise	5 Gallon	139	Full Past Can
	Simmondsia chinensis Jojoba	5 Gallon	53	Full Past Can
	Buddleja marrubifolia Woolly Butterfly Bush	5 Gallon	56	Full Past Can
	Ruella peninsularis Desert Ruella	5 Gallon	78	Full Past Can
	Senna artemisioides Feathery Senna	5 Gallon	59	Full Past Can
	Tecoma x 'Orange Jubilee' Orange Jubilee	5 Gallon	134	Full Past Can

Groundcovers				
Symbol	Botanical / Common Name	Size	Qty.	Remarks
	Acacia redolens 'Low Boy' Trailing Acacia	5 Gallon	99	Full Past Can
	Convolvulus cheorum Bush Morning Glory	5 Gallon	123	Full Past Can
	Eremophila glabra 'Mingenew Gold' Outback Sunrise Emu	5 Gallon	128	Full Past Can

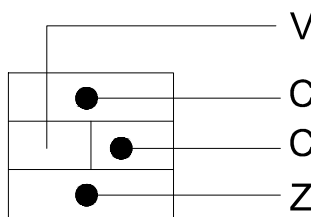
Accents				
Symbol	Botanical / Common Name	Size	Qty.	Remarks
	Agave americana 'Variegata' Variegated Century Plant	5 Gallon	87	Full Past Can
	Hesperaloe funifera Giant Hesperaloe	5 Gallon	13	Full Past Can
	Hesperaloe parviflora 'Perpa' Brakelights Red Yucca	5 Gallon	30	Full Past Can
	Hesperaloe parviflora 'Yellow' Yellow Yucca	5 Gallon	72	Full Past Can
	Muhlenbergia rigens Deer Grass	5 Gallon	142	Full Past Can
	Nolina microcarpa Bear Grass	5 Gallon	103	Full Past Can

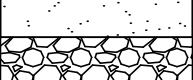
DEMOLITION KEY NOTES - AREA 119

1	REMOVE CONCRETE HEADER (2,305 LF.)	----
2	REMOVE & DISPOSE OF TURF (265,102 SF.)	
3	REMOVE DG (13,404 SF.)	
4	REMOVE WATER METER, SERVICE LINE AND CLOSE CORP STOP AT WATER MAIN (2 EA)	
5	REMOVE BACKFLOW PREVENTER (2 EA)	
6	DISCONNECT & REMOVE IRRIGATION BOOSTER PUMP (1 EA)	
7	REMOVE IRRIGATION CONTROLLER (2 EA)	
8	SAWCUT, REMOVE AND REPLACE EXISTING ASPHALT PER MAG STD DTL 200-1 "T-TOP", TRENCH REPAIR BACKFILL WITH 1/2 SACK CLSM (26 SY)	

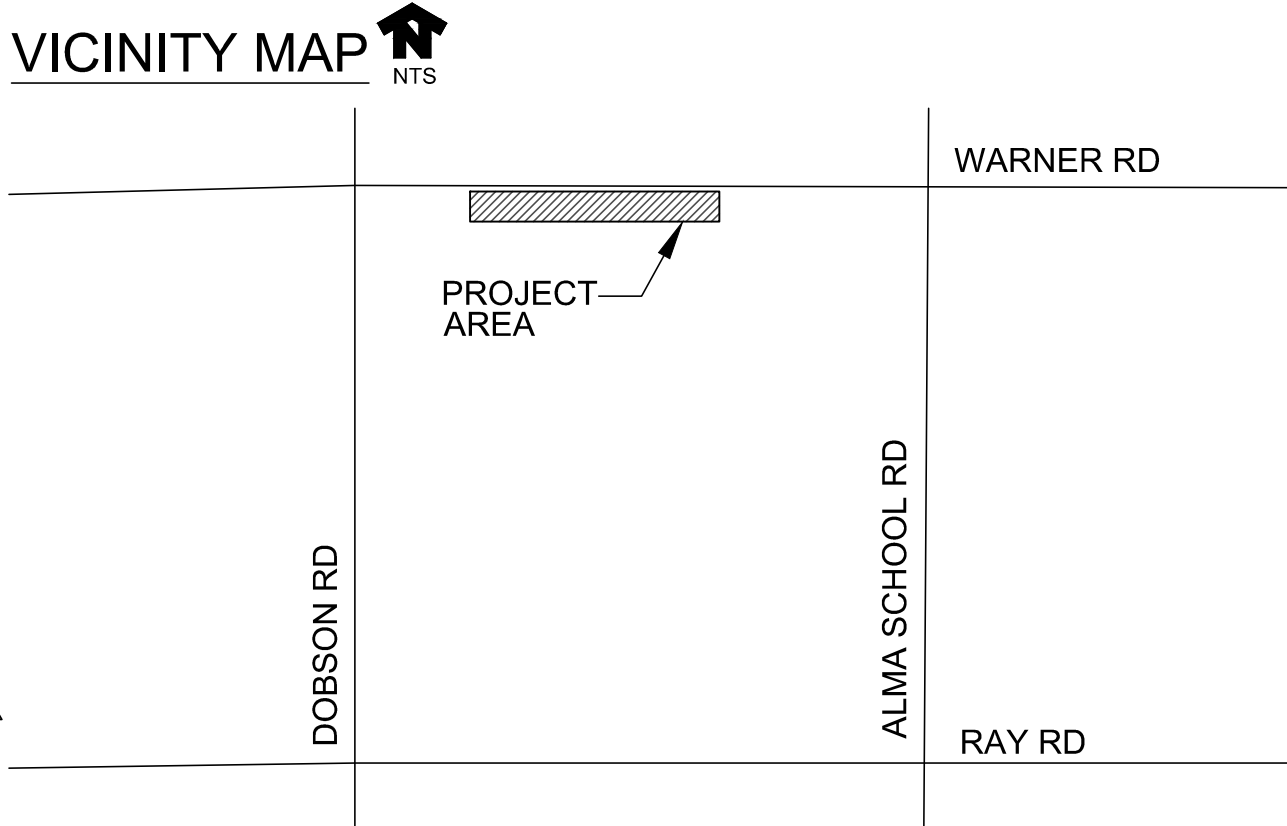
IRRIGATION LEGEND				
DETAIL:	SYMBOL:	DESCRIPTION:	REMARKS:	QTYS:
		EXISTING WATER METER	PROTECT IN PLACE	N/A
		EXISTING REDUCED PRESSURE BACKFLOW PREVENTION ASSEMBLY	PROTECT IN PLACE	N/A
		EXISTING ELECTRIC METER	PROTECT IN PLACE	N/A
3 & 5 ID.03		IRRIGATION CONTROLLER '119'	BASELINE #BL-3200P-R12-CM 12 STATION CONVENTIONALLY WIRED CONTROLLER WITH 16-GAUGE POWDERCOATED STEEL PEDESTAL MOUNT ENCLOSURE WITH #BL-CLOUD-LTE-ESIM MODEM, OMNI DIRECTIONAL ANTENNA KIT #BL-CM-OMNI WITH 50' ANTENNA CABLE #BL-CX-CBL50 AND IN-LINE SURGE ARRESTOR #BL-CX-LA-X; INCLUDE BASEMANAGER PLUS 10 YEAR SERVICE #BL-BMW2-PLUS-10Y WITH POST CONSTRUCTION EQUIPMENT SURVEY BY CONTRACTOR; GROUND CONTROLLER WITH POWER SUPPLY GROUND; CELLULAR SITE SURVEY SHALL DETERMINE CELL PROVIDER, CELL ANTENNA TYPE, AND CONFIRM ANTENNA LOCATION.	1 EA
6 ID.03		MASTER VALVE & FLOW METER ASSEMBLY	MASTER VALVE: 1.0" HUNTER IVC-101G GLASS-FILLED NYLON VALVE WITH SCURBBER & FLOW CONTROL (NORMALLY CLOSED); TWO SCH 80 PVC UNIONS SIZED TO MATCH; CHRISTY'S YELLOW MAXI SIZE WIRE ID TAG; CARSON JUMBO TAN COLOR RECTANGULAR VALVE BOX #1220-12; CONVENTIONAL WIRES TO CONTROLLER SHALL BE #14 AWG BLUE CONTROL, WHITE COMMON, & ONE GRAY SPARE TO MV & FS. FLOW METER: CST FSI-T10-001 1.0" PVC TEE-STYLE FLOW METER, CHRISTY'S YELLOW MAXI SIZE WIRE ID TAG; IN CARSON TAN COLOR 10" ROUND VALVE BOX #910-12; ROUTE WIRES TO CONTROLLER ENTIRELY WITHIN 1.25" SCH 40 PVC CONDUIT.	1" - 1 EA
1 ID.01		ISOLATION BALL VALVE	SPEARS SCH 80 PVC BALL VALVE WITH FULL PORT TRUE UNION; INSTALL IN CARSON #1220 JUMBO TAN VALVE BOX WITH BOLT DOWN T-COVER EMBOSSED WITH 2" STENCIL LETTERS PER VALVE BOX INSTALLATION DETAIL. SIZE TO MATCH PIPE SIZE.	1.5" - 2 EA
1 ID.02		DRIP REMOTE CONTROL VALVE ASSEMBLY	HUNTER DRIP KIT #ICZ-101-LF, 1" GLOBE VALVE, 1" WYE FILTER (150 MESH STAINLESS STEEL SCREEN) AND PRESSURE REGULATOR (25 PSI); 1" SPEARS SCH 80 PVC BALL VALVE WITH FULL PORT TRUE UNION; SCH. 80 PVC NIPPLES & FITTINGS; CHRISTY'S STANDARD YELLOW ID TAG WITH CONTROLLER LETTER & STATION NUMBER (IE: A-1) PRINTED ONE SIDE; INSTALL IN CARSON #1220 TAN JUMBO VALVE BOX WITH BOLT DOWN T-COVER EMBOSSED WITH CONTROLLER LETTER & STATION NUMBER (TO MATCH ID TAG);	10 EA
3 ID.02	NOT SHOWN	MULTI EMITTER ASSEMBLY	BOWSMITH #ML210 1.0 GPH BLUE COLOR AND #ML220 2.0 GPH RED COLOR MULTI-PORT EMITTERS WITH 1/2" FPT INLET; 1/2" SCH 40 FLEX PIPE RISER; 1/4" VINYL DISTRIBUTION TUBES AT 5'-0" MAX. LENGTH; IN 6" NDS TAN COLOR ROUND EMITTER BOX (SEE 'EMITTER NOTE' #4). SEE 'EMITTER SCHEDULE' FOR REQ'D FLOW & QTY. PER PLANT	783 EA
1&2 ID.03		DEEP ROOT WATERING ASSEMBLY	HUNTER #RZWS-36-50-CV 36" DEPTH ROOT ZONE WATERING SYSTEM WITH 0.5 GPM BUBBLER AND FACTORY INSTALLED CHECK VALVE; INCLUDE OPTIONAL FIELD INSTALLED FILTER FABRIC SLEEVE #RZWS-SLEEVE.	42 EA
4 ID.01		FLUSH CAP ASSEMBLY	3/4" API PVC BALL VALVE WITH 3/4" SWIVEL FHT INPUT & 3/4" MHT OUTPUT; 3/4" PVC FLEX PIPE RISER WITH TWO 3/4" SCH 40 PVC MALE ADAPTERS; INSTALL IN CARSON #910 10" ROUND VALVE BOX WITH BOLT DOWN T-COVER EMBOSSED WITH 2" STENCIL LETTERS PER VALVE BOX INSTALLATION DETAIL IN THIS SET. (TWO END CAPS MAX. MAY BE INSTALLED WITHIN SAME VALVE BOX IF LOCATED IN SAME VICINITY)	28 EA
4 ID.02		MAINLINE PIPE	SCH 40 PVC PIPE WITH SCH 80 SOLVENT WELD FITTINGS, SIZE PER PLAN	1.5"= 2,040 LF
		DRIP LATERAL PIPE	1" SCHEDULE 40 PVC SOLVENT WELD PIPE WITH SCHEDULE 40 FITTINGS	57 LF
		DRIP LATERAL PIPE- SHRUBS	3/4" SCHEDULE 40 PVC SOLVENT WELD PIPE WITH SCHEDULE 40 FITTINGS	10,632 LF
		DRIP LATERAL PIPE- TREES	3/4" SCHEDULE 40 PVC SOLVENT WELD PIPE WITH SCHEDULE 40 FITTINGS	5,931 LF
		DEEP ROOT LATERAL PIPE	3/4" SCHEDULE 40 PVC SOLVENT WELD PIPE WITH SCHEDULE 40 FITTINGS	2,723 LF

VALVE KEY:

	VALVE SIZE CONTROLLER/STATION NUMBER CONTROL ZONE FLOW (GPM) ZONE TYPE: SHRUBS = SHRUBS IN DG TREES = TREES IN DG DEEP ROOT = SELECTED EXST TREES
---	---

SURFACE MATERIALS LEGEND AREA 119			
SYMBOL	DESCRIPTION	COLOR	QUANTITY
	Decomposed Granite	Desert Gold or Approved Equal, 1 1/4" Screened MIN., 2 1/2" Depth	279,193 SF.
	Riprap	Desert Gold or Approved Equal, 3" - 6", 6" Depth	1,940 SF.

VICINITY MAP



PROTECTION FENCING LEGEND:

SYMBOL	DESCRIPTION	QTY
	TREE PROTECTION FENCING FOR EXISTING TREES. REFER TO DETAILS 1-2, SHEET LD-1.02	3,555 LF

PLANT INVENTORY QUANTITY:

	Tree
Salvage and Relocate	0
Destroy and Remove	0
Protect In Place	42
Total	42

PLANT INVENTORY

Plant #	Species	Common Name	Caliper (in)	Width (in)	Height (in)	Inventory Designation	Action Designation	Comments
161	Eucalyptus spp.	Eucalyptus Variety	32	45	50	NS	PIP	
162	Eucalyptus spp.	Eucalyptus Variety	28	30	45	NS	PIP	
163	Eucalyptus spp.	Eucalyptus Variety	32	40	60	NS	PIP	
164	Eucalyptus spp.	Eucalyptus Variety	36	42	60	NS	PIP	
165	Eucalyptus spp.	Mesquite Variety	(2) 14" (2) 10"	45	38	NS	PIP	
166	Eucalyptus spp.	Eucalyptus Variety	24	40	50	NS	PIP	
167	Eucalyptus spp.	Eucalyptus Variety	24	42	48	NS	PIP	
168	Eucalyptus spp.	Eucalyptus Variety	22	34	45	NS	PIP	
169	Eucalyptus spp.	Eucalyptus Variety	24	40	60	NS	PIP	
170	Eucalyptus spp.	Eucalyptus Variety	20	30	50	NS	PIP	
171	Eucalyptus spp.	Eucalyptus Variety	14	30	50	NS	PIP	
172	Eucalyptus spp.	Eucalyptus Variety	28	40	50	NS	PIP	
173	Eucalyptus spp.	Eucalyptus Variety	28	55	50	NS	PIP	
174	Brachychiton populneus	Australian Bottle Tree	12	20	25	NS	PIP	
175	Brachychiton populneus	Australian Bottle Tree	14	15	25	NS	PIP	
176	Prosopis spp.	Mesquite Variety	26	30	30	NS	PIP	
177	Eucalyptus spp.	Eucalyptus Variety	24	45	50	NS	PIP	
178	Eucalyptus spp.	Eucalyptus Variety	26	45	50	NS	PIP	
179	Prosopis spp.	Mesquite Variety	20	35	40	NS	PIP	
180	Brachychiton populneus	Australian Bottle Tree	(2) 10	20	25	NS	PIP	
181	Brachychiton populneus	Australian Bottle Tree	10	15	20	NS	PIP	
182	Brachychiton populneus	Australian Bottle Tree	7	8	10	NS	PIP	
183	Eucalyptus spp.	Eucalyptus Variety	20	40	50	NS	PIP	
184	Eucalyptus spp.	Eucalyptus Variety	36	50	60	NS	PIP	
185	Eucalyptus spp.	Eucalyptus Variety	24	45	55	NS	PIP	
186	Eucalyptus spp.	Eucalyptus Variety	16	35	45	NS	PIP	
187	Eucalyptus spp.	Eucalyptus Variety	26	45	60	NS	PIP	
188	Ulmus parvifolia	Evergreen Elm	12	25	30	NS	PIP	
189	Ulmus parvifolia	Evergreen Elm	12	25	40	NS	PIP	
190	Ulmus parvifolia	Evergreen Elm	11	28	40	NS	PIP	
191	Ulmus parvifolia	Evergreen Elm	10	26	35	NS	PIP	
192	Ulmus parvifolia	Evergreen Elm	9	35	25	NS	PIP	
193	Ulmus parvifolia	Evergreen Elm	4	15	11	NS	PIP	
194	Ulmus parvifolia	Evergreen Elm	12	32	35	NS	PIP	
195	Ulmus parvifolia	Evergreen Elm	8	28	30	NS	PIP	
196	Eucalyptus spp.	Eucalyptus Variety	36	35	78	NS	PIP	
197	Ulmus parvifolia	Evergreen Elm	(2) 6"	25	32	NS	PIP	
198	Ulmus parvifolia	Evergreen Elm	10	20	35	NS	PIP	
199	Ulmus parvifolia	Evergreen Elm	(2) 8"	26	35	NS	PIP	
200	Dalbergia sissoo	Indian Rosewood	16	30	50	NS	PIP	
201	Eucalyptus spp.	Eucalyptus Variety	36	50	60	NS	PIP	
202	Ulmus parvifolia	Evergreen Elm	16	50	40	NS	PIP	

INVENTORY DESIGNATION LEGEND

S = Salvageable
NS = Non-Salvageable

INTENDED DESIGNATION LEGEND

S = Salvage and Relocate
D = Destroy, Not Salvageable & Cannot Remain in Place
PIP = Preserve and Protect In Place

LANDSCAPE/IRRIGATION SHEET LIST:

A119-1.01	AREA 119 LEGENDS & QUANTITY
A119-2.01	AREA 119 DEMOLITION AND PLANT INVENTORY PLAN
A119-3.01	AREA 119 LANDSCAPE PLAN
A119-3.02	AREA 119 LANDSCAPE PLAN
A119-4.01	AREA 119 IRRIGATION PLAN
A119-4.02	AREA 119 IRRIGATION PLAN



4649 E COTTON GIN LOOP B2
PHOENIX, AZ 85040
602.438.2221

CONSULTANT(S):

CLIENT:



TURF TO XERISCAPE PROGRAM PHASE I AREA 119 - LEGENDS AND QUANTITIES

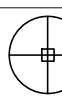
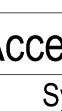
05.19.25 ADDENDUM 1

#	DATE	DESCRIPTION
		REVISIONS



DESIGNED BY: AL KZ
CHECKED BY: SP/JV
SCALE: NTS
DRAWING NO.: A119-1.01

DRAWN BY: J2
APPROVED BY: JV
DATE: 04/22/25
SHEET NO.: 18 OF 66

Landscape Legend - Area 416A					
Trees / Palms					
Symbol	Botanical / Common Name	Size	Qty.	Remarks	
	Acacia salicina Willow Acacia	24" Box 36" Box	210	24": Standard H 7'-8" W 2.5'-3.5" Cal. 1.25"-1.5"	36": Standard H 9'-11" W 5'-7" Cal. 2.0"-2.5"
	Chilopsis linearis spp Desert Willow	15 Gal. 24" Box	316	15": Multi H 4'-5" W 2'-3"	24": Multi H 5'-7" W 3'-4"
	Eucalyptus papuana Ghost Gum Eucalyptus	15 Gal.	2	15 Gal: Standard H 6'-7" W 2'-3" Cal. 0.5"-1.0"	1
	Pistacia 'Red Push' Red Push Pistache	36" Box	8	36": Standard H 12'-14" W 6'-8" Cal. 3'-4"	
	Quercus Virginiana 'Heritage' Southern Live Oak	36" Box	5	36": Standard H 10'-12" W 5'-7" Cal. 1.75"-2.5"	
	Existing Tree Protect In Place	Varies	14	Varies	
Shrubs					
Symbol	Botanical / Common Name	Size	Qty.	Remarks	
	Caesalpinia pulcherrima Red Bird of Paradise	5 Gallon	34	Full Past Can	
	Simmondsia chinensis Jojoba	5 Gallon	14	Full Past Can	
	Buddleja marrubifolia Woolly Butterfly Bush	5 Gallon	3	Full Past Can	
	Leucophyllum frutescens Texas Sage	5 Gallon	16	Full Past Can	
	Senna artemisioides Feathery Senna	5 Gallon	22	Full Past Can	
	Tecoma x 'Orange Jubilee' Orange Jubilee	5 Gallon	32	Full Past Can	
Groundcovers					
Symbol	Botanical / Common Name	Size	Qty.	Remarks	
	Acacia redolens 'Low Boy' Trailing Acacia	5 Gallon	33	Full Past Can	
	Convolvulus cneorum Bush Morning Glory	5 Gallon	6	Full Past Can	
	Eremophila glabra 'Mingenew Gold' Outback Sunrise Emu	5 Gallon	1	Full Past Can	
Accents					
Symbol	Botanical / Common Name	Size	Qty.	Remarks	
	Agave americana 'Variegata' Variegated Century Plant	5 Gallon	22	Full Past Can	
	Hesperaloe funifera Giant Hesperaloe	5 Gallon	15	Full Past Can	
	Hesperaloe parviflora 'Perpa' Brakelights Red Yucca	5 Gallon	3	Full Past Can	
	Muhlenbergia rigens Deer Grass	5 Gallon	14	Full Past Can	
	Nolina microcarpa Bear Grass	5 Gallon	14	Full Past Can	

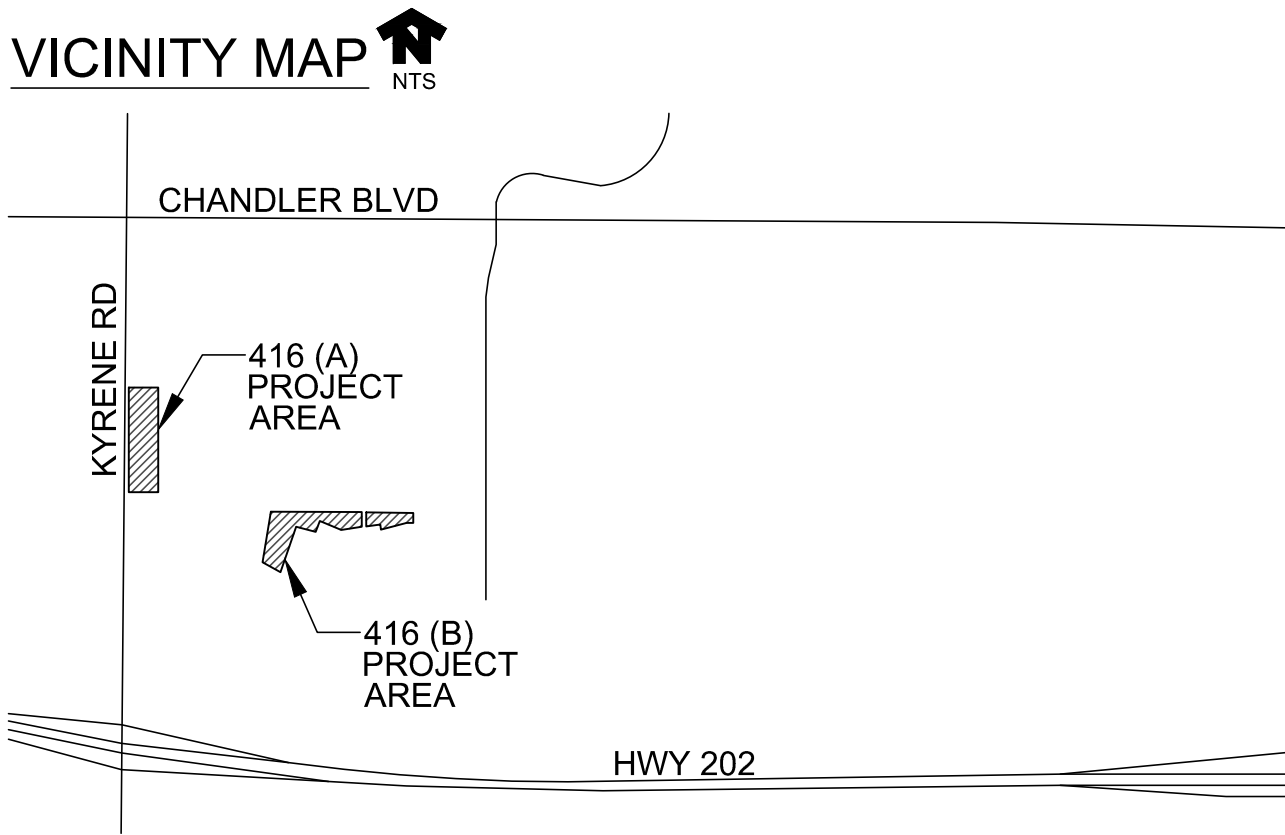
SURFACE MATERIALS LEGEND AREA 416A			
SYMBOL	DESCRIPTION	COLOR	QUANTITY
	Decomposed Granite	Desert Gold or Approved Equal, 1 1/4" Screened MIN., 2 1/2" Depth	133,828 SF.
	Riprap	Desert Gold or Approved Equal, 3" - 6", 6" Depth	199 SF.

DEMOLITION KEY NOTES AREA 416A		
1	REMOVE CONCRETE HEADER (595 LF.)	-----
2	REMOVE & DISPOSE OF TURF (128,605 SF.)	
3	REMOVE DG (3,474 SF.)	
7	REMOVE IRRIGATION CONTROLLER (1 EA)	

Landscape Legend - Area 416B					
Trees / Palms					
Symbol	Botanical / Common Name	Size	Qty.	Remarks	
	Acacia aneura Mulga	15 Gal. 24" Box	6 3	15 Gal: Standard H 4'-5" W 1'-2" Cal. 0.5"-0.75"	24": Standard H 6'-7" W 2'-3" Cal. 0.75"-1.25"
	Acacia salicina Willow Acacia	24" Box	19	24": Standard H 7'-8" W 2.5'-3.5" Cal. 1.25"-1.5"	
	Pistacia 'Red Push' Red Push Pistache	24" Box 36" Box	2 28	24": Standard H 7'-9" W 2.5'-3.5" Cal. 1.0"-1.5"	36": Standard H 12'-14" W 6'-8" Cal. 3"-4"
	Quercus Virginiana 'Heritage' Southern Live Oak	24" Box	17	24": Standard H 7'-9" W 3'-4" Cal. 1.0"-1.5"	
	Existing Tree Protect In Place	Varies	29	Varies	
Shrubs					
Symbol	Botanical / Common Name	Size	Qty.	Remarks	
	Caesalpinia pulcherrima Red Bird of Paradise	5 Gallon	35	Full Past Can	
	Simmondsia chinensis Jojoba	5 Gallon	44	Full Past Can	
	Buddleja marrubiifolia Woolly Butterfly Bush	5 Gallon	8	Full Past Can	
	Leucophyllum frutescens Texas Sage	5 Gallon	42	Full Past Can	
	Senna artemisioides Feathery Senna	5 Gallon	52	Full Past Can	
	Tecoma x 'Orange Jubilee' Orange Jubilee	5 Gallon	33	Full Past Can	
Groundcovers					
Symbol	Botanical / Common Name	Size	Qty.	Remarks	
	Acacia redolens 'Low Boy' Trailing Acacia	5 Gallon	61	Full Past Can	
	Convolvulus cneorum Bush Morning Glory	5 Gallon	26	Full Past Can	
	Eremophila glabra 'Mingenew Gold' Outback Sunrise Emu	5 Gallon	79	Full Past Can	
Accents					
Symbol	Botanical / Common Name	Size	Qty.	Remarks	
	Agave americana 'Variegata' Variegated Century Plant	5 Gallon	34	Full Past Can	
	Hesperaloe parviflora 'Perpa' Brakelights Red Yucca	5 Gallon	12	Full Past Can	
	Hesperaloe funifera Giant Hesperaloe	5 Gallon	35	Full Past Can	
	Muhlenbergia rigens Deer Grass	5 Gallon	69	Full Past Can	
	Nolina microcarpa Bear Grass	5 Gallon	58	Full Past Can	

SURFACE MATERIALS LEGEND AREA 416B			
SYMBOL	DESCRIPTION	COLOR	QUANTITY
	Decomposed Granite	Desert Gold or Approved Equal, 1 1/4" Screened MIN., 2 1/2" Depth	147,584 SF.
	Riprap	Desert Gold or Approved Equal, 3" - 6", 6" Depth	306 SF.
	Concrete Header	8" x 6" Concrete Header	373 LF.
	Turf Grass Seed	'Rio' F1 Hybrid Bermuda	14,564 SF.

DEMOLITION KEY NOTES AREA 416B		
1	REMOVE CONCRETE HEADER (2,768 LF.)	-----
2	REMOVE & DISPOSE OF TURF (156,080 SF.)	
3	REMOVE DG (14,376 SF.)	
6	DISCONNECT & REMOVE IRRIGATION BOOSTER PUMP (1EA)	
7	REMOVE IRRIGATION CONTROLLER (1 EA)	



LANDSCAPE/IRRIGATION SHEET LIST:

A416-1.01	AREA 416 LEGENDS & QUANTITY
A416-1.02	AREA 416 LEGENDS & QUANTITY
A416A-2.01	AREA 416A DEMOLITION AND PLANT INVENTORY PLAN
A416B-2.01	AREA 416B DEMOLITION AND PLANT INVENTORY PLAN
A416A-3.01	AREA 416A LANDSCAPE PLAN
A416A-3.02	AREA 416A LANDSCAPE PLAN
A416B-3.03	AREA 416B LANDSCAPE PLAN
A416B-3.04	AREA 416B LANDSCAPE PLAN
A416B-3.05	AREA 416B LANDSCAPE PLAN
A416A-4.01	AREA 416A IRRIGATION PLAN
A416A-4.02	AREA 416A IRRIGATION PLAN
A416B-4.03	AREA 416B IRRIGATION PLAN
A416B-4.04	AREA 416B IRRIGATION PLAN
A416B-4.05	AREA 416B IRRIGATION PLAN



CONSULTANT(S):



CITY OF CHANDLER

TURF TO XERISCAPE PROGRAM

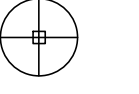
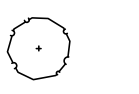
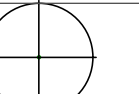
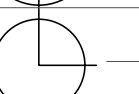
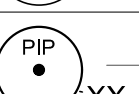
PHASE I

AREA 416 - LEGENDS AND QUANTITIES

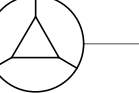
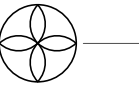
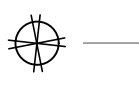
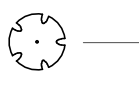
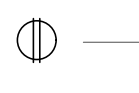
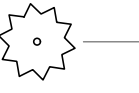
	05.19.25	ADDENDUM 1
#	DATE	DESCRIPTION
REVISIONS		

DESIGNED BY: AL, KZ	DRAWN BY: J2
CHECKED BY: SP/JV	APPROVED BY: JV
SCALE: NTS	DATE: 04/22/25
DRAWING NO.: A416-1.01	SHEET NO.: 27 OF 66

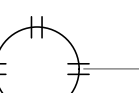
Landscape Legend - Area 418A

Trees / Palms				
Symbol	Botanical / Common Name	Size	Qty.	Remarks
	Acacia aneura Mulga	24" Box	37	24" Standard H 6'-7' W 2'-3' Cal. 0.75" -1.25"
	Acacia salicina Willow Acacia	36" Box	12	36" Standard H 9'-11' W 5'-7' Cal. 2.0"-2.5"
	Chilopsis linearis spp Desert Willow	15 Gal. 24" Box	4 8	15": Multi H 4'-5' W 2'-3' 24": Multi H 5'-7' W 3'-4'
	Olea europaea 'Wilsonii' Wilson's Fruitless Olive	36" Box	9	36": Multi H 8'-10' W 5'-7'
	Pistacia 'Red Push' Red Push Pistache	24" Box	9	24": Standard H 7'-8' W 2.5'-3.5' Cal. 1.0"-1.5"
	Quercus Virginiana 'Heritage' Southern Live Oak	24" Box 36" Box	32 1	24": Standard H 7'-8' W 3'-4' Cal. 1.0"-1.5" 36": Standard H 10'-12' W 5'-7' Cal. 1.75"-2.5"
	Existing Tree Protect In Place	Varies	34	Varies

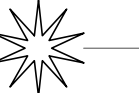
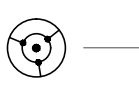
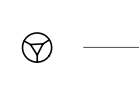
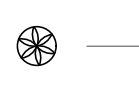
Shrubs

Symbol	Botanical / Common Name	Size	Qty.	Remarks
	Caesalpinia pulcherrima Red Bird of Paradise	5 Gallon	32	Full Past Can
	Simmondsia chinensis Jojoba	5 Gallon	13	Full Past Can
	Buddleja marrubiifolia Woolly Butterfly Bush	5 Gallon	11	Full Past Can
	Leucophyllum frutescens Texas Sage	5 Gallon	32	Full Past Can
	Ruellia peninsularis Desert Ruellia	5 Gallon	64	Full Past Can
	Tecoma x 'Orange Jubilee' Orange Jubilee	5 Gallon	46	Full Past Can

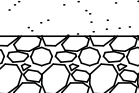
Groundcovers

Symbol	Botanical / Common Name	Size	Qty.	Remarks
	Acacia redolens 'Low Boy' Trailing Acacia	5 Gallon	58	Full Past Can
	Convolvulus cneorum Bush Morning Glory	5 Gallon	151	Full Past Can
	Eremophila glabra 'Mingenew Gold' Outback Sunrise Emu	5 Gallon	81	Full Past Can

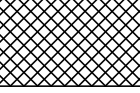
Accents

Symbol	Botanical / Common Name	Size	Qty.	Remarks
	Agave americana 'Variegata' Variegated Century Plant	5 Gallon	31	Full Past Can
	Hesperaloe funifera Giant Hesperaloe	5 Gallon	6	Full Past Can
	Hesperaloe parviflora 'Perpa' Brakeights Red Yucca	5 Gallon	125	Full Past Can
	Hesperaloe parviflora 'Yellow' Yellow Yucca	5 Gallon	21	Full Past Can
	Muhlenbergia rigens Deer Grass	5 Gallon	133	Full Past Can
	Nolina microcarpa Bear Grass	5 Gallon	31	Full Past Can

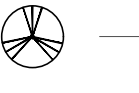
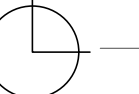
SURFACE MATERIALS LEGEND
AREA 418A

SYMBOL	DESCRIPTION	COLOR	QUANTITY
	Decomposed Granite	Desert Gold or Approved Equal, 1 1/4" Screened MIN., 2 1/2" Depth	167,523 SF.
	Riprap	Desert Gold or Approved Equal, 3" - 6", 6" Depth	311 SF.

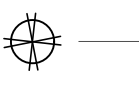
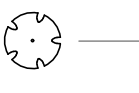
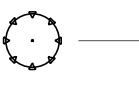
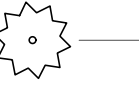
DEMOLITION KEY NOTES
AREA 418A

1	REMOVE CONCRETE HEADER (996 LF.)	----
2	REMOVE & DISPOSE OF TURF (151,488 SF.)	
3	REMOVE DG (15,407 SF.)	
7	REMOVE IRRIGATION CONTROLLER (1 EA)	

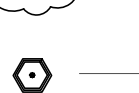
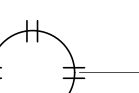
Landscape Legend - Area 418B

Trees / Palms				
Symbol	Botanical / Common Name	Size	Qty.	Remarks
	Acacia aneura Mulga	15 Gal. 24" Box	3 45	15G: Standard H 4'-5' W 1'-2' Cal. 0.50" - 0.75" 24": Standard H 6'-7' W 2'-3' Cal. 0.75" -1.25"
	Olea europaea 'Wilsonii' Wilson's Fruitless Olive	24" Box 36" Box	3 9	24": Multi H 6'-8' W 3'-5' 36": Multi H 8'-10' W 5'-7'
	Quercus Virginiana 'Heritage' Southern Live Oak	24" Box 36" Box	26 3	24": Standard H 7'-8' W 3'-4' Cal. 1.0"-1.5" 36": Standard H 10'-12' W 5'-7' Cal. 1.75"-2.5"
	Existing Tree Protect In Place	Varies	31	Varies

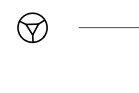
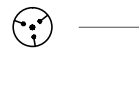
Shrubs

Symbol	Botanical / Common Name	Size	Qty.	Remarks
	Caesalpinia pulcherrima Red Bird of Paradise	5 Gallon	27	Full Past Can
	Buddleja marrubiifolia Woolly Butterfly Bush	5 Gallon	16	Full Past Can
	Leucophyllum frutescens Texas Sage	5 Gallon	71	Full Past Can
	Senna artemisioides Feathery Senna	5 Gallon	21	Full Past Can
	Tecoma x 'Orange Jubilee' Orange Jubilee	5 Gallon	41	Full Past Can

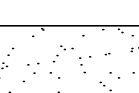
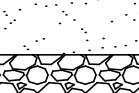
Groundcovers

Symbol	Botanical / Common Name	Size	Qty.	Remarks
	Acacia redolens 'Low Boy' Trailing Acacia	5 Gallon	38	Full Past Can
	Convolvulus cneorum Bush Morning Glory	5 Gallon	103	Full Past Can
	Eremophila glabra 'Mingenew Gold' Outback Sunrise Emu	5 Gallon	82	Full Past Can

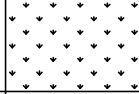
Accents

Symbol	Botanical / Common Name	Size	Qty.	Remarks
	Agave desmettiana Smooth Agave	5 Gallon	74	Full Past Can
	Hesperaloe funifera Giant Hesperaloe	5 Gallon	33	Full Past Can
	Hesperaloe parviflora 'Perpa' Brakeights Red Yucca	5 Gallon	45	Full Past Can
	Hesperaloe parviflora 'Yellow' Yellow Yucca	5 Gallon	30	Full Past Can
	Nolina microcarpa Bear Grass	5 Gallon	33	Full Past Can

SURFACE MATERIALS LEGEND
AREA 418B

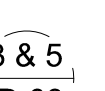
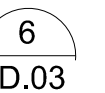
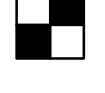
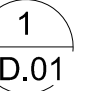
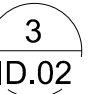
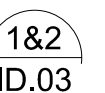
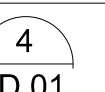
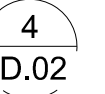
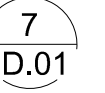
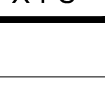
SYMBOL	DESCRIPTION	COLOR	QUANTITY
	Decomposed Granite	Desert Gold or Approved Equal, 1 1/4" Screened MIN., 2 1/2" Depth	112,855 SF.
	Riprap	Desert Gold or Approved Equal, 3" - 6", 6" Depth	468 SF.

DEMOLITION KEY NOTES
AREA 418B

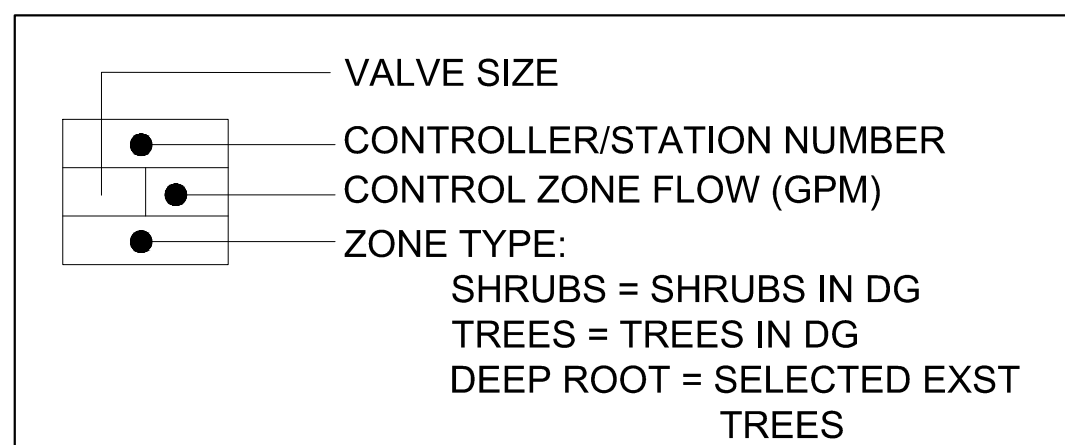
2	REMOVE & DISPOSE OF TURF (112,270 SF.)	
7	REMOVE IRRIGATION CONTROLLER (1EA)	

LANDSCAPE/IRRIGATION SHEET LIST:

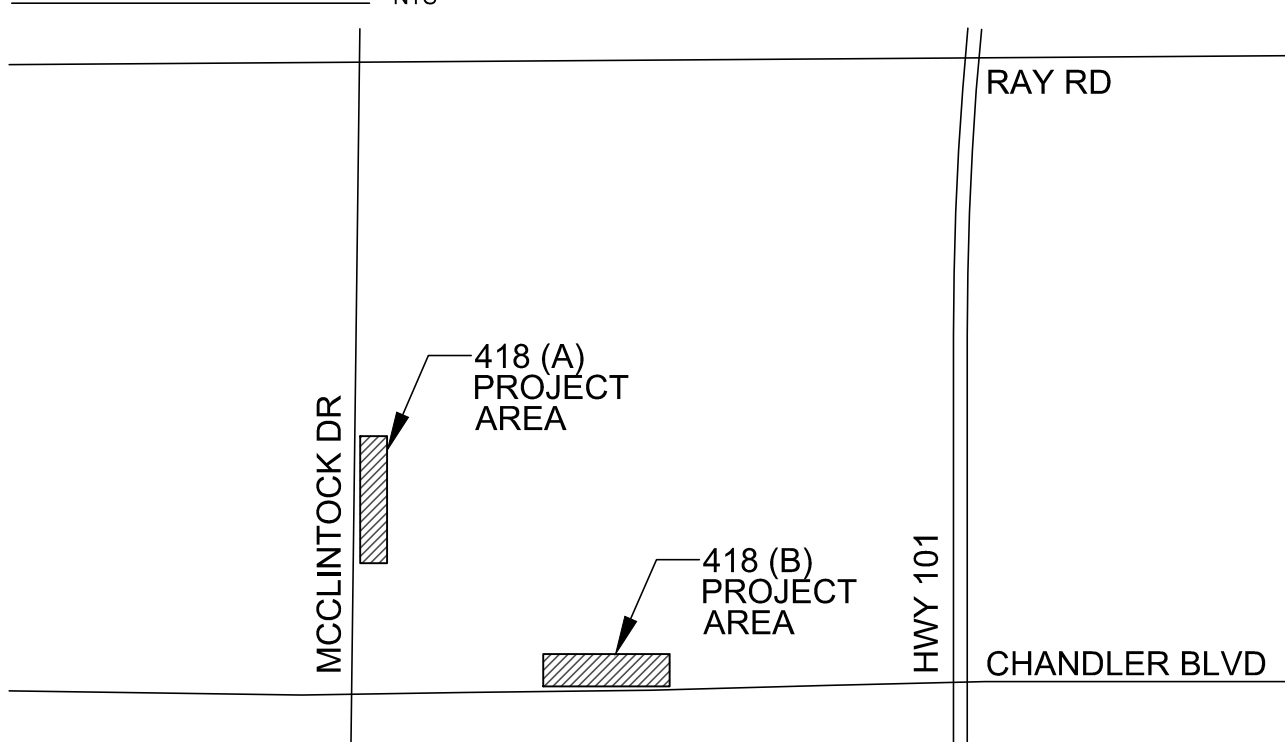
A418-1.01	AREA 418 LEGENDS & QUANTITY
A418-1.02	AREA 418 LEGENDS & QUANTITY
A418-2.01	AREA 418 DEMOLITION AND PLANT INVENTORY PLAN
A418-2.02	AREA 418 DEMOLITION AND PLANT INVENTORY PLAN
A418-3.01	AREA 418 LANDSCAPE PLAN
A418-3.02	AREA 418 LANDSCAPE PLAN
A418-3.03	AREA 418 LANDSCAPE PLAN
A418-4.01	AREA 418 IRRIGATION PLAN
A418-4.02	AREA 418 IRRIGATION PLAN
A418-4.03	AREA 418 IRRIGATION PLAN

IRRIGATION LEGEND					
DETAIL:	SYMBOL:	DESCRIPTION:	REMARKS:	418A QTY'S:	418B QTY'S:
		EXISTING WATER METER	PROTECT IN PLACE	N/A	N/A
		EXISTING REDUCED PRESSURE BACKFLOW PREVENTION ASSEMBLY	PROTECT IN PLACE	N/A	N/A
		EXISTING ELECTRIC METER	PROTECT IN PLACE	N/A	N/A
		IRRIGATION CONTROLLERS '418A' & '418B'	BASELINE #BL-3200P-R12-CM 12 STATION CONVENTIONALLY WIRED CONTROLLER WITH 16-GAUGE POWDERCOATED STEEL PEDESTAL MOUNT ENCLOSURE WITH #BL-CLOUD-LTE-ESIM MODEM, OMNI DIRECTIONAL ANTENNA KIT #BL-CM-OMNI WITH 50' ANTENNA CABLE #BL-CX-CBL50 AND IN-LINE SURGE ARRESTOR #BL-CX-LA-X; INCLUDE BASEMANAGER PLUS 10 YEAR SERVICE #BL-BMW2-PLUS-10Y WITH POST CONSTRUCTION EQUIPMENT SURVEY BY CONTRACTOR; GROUND CONTROLLER WITH POWER SUPPLY GROUND; CELLULAR SITE SURVEY SHALL DETERMINE CELL PROVIDER, CELL ANTENNA TYPE, AND CONFIRM ANTENNA LOCATION.	1 EA	1 EA
		MASTER VALVE & FLOW METER ASSEMBLY	MASTER VALVE: 1.0" HUNTER IVC-101G GLASS-FILLED NYLON VALVE WITH FLOW CONTROL (NORMALLY CLOSED); TWO SCH 80 PVC UNIONS SIZED TO MATCH; CHRISTY'S YELLOW MAXI SIZE WIRE ID TAG; CARSON JUMBO TAN COLOR RECTANGULAR VALVE BOX #1220-12; CONVENTIONAL WIRES TO CONTROLLER SHALL BE #14 AWG BLUE CONTROL, WHITE COMMON, & ONE GRAY SPARE TO MV & FS. FLOW METER: CST FSI-T10-001 1.0" PVC TEE-STYLE FLOW METER, CHRISTY'S YELLOW MAXI SIZE WIRE ID TAG; IN CARSON TAN COLOR 10" ROUND VALVE BOX #910-12; ROUTE WIRES TO CONTROLLER ENTIRELY WITHIN 1.25" SCH 40 PVC CONDUIT.	1" - 1 EA	1" - 1 EA
		ISOLATION BALL VALVE	SPEARS SCH 80 PVC BALL VALVE WITH FULL PORT TRUE UNION; INSTALL IN CARSON #1220 JUMBO TAN VALVE BOX WITH BOLT DOWN T-COVER EMBOSSED WITH 2" STENCIL LETTERS PER VALVE BOX INSTALLATION DETAIL. SIZE TO MATCH PIPE SIZE.	1.25" - 2 EA	1.25" - 1 EA
		DRIP REMOTE CONTROL VALVE ASSEMBLY	HUNTER DRIP KIT #ICZ-101-LF, 1" GLOBE VALVE, 1" WYE FILTER (150 MESH STAINLESS STEEL SCREEN) AND PRESSURE REGULATOR (25 PSI); 1" SPEARS SCH 80 PVC BALL VALVE WITH FULL PORT TRUE UNION; SCH. 80 PVC NIPPLES & FITTINGS; CHRISTY'S STANDARD YELLOW ID TAG WITH CONTROLLER LETTER & STATION NUMBER (IE: A-1) PRINTED ONE SIDE; INSTALL IN CARSON #1220 TAN JUMBO VALVE BOX WITH BOLT DOWN T-COVER EMBOSSED WITH CONTROLLER LETTER & STATION NUMBER (TO MATCH ID TAG);	8 EA	7 EA
	NOT SHOWN	MULTI EMITTER ASSEMBLY	BOWSMITH #ML210 1.0 GPH BLUE COLOR AND #ML220 2.0 GPH RED COLOR MULTI-PORT EMITTERS WITH 1/2" FPT INLET; 1/2" SCH 40 FLEX PIPE RISER; 1/4" VINYL DISTRIBUTION TUBES AT 5'-0" MAX. LENGTH; IN 6" NDS TAN COLOR ROUND EMITTER BOX (SEE 'EMITTER NOTE' #4). SEE 'EMITTER SCHEDULE' FOR REQ'D FLOW & QTY. PER PLANT	514 EA	425 EA
		DEEP ROOT WATERING ASSEMBLY	HUNTER #RZWS-36-50-CV 36" DEPTH ROOT ZONE WATERING SYSTEM WITH 0.25 GPM BUBBLER AND FACTORY INSTALLED CHECK VALVE; INCLUDE OPTIONAL FIELD INSTALLED FILTER FABRIC SLEEVE #RZWS-SLEEVE.	38 EA	56 EA
		FLUSH CAP ASSEMBLY	3/4" API PVC BALL VALVE WITH 3/4" SWIVEL FHT INPUT & 3/4" MHT OUTPUT; 3/4" PVC FLEX PIPE RISER WITH TWO 3/4" SCH 40 PVC MALE ADAPTERS; INSTALL IN CARSON #910 10" ROUND VALVE BOX WITH BOLT DOWN T-COVER EMBOSSED WITH 2" STENCIL LETTERS PER VALVE BOX INSTALLATION DETAIL IN THIS SET. (TWO END CAPS MAX. MAY BE INSTALLED WITHIN SAME VALVE BOX IF LOCATED IN SAME VICINITY)	12 EA	14 EA
		MAINLINE PIPE	SCH 40 PVC PIPE WITH SCH 80 SOLVENT WELD FITTINGS, SIZE PER PLAN	1.25"- 1,350 LF	1.25"- 836 LF
		DRIP LATERAL PIPE	1" SCHEDULE 40 PVC SOLVENT WELD PIPE WITH SCHEDULE 40 FITTINGS	108 LF	56 LF
		DRIP LATERAL PIPE- SHRUBS	3/4" SCHEDULE 40 PVC SOLVENT WELD PIPE WITH SCHEDULE 40 FITTINGS	3,360 LF	3,576 LF
		DRIP LATERAL PIPE- TREES	3/4" SCHEDULE 40 PVC SOLVENT WELD PIPE WITH SCHEDULE 40 FITTINGS	3,642 LF	3,009 LF
		DEEP ROOT LATERAL PIPE	3/4" SCHEDULE 40 PVC SOLVENT WELD PIPE WITH SCHEDULE 40 FITTINGS	1,643 LF	1,928 LF
		PIPE SLEEVE (PS)	SCHEDULE 40 PVC PIPE (WHITE); INSTALL SLEEVES AT DEEPEST PIPE DEPTH WITHIN SLEEVE OR 24" MIN. COVER UNDER DRIVING SURFACES; ANY SLEEVES NOTED FOR BORING IS CONSIDERED INCIDENTAL TO SLEEVE COST	N/A	3"PS= 15 LF

VALVE KEY:



VICINITY MAP



CONSULTANT(S):

CLIENT:



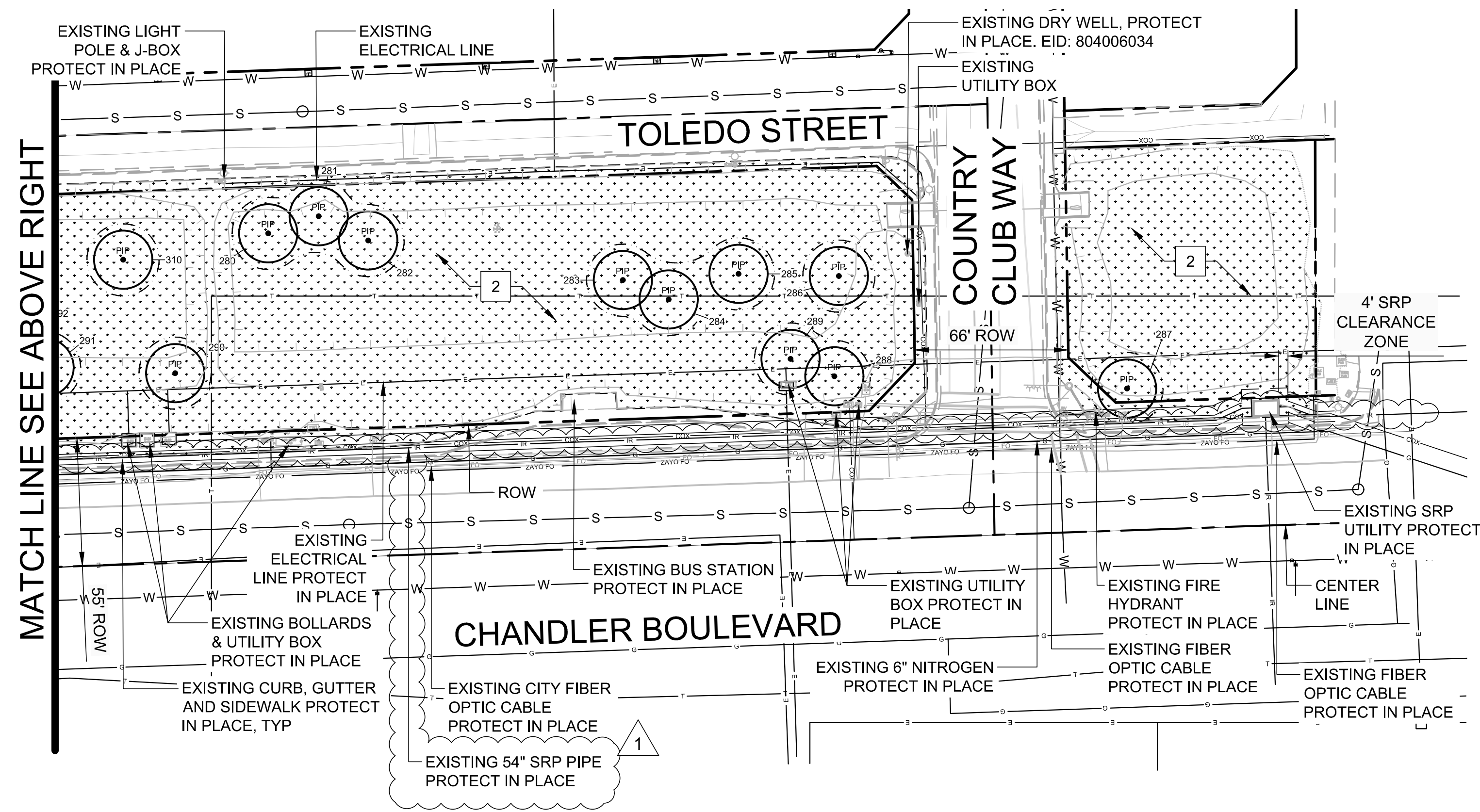
CITY OF CHANDLER
TURF TO XERISCAPE PROGRAM
PHASE I
AREA 418 - LEGENDS AND QUANTITIES

05.19.25 ADDENDUM 1

#	DATE	DESCRIPTION
REVISIONS		



DESIGNED BY: AL, KZ	DRAWN BY: J2
CHECKED BY: SP/JV	APPROVED BY: JV
SCALE: NTS	DATE: 04/22/25
DRAWING NO.: A418-1.01	SHEET NO.: 41 OF 66



EXISTING UTILITIES KEY:	
SYMBOL/ LINETYPE	DESCRIPTION
	WATER
	SEWER
	ELECTRICAL
	OVERHEAD ELECTRICAL
	IRRIGATION
	GAS
	TELECO
	FIBER OPTIC CABLE
	CITY FIBER OPTIC CABLE
	COX
	LIGHT POLE
NOTE:  J-BOX  UNIDENTIFIED LIGHT POLE	

NOTE:
CAUTION 6" NITROGEN PIPELINE,
CONTRACTOR IS TO CONTACT AIR PRODUCTS
48 HOURS PRIOR TO WORKING WITHIN 10FT
OF PIPELINE @ 623-693-3153, 480-225-1406, OR
480-899-1177, REFER TO AIR PRODUCT
CONSTRUCTION NOTE ON SHEET A418-1.02.

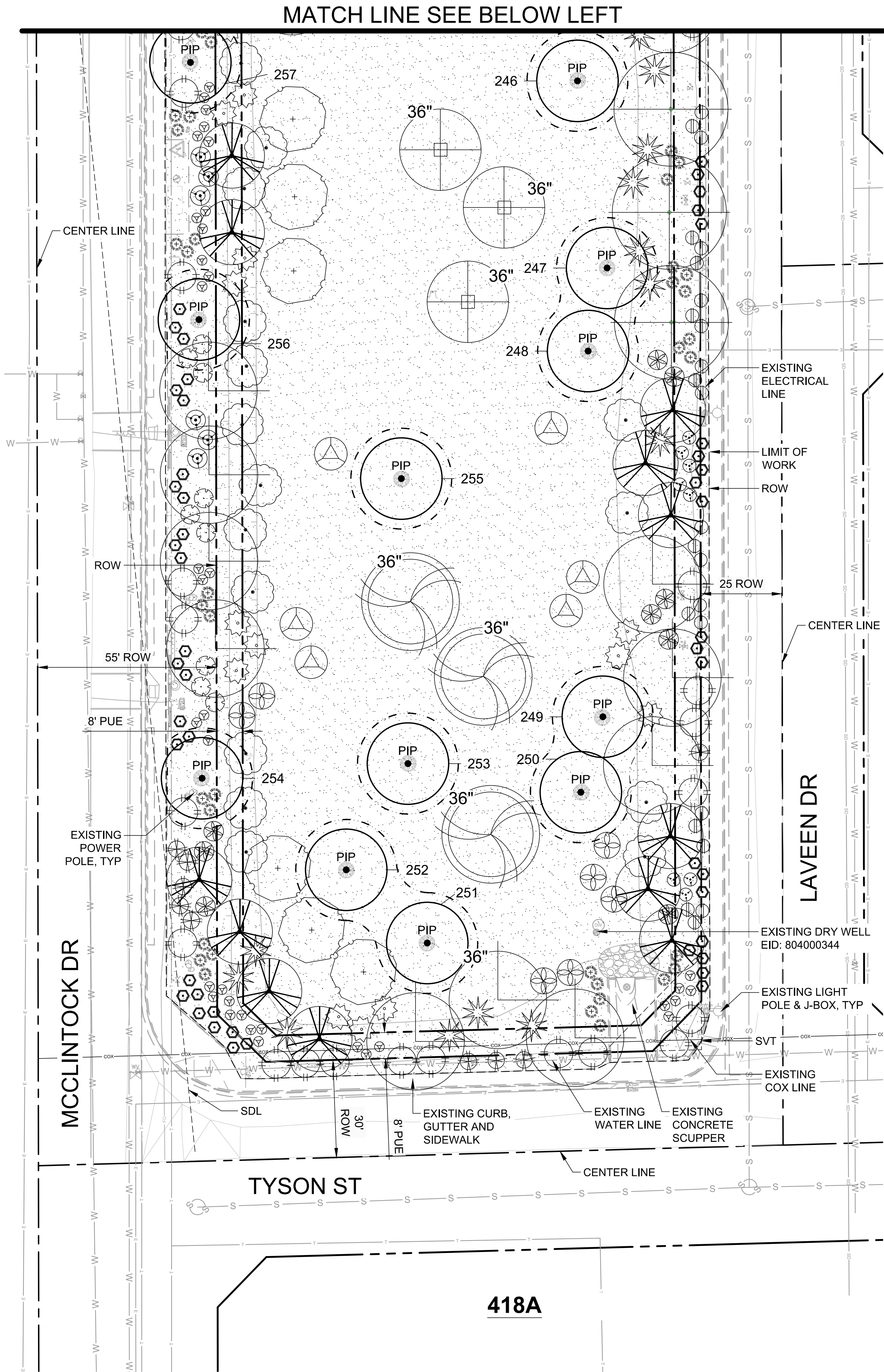


1	05.19.25	ADDENDUM 1
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41491
J. SETH
PLACKO
Landscape Architect
State of New York

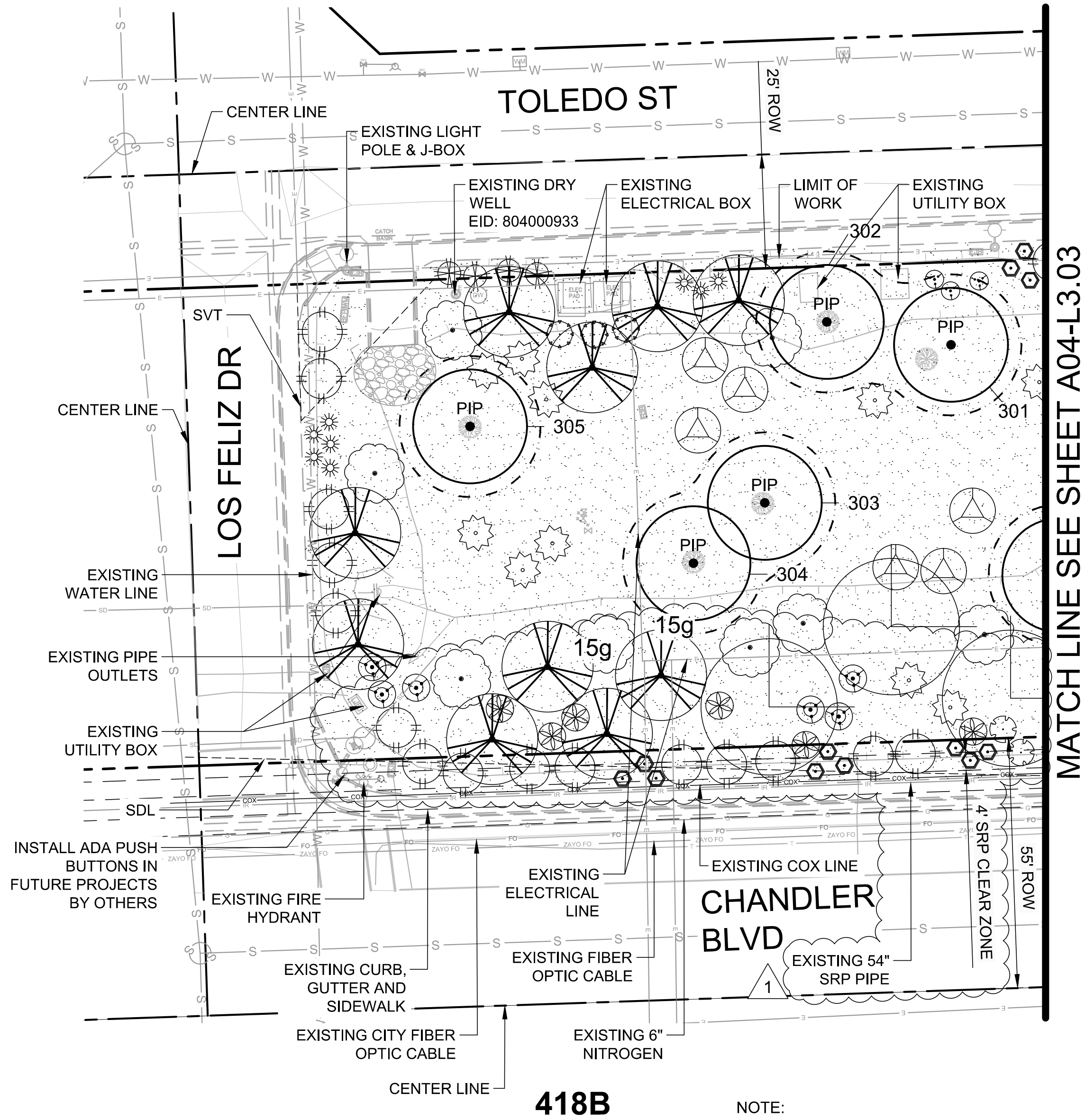
DESIGNED BY: <u>AL, KZ</u>	DRAWN BY: <u>J2</u>
CHECKED BY: <u>SP/JV</u>	APPROVED BY: <u>JV</u>
SCALE: <u>SEE PLAN</u>	DATE: <u>04/22/25</u>
DRAWING NO.: <u>A418B-2.02</u>	SHEET NO.: <u>44</u> OF <u>66</u>

P:\241704\J2\Cart\Sheets\1704-A418-L3.dwg 5/21/2025 12:13:03 PM SETH PLACKO



EXISTING UTILITIES KEY:	
SYMBOL/ LINETYPE	DESCRIPTION
	WATER
	SEWER
	ELECTRICAL
	OVERHEAD ELECTRICAL
	IRRIGATION
	GAS
	TELECO
	FIBER OPTIC CABLE
	CITY FIBER OPTIC CABLE
	COX
	LIGHT POLE
	J-BOX

- NOTE:
- ALL EXISTING UTILITIES, LIGHT POLES, J-BOX & SIGNS ARE TO BE PROTECTED IN PLANS AND CONTRACTOR TO VERIFY LOCATION WITH BLUE STAKE. LIGHTS BURIED DIRECTLY IN THE BASINS WILL BE REPLACED WITH NEW FOUNDATION AND LIGHT POLE WITH LED LIGHT IN THE FUTURE BY OTHERS. CONTRACTOR TO VERIFY, LOCATE AND PROTECT IN PLACE THE CITY OF CHANDLER FIBER OPTIC CABLE LINE & CONDUIT LOCATION.



NOTE:
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CONTRACTOR IS TO CONTACT AIR PRODUCTS
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OF PIPELINE @ 623-693-3153, 480-225-1406, OR
480-899-1177. REFER TO AIR PRODUCT
CONSTRUCTION NOTE ON SHEET A418-1.02.

Landscape Legend - Area 418B

Trees / Palms			Groundcovers		
Symbol	Botanical / Common Name	Size	Symbol	Botanical / Common Name	Size
	Acacia aneura Mulga	15 Gal. 24" Box		Acacia redolens 'Low Boy' Trailing Acacia	5 Gallon
	Olea europaea 'Wilsonii' Wilson's Fruitless Olive	24" Box 36" Box		Convolvulus cneorum Bush Morning Glory	5 Gallon
	Quercus Virginiana 'Heritage' Southern Live Oak	24" Box 36" Box		Eremophila glabra 'Mingenew Gold' Outback Sunrise Emu	5 Gallon
	Existing Tree Protect In Place	Varies	Accents		
Shrubs			Symbol	Botanical / Common Name	Size
	Caesalpinia pulcherrima Red Bird of Paradise	5 Gallon		Agave desmettiana Smooth Agave	5 Gallon
	Buddleja marrubifolia Woolly Butterfly Bush	5 Gallon		Hesperaloe funifera Giant Hesperaloe	5 Gallon
	Leucophyllum frutescens Texas Sage	5 Gallon		Hesperaloe parviflora 'Perpa' Brakelights Red Yucca	5 Gallon
	Senna artemisioides Feathery Senna	5 Gallon		Hesperaloe parviflora 'Yellow' Yellow Yucca	5 Gallon
	Tecoma x 'Orange Jubilee' Orange Jubilee	5 Gallon		Nolina microcarpa Bear Grass	5 Gallon

Landscape Legend - Area 418A

Trees / Palms			
Symbol	Botanical / Common Name	Size	Qty.
	Acacia aneura Mulga	24" Box	37
	Acacia salicina Willow Acacia	36" Box	12
	Chilopsis linearis spp Desert Willow	15 Gal. 24" Box	4 8
	Olea europaea 'Wilsonii' Wilson's Fruitless Olive	36" Box	9
	Pistacia 'Red Push' Red Push Pistache	24" Box	
	Quercus Virginiana 'Heritage' Southern Live Oak	24" Box 36" Box	
	Existing Tree Protect In Place	Varies	
Shrubs			
Symbol	Botanical / Common Name	Size	
	Caesalpinia pulcherrima Red Bird of Paradise	5 Gallon	
	Simmondsia chinensis Jojoba	5 Gallon	
	Buddleja marrubifolia Woolly Butterfly Bush	5 Gallon	
	Leucophyllum frutescens Texas Sage	5 Gallon	
	Ruellia peninsularis Desert Ruellia	5 Gallon	
	Tecoma x 'Orange Jubilee' Orange Jubilee	5 Gallon	

Groundcovers		
Symbol	Botanical / Common Name	Size
	Acacia redolens 'Low Boy' Trailing Acacia	5 Gallon
	Convolvulus cneorum Bush Morning Glory	5 Gallon
	Eremophila glabra 'Mingenew Gold' Outback Sunrise Emu	5 Gallon

Accents		
Symbol	Botanical / Common Name	Size
	Agave americana 'Variegata' Variegated Century Plant	5 Gallon
	Hesperaloe funifera Giant Hesperaloe	5 Gallon
	Hesperaloe parviflora 'Perpa' Brakelights Red Yucca	5 Gallon
	Hesperaloe parviflora 'Yellow' Yellow Yucca	5 Gallon
	Muhlenbergia rigens Deer Grass	5 Gallon
	Nolina microcarpa Bear Grass	5 Gallon

Tree Protection Fencing Legend	
Symbol	Item Description
	Tree / Palm Protection Fencing Refer to Dtls. 1-2, Sheet GN-1.04

SURFACE MATERIALS	
SYMBOL	DESCRIPTION
	DECOMPOSED GRANITE SEE SHT GN-1.03
	RIP RAP SEE SHT GN-1.03



SCALE: 1"=20'

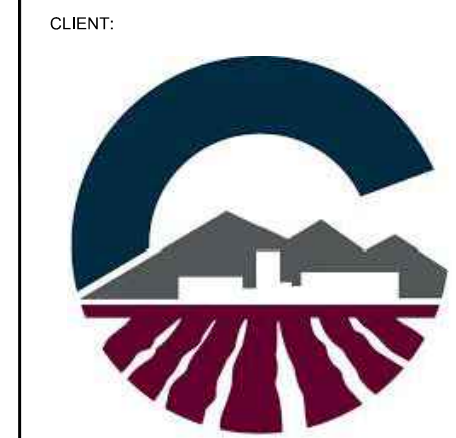


Call at least two full working days before you begin excavation.



4649 E COTTON GIN LOOP B2
PHOENIX, AZ 85040
602.438.2221

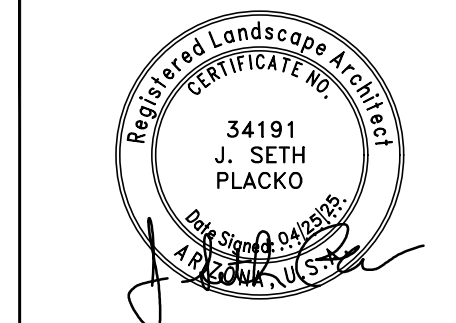
CONSULTANT(S):



TURF TO XERISCAPE PROGRAM PHASE I AREA 418 A & B LANDSCAPE PLANS

05.19.25 ADDENDUM 1

#	DATE	DESCRIPTION
REVISIONS		



DESIGNED BY: AL, KZ DRAWN BY: J2

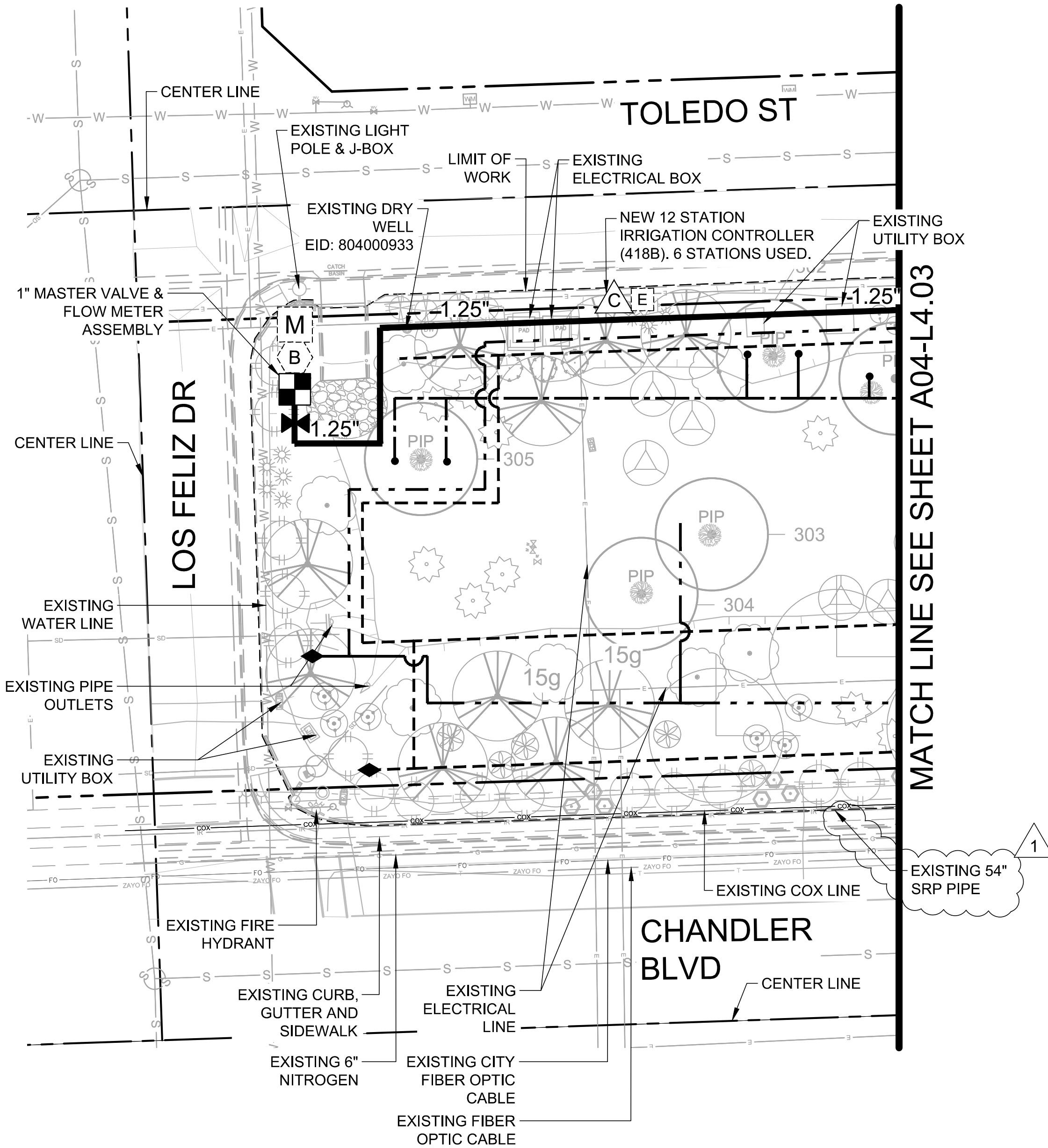
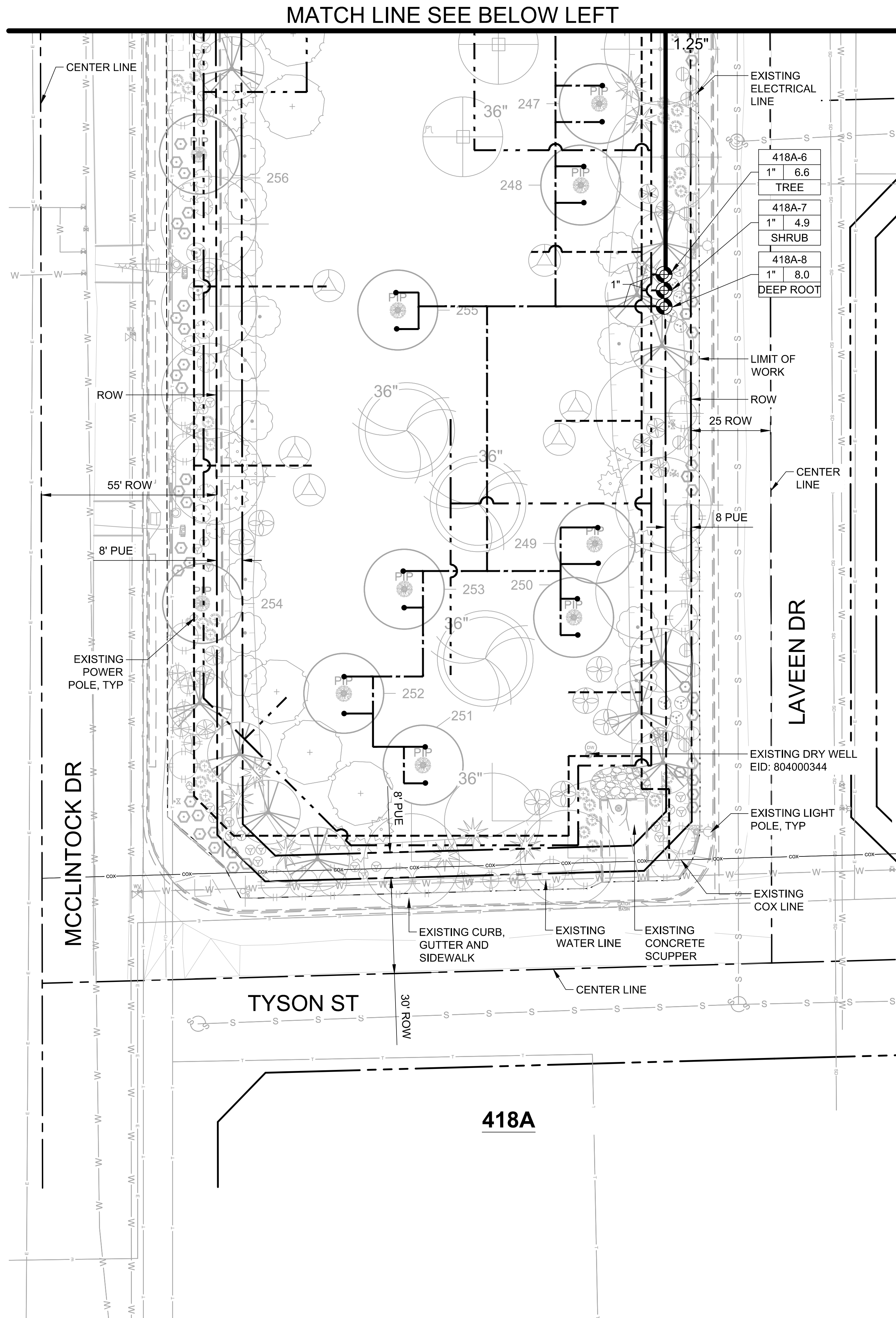
CHECKED BY: SP/JV APPROVED BY: JV

SCALE: SEE PLAN DATE: 04/22/25

DRAWING NO.: SHEET NO.:

A418-3.02 46 OF 66

PROJECT # ST2405.401; CIV24-0141; LJ106660



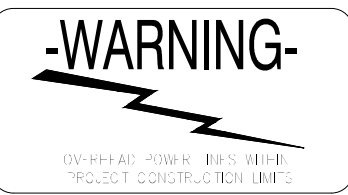
NOTE:
CAUTION 6" NITROGEN PIPELINE.
CONTRACTOR IS TO CONTACT AIR PRODUCTS
48 HOURS PRIOR TO WORKING WITHIN 10FT
OF PIPELINE @ 623-693-3153, 480-225-1406, OR
480-899-1177, REFER TO AIR PRODUCT
CONSTRUCTION NOTE ON SHEET A418-1.02.

IRRIGATION LEGEND	
SYMBOL:	DESCRIPTION:
	EXISTING WATER METER
	EXISTING REDUCED PRESSURE BACKFLOW PREVENTION ASSEMBLY
	EXISTING ELECTRIC METER
	IRRIGATION CONTROLLER
	MASTER VALVE & FLOW METER ASSEMBLY
	ISOLATION BALL VALVE
	DRIP REMOTE CONTROL VALVE ASSEMBLY
	MULTI EMITTER ASSEMBLY
	FLUSH CAP ASSEMBLY
	DEEP ROOT WATERING ASSEMBLY
	MAINLINE PIPE
	DRIP LATERAL PIPE
	DRIP LATERAL PIPE- SHRUBS
	DRIP LATERAL PIPE- TREES
	DRIP LATERAL PIPE- DEEP ROOT TREES
	PIPE SLEEVE (PS)

VALVE KEY:	
	VALVE SIZE
	CONTROLLER/STATION NUMBER
	CONTROL ZONE FLOW (GPM)
	ZONE TYPE:
SHRUB = SHRUBS IN DG	
TREE = TREES IN DG	
DEEP ROOT = SELECTED EXST TREES	

EXISTING UTILITIES KEY:	
SYMBOL/ LINETYPE	DESCRIPTION
	WATER
	SEWER
	ELECTRICAL
	OVERHEAD ELECTRICAL
	IRRIGATION
	GAS
	TELECO
	FIBER OPTIC CABLE
	CITY FIBER OPTIC CABLE
	COX
	LIGHT POLE
	J-BOX

- NOTE:
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 - LIGHTS BURIED DIRECTLY IN THE BASINS WILL BE REPLACED WITH NEW FOUNDATION AND LIGHT POLE WITH LED LIGHT IN THE FUTURE BY OTHERS.
 - CONTRACTOR TO VERIFY, LOCATE AND PROTECT IN PLACE THE CITY OF CHANDLER FIBER OPTIC CABLE LINE & CONDUIT LOCATION.



4649 E COTTON GIN LOOP B2
PHOENIX, AZ 85040
602.438.2221

CONSULTANT(S):



TURF TO XERISCAPE PROGRAM PHASE I AREA 418 A & B IRRIGATION PLANS

05.19.25 ADDENDUM 1

#	DATE	DESCRIPTION
REVISIONS		

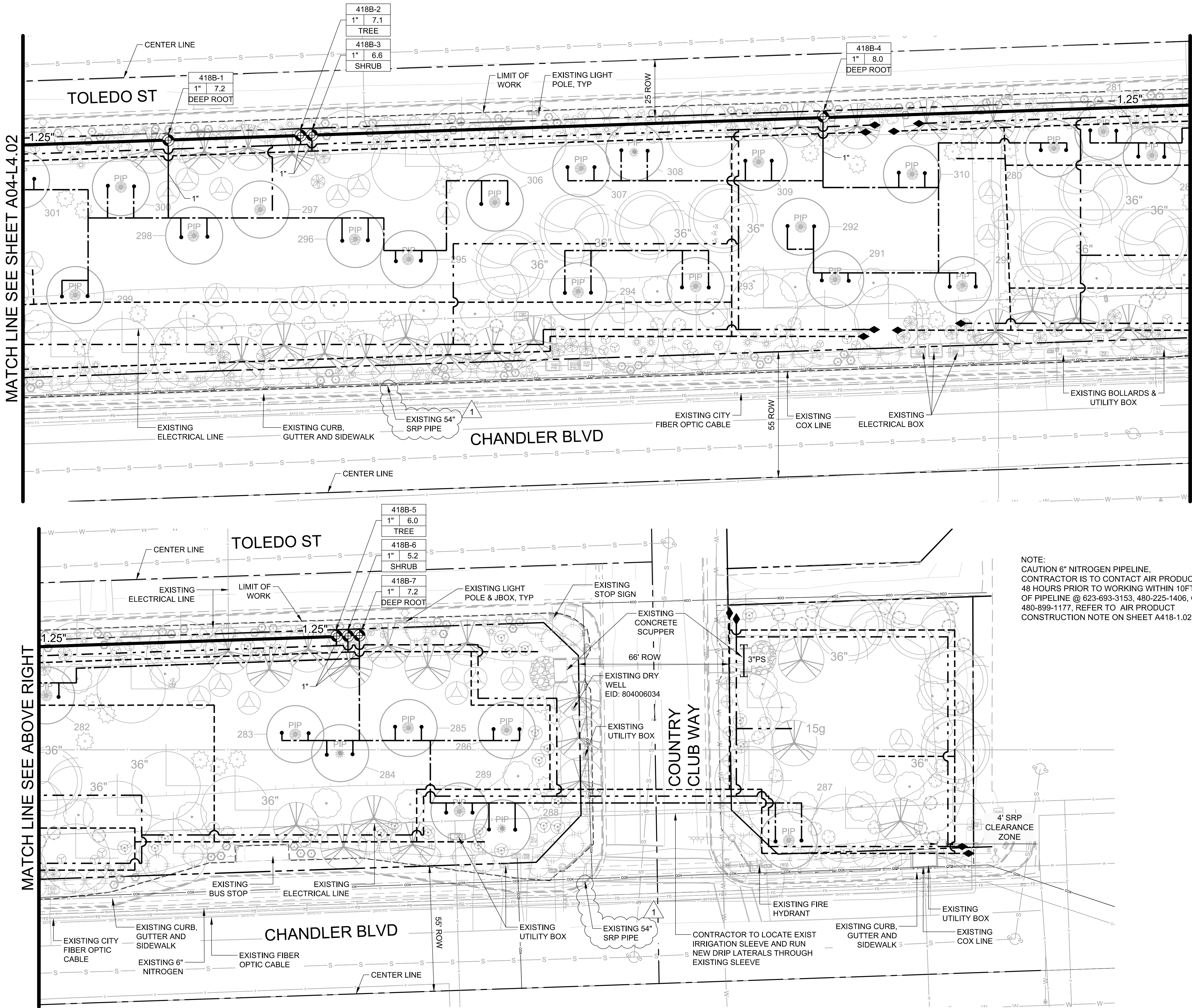


DESIGNED BY: AL, KZ	DRAWN BY: J2
CHECKED BY: SP/JV	APPROVED BY: JV
SCALE: SEE PLAN	DATE: 04/22/25
DRAWING NO.: A418-4.02	SHEET NO.: 49 OF 66

MATCH LINE SEE SHEET A04-L4.02

MATCH LINE SEE ABOVE RIGHT

MATCH LINE SEE BELOW LEFT



IRRIGATION LEGEND	
SYMBOL:	DESCRIPTION:
[M]	EXISTING WATER METER
[B]	EXISTING REDUCED PRESSURE BACKFLOW PREVENTION ASSEMBLY
[E]	EXISTING ELECTRIC METER
[△]	IRRIGATION CONTROLLER
[■]	MASTER VALVE & FLOW METER ASSEMBLY
[◀▶]	ISOLATION BALL VALVE
[⊙]	DRIP REMOTE CONTROL VALVE ASSEMBLY
[•]	MULTI EMITTER ASSEMBLY
[◆]	FLUSH CAP ASSEMBLY
[•]	DEEP ROOT WATERING ASSEMBLY
[X"]	MAINLINE PIPE
[—]	DRIP LATERAL PIPE
[---]	DRIP LATERAL PIPE- SHRUBS
[---]	DRIP LATERAL PIPE- TREES
[---]	DRIP LATERAL PIPE- DEEP ROOT TREES
[X"PS]	PIPE SLEEVE (PS)

VALVE KEY:	
[•]	VALVE SIZE
[•]	CONTROLLER/STATION NUMBER
[•]	CONTROL ZONE FLOW (GPM)
[•]	ZONE TYPE:
[•]	SHRUB = SHRUBS IN DG
[•]	TREE = TREES IN DG
[•]	DEEP ROOT = SELECTED EXST TREES

EXISTING UTILITIES KEY:	
SYMBOL/ LINETYPE	DESCRIPTION
[—]	WATER
[—S—S—]	SEWER
[—E—]	ELECTRICAL
[—OHE—]	OVERHEAD ELECTRICAL
[—R—]	IRRIGATION
[—G—]	GAS
[—T—]	TELECO
[—ZAYO FO—]	FIBER OPTIC CABLE
[—FO—]	CITY FIBER OPTIC CABLE
[—COX—]	COX
[•]	LIGHT POLE
[EJB]	J-BOX

- NOTE:
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 - LIGHTS BURIED DIRECTLY IN THE BASINS WILL BE REPLACED WITH NEW FOUNDATION AND LIGHT POLE WITH LED LIGHT IN THE FUTURE BY OTHERS.
 - CONTRACTOR TO VERIFY, LOCATE AND PROTECT IN PLACE THE CITY OF CHANDLER FIBER OPTIC CABLE LINE & CONDUIT LOCATION.

0 20' 40'

SCALE: 1"=20'

-WARNING-

Call at least two full working days before you begin excavation.

ARIZONA 811

800-488-8111

Arizona Blue Stake, Inc.

800-488-8111

J2 Design

4649 E COTTON GIN LOOP B2
PHOENIX, AZ 85040
602.438.2221

CONSULTANT(S):

CLIENT:

CITY OF CHANDLER

TURF TO XERISCAPE PROGRAM

PHASE I

AREA 418B IRRIGATION PLANS

DESIGNED BY: AL, KZ

DRAWN BY: J2

CHECKED BY: SP/JV

APPROVED BY: JV

SCALE: SEE PLAN

DATE: 04/22/25

DRAWING NO.: A418-4.03

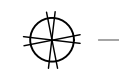
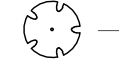
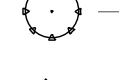
SHEET NO.: 50 OF 66

PROJECT # ST2405.401; CIV24-0141; LJ106660

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Landscape Legend - Area 419

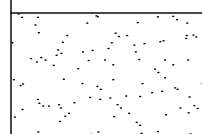
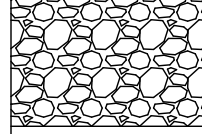
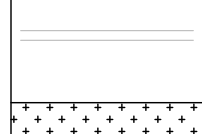
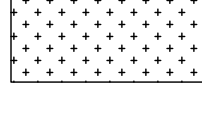
Trees / Palms					
Symbol	Botanical / Common Name	Size	Qty.	Remarks	
	Acacia aneura Mulga	15 Gal. 24" Box	5 7	15 Gal. Standard H 4'-5" W 1'-2" Cal. 0.5"-0.75"	24": Standard H 6'-7" W 2'-3" Cal. 0.75"-1.25"
	Acacia salicina Willow Acacia	36" Box	16	36": Standard H 9'-11" W 5'-7" Cal. 2.0"-2.5"	36": Standard H 9'-11" W 5'-7" Cal. 2.0"-2.5"
	Chilopsis linearis spp Desert Willow	15 Gal. 24" Box	9 61	15 Gal. Multi H 4'-5" W 2'-3"	24": Multi H 5'-7" W 3'-4"
	Olea europaea 'Wilsonii' Wilson's Fruitless Olive	36" Box	31	36": Multi H 8'-10" W 5'-7"	
	Pistacia 'Red Push' Red Push Pistache	24" Box 36" Box	9 8	24": Standard H 7'-9" W 2.5'-3.5" Cal. 1.0"-1.5"	36": Standard H 12'-14" W 6'-8" Cal. 3"-4"
	Quercus Virginiana 'Heritage' Southern Live Oak	24" Box 36" Box	21 17	24": Standard H 7'-9" W 3'-4" Cal. 1.0"-1.5"	36": Standard H 10'-12" W 5'-7" Cal. 1.75"-2.5"
	Existing Tree Protect In Place	Varies	101	Varies	

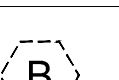
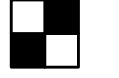
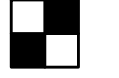
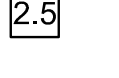
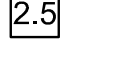
Shrubs				
Symbol	Botanical / Common Name	Size	Qty.	Remarks
	Caesalpinia pulcherrima Red Bird of Paradise	5 Gallon	95	Full Past Can
	Simmondsia chinensis Jojoba	5 Gallon	25	Full Past Can
	Buddleja marrubifolia Woolly Butterfly Bush	5 Gallon	43	Full Past Can
	Leucophyllum frutescens Texas Sage	5 Gallon	100	Full Past Can
	Ruellia peninsularis Desert Ruellia	5 Gallon	49	Full Past Can
	Senna artemisioides Feathery Senna	5 Gallon	27	Full Past Can
	Tecoma x 'Orange Jubilee' Orange Jubilee	5 Gallon	56	Full Past Can

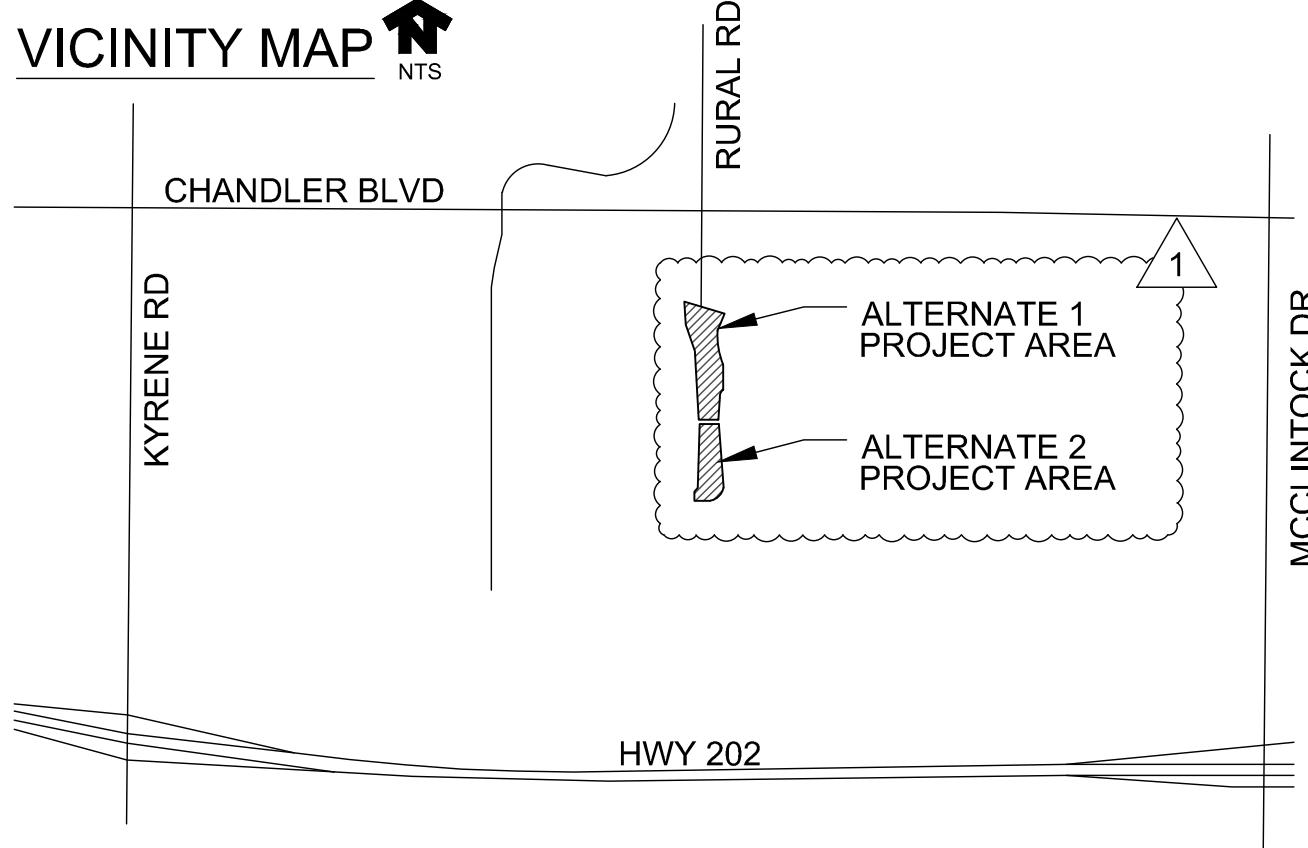
Groundcovers				
Symbol	Botanical / Common Name	Size	Qty.	Remarks
	Acacia redolens 'Low Boy' Trailing Acacia	5 Gallon	59	Full Past Can
	Convolvulus cneorum Bush Morning Glory	5 Gallon	221	Full Past Can
	Eremophila glabra 'Mingenew Gold' Outback Sunrise Emu	5 Gallon	61	Full Past Can

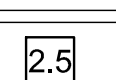
Accents				
Symbol	Botanical / Common Name	Size	Qty.	Remarks
	Agave americana 'Variegata' Variegated Century Plant	5 Gallon	41	Full Past Can
	Agave desmettiana Smooth Agave	5 Gallon	31	Full Past Can
	Hesperaloe parviflora 'Perrpa' Brakelights Red Yucca	5 Gallon	25	Full Past Can
	Hesperaloe parviflora 'Yellow' Yellow Yucca	5 Gallon	66	Full Past Can
	Hesperaloe funifera Giant Hesperaloe	5 Gallon	17	Full Past Can
	Muhlenbergia rigens Deer Grass	5 Gallon	127	Full Past Can
	Nolina microcarpa Bear Grass	5 Gallon	65	Full Past Can

SURFACE MATERIALS LEGEND AREA 419

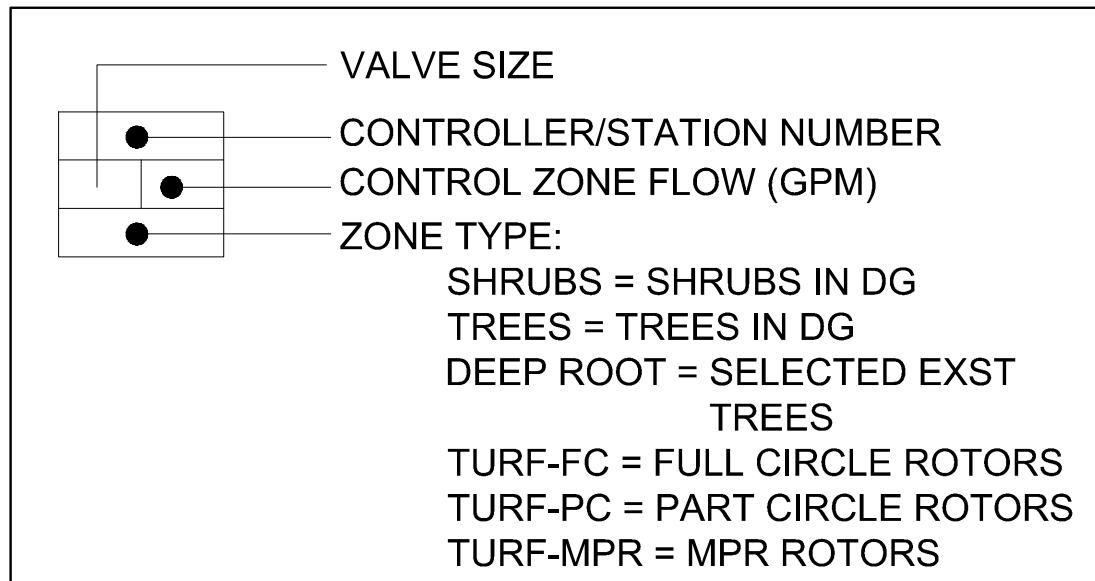
SYMBOL	DESCRIPTION	COLOR	QUANTITY
	Decomposed Granite	Desert Gold or Approved Equal, 1 1/4" Screened MIN., 2 1/2" Depth	311,361 SF.
	Riprap	Desert Gold or Approved Equal, 3" - 6", 6" Depth	2,048 SF.
	Concrete Header	8" x 6" Concrete Header	2,059 LF.
	Turf Grass Seed	'Rio' F1 Hybrid Bermuda	57,345 SF.

IRRIGATION LEGEND				
DETAIL:	SYMBOL:	DESCRIPTION:	REMARKS:	QTYS:
		EXISTING WATER METER	PROTECT IN PLACE	N/A
		EXISTING REDUCED PRESSURE BACKFLOW PREVENTION ASSEMBLY	PROTECT IN PLACE	N/A
		EXISTING ELECTRIC METER	PROTECT IN PLACE	N/A
		IRRIGATION CONTROLLERS '419A' - 24 STATIONS '419B' - 12 STATIONS	BASELINE #BL-3200P-R12/ R24-CM 12 OR 24 STATION CONVENTIONALLY WIRED CONTROLLER WITH 16-GAUGE POWDERCOATED STEEL PEDESTAL MOUNT ENCLOSURE WITH #BL-CLOUD-LTE-ESIM MODEM, OMNI DIRECTIONAL ANTENNA KIT #BL-CM-OMNI WITH 50' ANTENNA CABLE #BL-CX-CBL50 AND IN-LINE SURGE ARRESTOR #BL-CX-LA-X; INCLUDE BASEMANAGER PLUS 10 YEAR SERVICE #BL-BMW2-PLUS-10Y WITH POST CONSTRUCTION EQUIPMENT SURVEY BY CONTRACTOR; GROUND CONTROLLER WITH POWER SUPPLY GROUND; CELLULAR SITE SURVEY SHALL DETERMINE CELL PROVIDER, CELL ANTENNA TYPE, AND CONFIRM ANTENNA LOCATION.	419A - 1 EA 24 STATION 419B - 1 EA 12 STATION
		MASTER VALVE & FLOW METER ASSEBLY	MASTER VALVE: 1.0" HUNTER IVC-101G GLASS-FILLED NYLON VALVE WITH SCURBBER & FLOW CONTROL (NORMALLY CLOSED); TWO SCH 80 PVC UNIONS SIZED TO MATCH; CHRISTY'S YELLOW MAXI SIZE WIRE ID TAG; CARSON JUMBO TAN COLOR RECTANGULAR VALVE BOX #1220-12; CONVENTIONAL WIRES TO CONTROLLER SHALL BE #14 AWG BLUE CONTROL, WHITE COMMON, & ONE GRAY SPARE TO MV & FS. FLOW METER: CST FSI-T10-001 1.0" PVC TEE-STYLE FLOW METER, CHRISTY'S YELLOW MAXI SIZE WIRE ID TAG; IN CARSON TAN COLOR 10" ROUND VALVE BOX #910-12; ROUTE WIRES TO CONTROLLER ENTIRELY WITHIN 1.25" SCH 40 PVC CONDUIT.	419A- 2" - 1 EA 419B- 1" - 1 EA
		ISOLATION BALL VALVE	SPEARS SCH 80 PVC BALL VALVE WITH FULL PORT TRUE UNION; INSTALL IN CARSON #1220 JUMBO TAN VALVE BOX WITH BOLT DOWN T-COVER EMBOSSED WITH 2" STENCIL LETTERS PER VALVE BOX INSTALLATION DETAIL. SIZE TO MATCH PIPE SIZE.	1.5" - 4 EA 2.0" - 2 EA
		DRIP REMOTE CONTROL VALVE ASSEMBLY	HUNTER DRIP KIT #ICZ-101-LF, 1" GLOBE VALVE, 1" WYE FILTER (150 MESH STAINLESS STEEL SCREEN) AND PRESSURE REGULATOR (25 PSI); 1" SPEARS SCH 80 PVC BALL VALVE WITH FULL PORT TRUE UNION; SCH. 80 PVC NIPPLES & FITTINGS; CHRISTY'S STANDARD YELLOW ID TAG WITH CONTROLLER LETTER & STATION NUMBER (IE: A-1) PRINTED ONE SIDE; INSTALL IN CARSON #1220 TAN JUMBO VALVE BOX WITH BOLT DOWN T-COVER EMBOSSED WITH CONTROLLER LETTER & STATION NUMBER (TO MATCH ID TAG);	16 EA
		TURF REMOTE CONTROL VALVE ASSEMBLY	HUNTER ICVXXXG GLASS FILLED NYLON GLOBE STYLE BODY VALVE (SIZE PER PLANS) & EPDM DIAPHRAGM WITH 1" SPEARS SCH 80 PVC BALL VALVE WITH FULL PORT TRUE UNION; SCH. 80 PVC NIPPLES & FITTINGS; CHRISTY'S STANDARD YELLOW ID TAG WITH CONTROLLER LETTER & STATION NUMBER (IE: A-1) PRINTED ONE SIDE; INSTALL IN CARSON #1220 TAN JUMBO VALVE BOX WITH BOLT DOWN T-COVER EMBOSSED WITH CONTROLLER LETTER & STATION NUMBER (TO MATCH ID TAG);	1.5" - 5 EA 2.0" - 2 EA
		TURF ROTORS # = NOZZLE NUMBER	HUNTER I-20 #I-20-06-SS-PRB ROTOR BODY WITH 6" STAINLESS STEEL POP-UP RISER, 3/4" INLET, DRAIN CHECK VALVE, 45 PSI PRESSURE REGULATING BODY, AND STANDARD COLOR CODED NOZZLES; INSTALL ON HUNTER #HSJ-0 PRE-FABRICATED SWING JOINTS WITH 12" LAY LENGTH (SWING JOINTS TO BE THE SAME SIZE AS SPRINKLER HEAD INLET); SEE 'SPRINKLER LEGEND' FOR ADDITIONAL NOZZLE SPECIFICATIONS	83 EA
	NOT SHOWN	MULTI EMITTER ASSEMBLY	BOWSMITH #ML210 1.0 GPH BLUE COLOR AND #ML220 2.0 GPH RED COLOR MULTI-PORT EMITTERS WITH 1/2" FPT INLET; 1/2" SCH 40 FLEX PIPE RISER; 1/4" VINYL DISTRIBUTION TUBES AT 5'-0" MAX. LENGTH; IN 6" NDS TAN COLOR ROUND EMITTER BOX (SEE 'EMITTER NOTE' #4). SEE 'EMITTER SCHEDULE' FOR REQ'D FLOW & QTY. PER PLANT	830 EA
		DEEP ROOT WATERING ASSEMBLY	HUNTER #RZWS-36-50-CV 36" DEPTH ROOT ZONE WATERING SYSTEM WITH 0.25 GPM BUBBLER AND FACTORY INSTALLED CHECK VALVE; INCLUDE OPTIONAL FIELD INSTALLED FILTER FABRIC SLEEVE #RZWS-SLEEVE.	10 EA
		FLUSH CAP ASSEMBLY	3/4" API PVC BALL VALVE WITH 3/4" SWIVEL FHT INPUT & 3/4" MHT OUTPUT; 3/4" PVC FLEX PIPE RISER WITH TWO 3/4" SCH 40 PVC MALE ADAPTERS; INSTALL IN CARSON #910 10" ROUND VALVE BOX WITH BOLT DOWN T-COVER EMBOSSED WITH 2" STENCIL LETTERS PER VALVE BOX INSTALLATION DETAIL IN THIS SET. (TWO END CAPS MAX. MAY BE INSTALLED WITHIN SAME VALVE BOX IF LOCATED IN SAME VICINITY)	42 EA
	#	MAINLINE PIPE	SCH 40 PVC PIPE WITH SCH 80 SOLVENT WELD FITTINGS, SIZE PER PLAN	1.5" - 1,816 LF 2.0" - 317 LF 2.5" - 528 LF
	#	TURF LATERAL PIPE	SCHEDULE 40 PVC SOLVENT WELD PIPE WITH SCHEDULE 80 FITTINGS (SIZE PER PLAN)	.75" - 598 LF 1.0" - 984 LF 1.25" - 1,147 LF 1.5" - 212 LF 2" - 271 LF 2.5" - 12 LF
		DRIP LATERAL PIPE	1" SCHEDULE 40 PVC SOLVENT WELD PIPE WITH SCHEDULE 40 FITTINGS	37 LF
		DRIP LATERAL PIPE- SHRUBS	3/4" SCHEDULE 40 PVC SOLVENT WELD PIPE WITH SCHEDULE 40 FITTINGS	6,877 LF
		DRIP LATERAL PIPE- TREES	3/4" SCHEDULE 40 PVC SOLVENT WELD PIPE WITH SCHEDULE 40 FITTINGS	7,660 LF
		DEEP ROOT LATERAL PIPE	3/4" SCHEDULE 40 PVC SOLVENT WELD PIPE WITH SCHEDULE 40 FITTINGS	316 LF
		PIPE SLEEVE (PS)	SCHEDULE 40 PVC PIPE (WHITE); INSTALL SLEEVES AT DEEPEST PIPE DEPTH WITHIN SLEEVE OR 24" MIN. COVER UNDER DRIVING SURFACES; ANY SLEEVES NOTED FOR BORING IS CONSIDERED INCIDENTAL TO SLEEVE COST	4"PS= 15 LF 6"PS= 55 LF

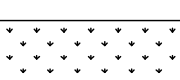
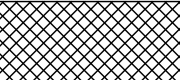


SPRINKLER LEGEND							
LARGE ROTORS:							
SYMBOL	MODEL	NOZZLE	ARC PATTERN	DESIGN PRESSURE	RADIUS	FLOW GPM	PRECIP RATE (IN / HR)
	I-20-06-SS-PRB	2.5	QUARTER / HALF CIRCLE	45 PSI	35 FT	2.5	.39
	I-20-06-SS-PRB	2.5	FULL CIRCLE	45 PSI	35 FT	2.5	.195
	I-20-06-SS-PRB	5.0	QUARTER / HALF CIRCLE	45 PSI	42 FT	5.0	.55
	I-20-06-SS-PRB	5.0	FULL CIRCLE	45 PSI	42 FT	5.0	.275
SMALL ROTORS:							
SYMBOL	MODEL	NOZZLE	ARC PATTERN	DESIGN PRESSURE	RADIUS	FLOW GPM	PRECIP RATE (IN / HR)
	I-20-06-SS-PRB	MPR-25	360° CIRCLE	45 PSI	25 FT	3.82	0.59
	I-20-06-SS-PRB	MPR-30	90° CIRCLE	45 PSI	30 FT	1.40	0.60
	I-20-06-SS-PRB	MPR-30	180° CIRCLE	45 PSI	30 FT	2.96	0.63
	I-20-06-SS-PRB	MPR-30	360° CIRCLE	45 PSI	30 FT	5.78	0.62
	I-20-06-SS-PRB	MPR-35	90° CIRCLE	45 PSI	35 FT	1.92	0.60
	I-20-06-SS-PRB	MPR-35	180° CIRCLE	45 PSI	35 FT	3.81	0.60
	I-20-06-SS-PRB	MPR-35	360° CIRCLE	45 PSI	35 FT	7.58	0.60

VALVE KEY:



DEMOLITION KEY NOTES AREA 419

1	REMOVE CONCRETE HEADER (1,987 LF)	----
2	REMOVE & DISPOSE OF TURF (339,357 SF.)	
3	REMOVE DG (33,847 SF.)	
7	REMOVE IRRIGATION CONTROLLER (2 EA)	



4649 E COTTON GIN LOOP B2
PHOENIX, AZ 85040
602.438.2221

CONSULTANT(S):

CLIENT:



TURF TO XERISCAPE PROGRAM PHASE I AREA 419 - LEGENDS AND QUANTITIES

05.19.25 ADDENDUM 1

#	DATE	DESCRIPTION
		REVISIONS



DESIGNED BY: AL, KZ DRAWN BY: J2

CHECKED BY: SP/JV APPROVED BY: JV

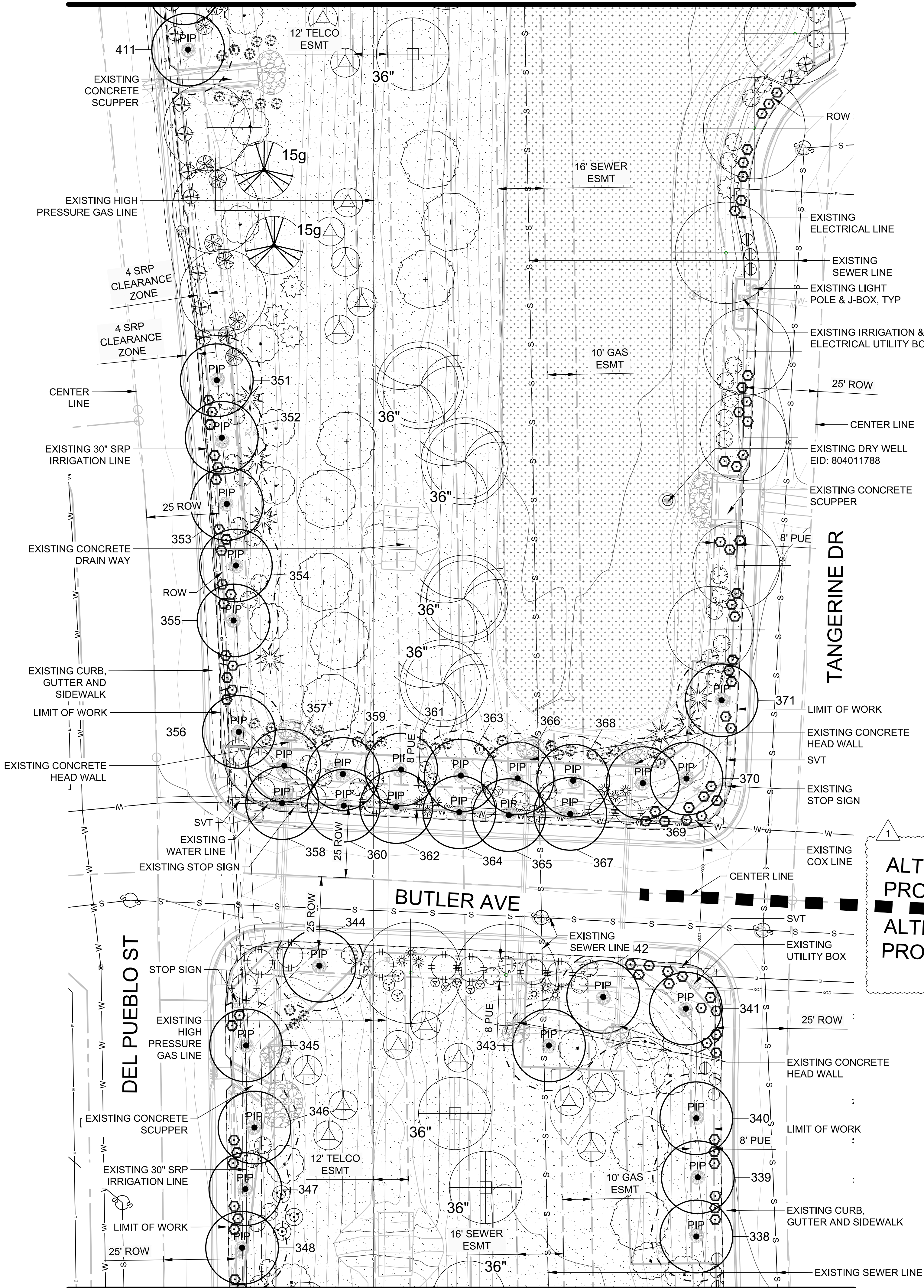
SCALE: NTS DATE: 04/22/25

DRAWING NO.: SHEET NO.:

A419-1.01 51 OF 66

PROJECT # ST2405.401; CIV24-0141; LJ106660

MATCH LINE SEE SHEET A06-L3.02



MATCH LINE SEE SHEET A06-L3.04

EXISTING UTILITIES KEY:	
SYMBOL/ LINETYPE	DESCRIPTION
	WATER
	SEWER
	ELECTRICAL
	OVERHEAD ELECTRICAL
	IRRIGATION
	GAS
	TELECO
	FIBER OPTIC CABLE
	CITY FIBER OPTIC CABLE
	COX
	LIGHT POLE
	J-BOX

- NOTE:
- ALL EXISTING UTILITIES, LIGHT POLES, J-BOX & SIGNS ARE TO BE PROTECTED IN PLANS AND CONTRACTOR TO VERIFY LOCATION WITH BLUE STAKE.
 - LIGHTS BURIED DIRECTLY IN THE BASINS WILL BE REPLACED WITH NEW FOUNDATION AND LIGHT POLE WITH LED LIGHT IN THE FUTURE BY OTHERS.

SURFACE MATERIALS	
SYMBOL	DESCRIPTION
	DECOMPOSED GRANITE SEE SHT GN-1.03
	RIP RAP SEE SHT GN-1.03
	8" X 6" CONCRETE HEADER, SEE DETAIL 9 ON SHT LD-1.01
	TURF GRASS SEED 'RIO' F1 HYBRID BERMUDA

Landscape Legend - Area 419

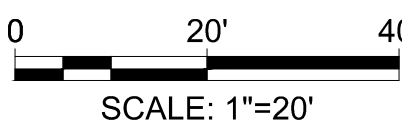
Trees / Palms		
Symbol	Botanical / Common Name	Size
	Acacia aneura Mulga	15 Gal. 24" Box
	Acacia salicina Willow Acacia	36" Box
	Chilopsis linearis spp Desert Willow	15 Gal. 24" Box
	Olea europaea 'Wilsonii' Wilson's Fruitless Olive	36" Box
	Pistacia 'Red Push' Red Push Pistache	24" Box 36" Box
	Quercus Virginiana 'Heritage' Southern Live Oak	24" Box 36" Box
	Existing Tree Protect In Place	Varies

Shrubs		
Symbol	Botanical / Common Name	Size
	Caesalpinia pulcherrima Red Bird of Paradise	5 Gallon
	Simmondsia chinensis Jojoba	5 Gallon
	Buddleja marrubifolia Woolly Butterfly Bush	5 Gallon
	Leucophyllum frutescens Texas Sage	5 Gallon
	Ruellia peninsularis Desert Ruellia	5 Gallon
	Senna artemisioides Feathery Senna	5 Gallon
	Tecoma x 'Orange Jubilee' Orange Jubilee	5 Gallon

Groundcovers		
Symbol	Botanical / Common Name	Size
	Acacia redolens 'Low Boy' Trailing Acacia	5 Gallon
	Convolvulus oneorum Bush Morning Glory	5 Gallon
	Eremophila glabra 'Mingenew Gold' Outback Sunrise Emu	5 Gallon

Accents		
Symbol	Botanical / Common Name	Size
	Agave americana 'Variegata' Variegated Century Plant	5 Gallon
	Agave desmettiana Smooth Agave	5 Gallon
	Hesperaloe parviflora 'Perpa' Brakeleights Red Yucca	5 Gallon
	Hesperaloe parviflora 'Yellow' Yellow Yucca	5 Gallon
	Hesperaloe funifera Giant Hesperaloe	5 Gallon
	Muhlenbergia rigens Deer Grass	5 Gallon
	Nolina microcarpa Bear Grass	5 Gallon

Tree Protection Fencing Legend	
Symbol	Item Description
	Tree / Palm Protection Fencing Refer to Dtls. 1-2, Sheet GN-1.04



SCALE: 1"=20'



CONSULTANT(S):

CLIENT:

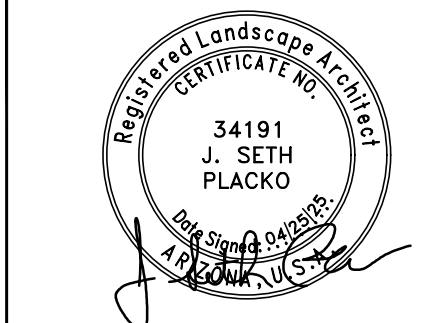


TURF TO XERISCAPE PROGRAM
PHASE I

AREA 419 - LANDSCAPE PLANS

05.19.25 ADDENDUM 1

#	DATE	DESCRIPTION
REVISIONS		



DESIGNED BY: AL, KZ DRAWN BY: J2

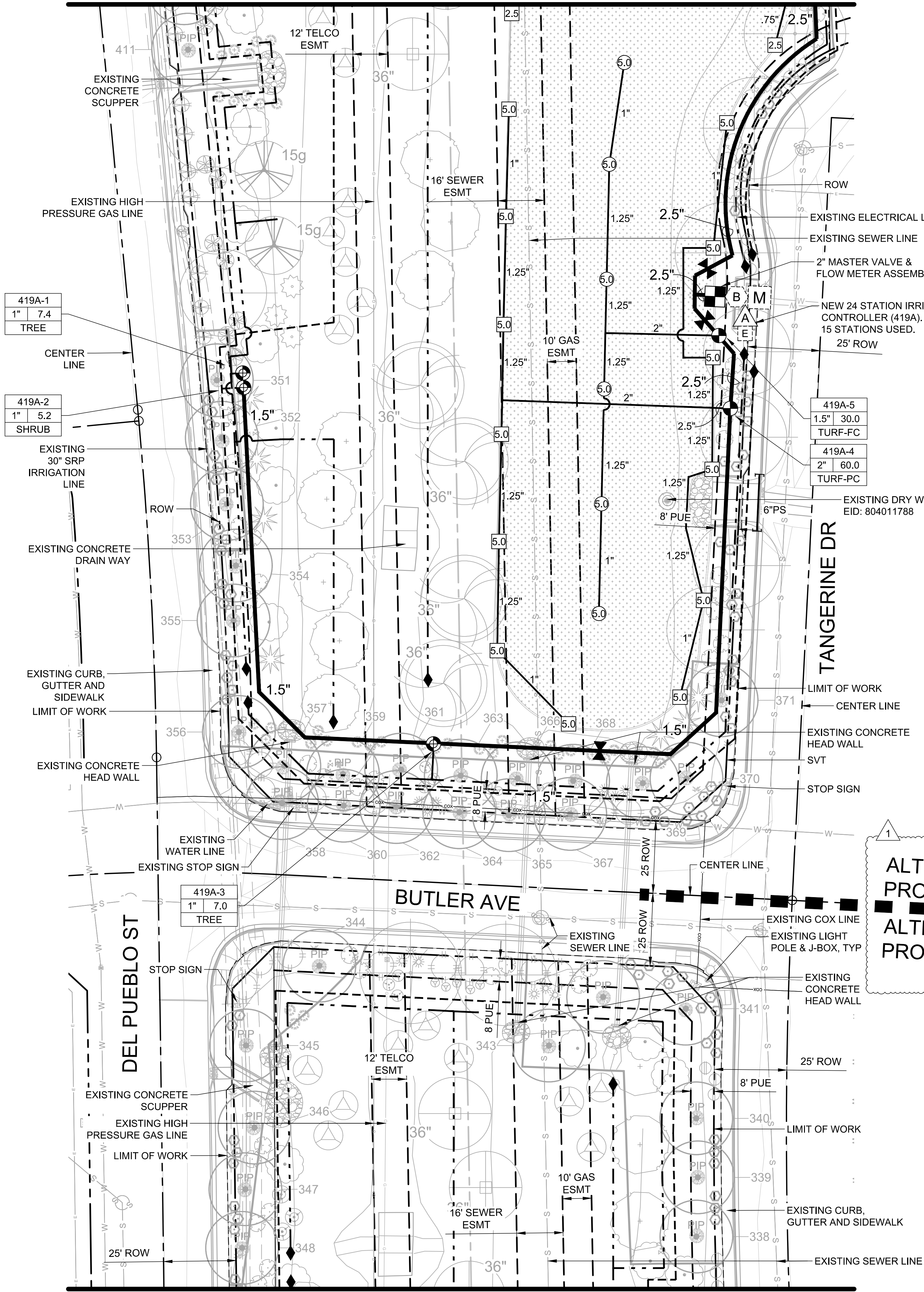
CHECKED BY: SP/JV APPROVED BY: JV

SCALE: SEE PLAN DATE: 04/22/25

DRAWING NO.: A419-3.03 SHEET NO.: 56 OF 66

PROJECT # ST2405.401; CIV24-0141; LJ106660

MATCH LINE SEE SHEET A419-L4.02



MATCH LINE SEE SHEET A419-L4.04

EXISTING UTILITIES KEY:	
SYMBOL/ LINETYPE	DESCRIPTION
	WATER
	SEWER
	ELECTRICAL
	OVERHEAD ELECTRICAL
	IRRIGATION
	GAS
	TELECO
	FIBER OPTIC CABLE
	CITY FIBER OPTIC CABLE
	COX
	LIGHT POLE
	J-BOX

- NOTE:
- ALL EXISTING UTILITIES, LIGHT POLES, J-BOX & SIGNS ARE TO BE PROTECTED IN PLANS AND CONTRACTOR TO VERIFY LOCATION WITH BLUE STAKE.
 - LIGHTS BURIED DIRECTLY IN THE BASINS WILL BE REPLACED WITH NEW FOUNDATION AND LIGHT POLE WITH LED LIGHT IN THE FUTURE BY OTHERS.

IRRIGATION LEGEND	
SYMBOL:	DESCRIPTION:
	EXISTING WATER METER
	EXISTING REDUCED PRESSURE BACKFLOW PREVENTION ASSEMBLY
	EXISTING ELECTRIC METER
	IRRIGATION CONTROLLER
	MASTER VALVE & FLOW METER ASSEMBLY
	ISOLATION BALL VALVE
	DRIP REMOTE CONTROL VALVE ASSEMBLY
	TURF REMOTE CONTROL VALVE ASSEMBLY
	LARGE TURF ROTOR
	SMALL TURF ROTOR- MPR
NOT SHOWN	MULTI EMITTER ASSEMBLY
	FLUSH CAP ASSEMBLY
	MAINLINE PIPE
	TURF LATERAL PIPE
	DRIP LATERAL PIPE- SHRUBS
	DRIP LATERAL PIPE- TREES
	DRIP LATERAL PIPE- DEEP ROOT TREES
	PIPE SLEEVE (PS)

VALVE KEY:	
	VALVE SIZE
	CONTROLLER/STATION NUMBER
	CONTROL ZONE FLOW (GPM)
	ZONE TYPE:
SHRUB = SHRUBS IN DG	
TREE = TREES IN DG	
DEEP ROOT = SELECTED EXST TREES	
TURF-FC = FULL CIRCLE ROTORS	
TURF-PC = PART CIRCLE ROTORS	
TURF-MPR = MPR ROTORS	

4649 E COTTON GIN LOOP B2
PHOENIX, AZ 85040
602.438.2221

CONSULTANT(S):

CLIENT:

CITY OF CHANDLER

TURF TO XERISCAPE PROGRAM

PHASE I

AREA 419 - IRRIGATION PLANS

05.19.25 ADDENDUM 1

#	DATE	DESCRIPTION
REVISIONS		

DESIGNED BY: AL, KZ
DRAWN BY: J2
CHECKED BY: SP/JV
APPROVED BY: JV
SCALE: SEE PLAN
DATE: 04/22/25
DRAWING NO.: A419-4.03
SHEET NO.: 60 OF 66

PROJECT # ST2405.401; CIV24-0141; LJ106660



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

CONSTRUCTION AGREEMENT

**TURF TO XERISCAPE PROGRAM, PHASE I
CITY PROJECT NO.: ST2405.401**

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**

CITY OF CHANDLER, ARIZONA

TURF TO XERISCAPE PROGRAM, PHASE I

CITY PROJECT NO.: ST2405.401

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CONSTRUCTION SERVICES AGREEMENT
PROJECT NO.: ST2405.401

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 ELS Construction, 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: 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:	ELS Construction, Inc.
Mailing Address:	3329 East Southern Avenue Phoenix, AZ 85040
Physical Address:	3329 East Southern Avenue Phoenix, AZ 85040
Arizona Roc No.:	312090
Federal Tax Id No.:	86-0398337
State Where Organized:	Arizona
Business Organization:	corporation
Statutory Agent Name:	Jimmy Castine
Statutory Agent Mailing Address:	3329 East Southern Avenue Phoenix, AZ 85040
Statutory Agent Physical Address:	3329 East Southern Avenue Phoenix, AZ 85040
Contractor's Authorized Project Representative:	
Name:	John Lupoe
Title:	Director of Preconstruction
Phone:	602-243-1106 (office), 602-390-7423 (mobile)
Email:	jlupoe@evergreenaz.com

PROJECT DESCRIPTION:

The City of Chandler Turf to Xeriscape project consists of converting turf grass to xeriscape landscape in eight city-maintained sites within the City of Chandler.

PROJECT LOCATION:

Eight locations within the City of Chandler.

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.

- 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.

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 300 Calendar Days (including Substantial Completion by 270 Calendars Days and Final Acceptance by 300 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.

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

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 \$4,645,925.43.

- 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.

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

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

"CONTRACTOR"
ELS CONSTRUCTION, INC

Mayor

John Lupoe June 9, 2025
Signature Date

RECOMMENDED BY:

John Lupoe
Print Name

Daniel Haskins June 9, 2025
Daniel Haskins, P.E.
CIP City Engineer

Chief Estimator
Title
jlupoe@evergreenaz.com
Signer Email Address

APPROVED AS TO FORM:

City Attorney

ATTEST:

City Clerk Seal

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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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

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 or 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, underpinning, 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 timetable 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, etc. 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 "Indemnitor") must indemnify, save, and hold harmless the City and its officers, officials, agents, and employees (collectively "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) (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 Indemnitee from and against any and all Claims, except those arising solely from Indemnitee'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 Indemnitee 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 from 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 on 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 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 from 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.

General Conditions Appendices

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.

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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:

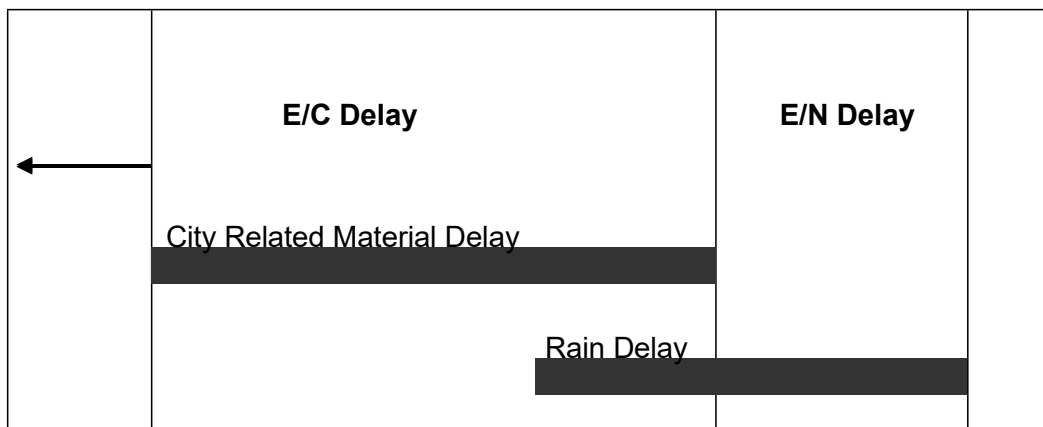
When two or more delays occur simultaneously or overlap, each delay is analyzed separately to determine its impact on the overall project completion date based on when that delay started. Once again, only those delays which actually extend the Agreement completion time are considered as delays. The concurrent 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-

General Conditions Appendix 1

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.

General Conditions Appendix 1

- 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

General Conditions

Appendix 1

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.

General Conditions

Appendix 1

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

General Conditions Appendix 1

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.

General Conditions Appendix 2

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

General Conditions Appendix 2

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: TURF TO XERISCAPE PROGRAM, PHASE I

CITY PROJECT NUMBER: ST2405.401

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: TURF TO XERISCAPE PROGRAM, PHASE I
City Project No.: ST2405.401

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 **TURF TO XERISCAPE PROGRAM, PHASE I, ST2405.401** 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__.

AGENT OF RECORD

PRINCIPAL SEAL

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 **TURF TO XERISCAPE PROGRAM, PHASE I, ST2405.401** 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 _____	
	_____	SEAL
	SURETY	

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:	TURF TO XERISCAPE PROGRAM, PHASE I		
CITY PROJECT NO.:	ST2405.401		
<i>If Federally Funded:</i>			
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:

<u>FINAL ACCEPTANCE DATE:</u>	
--------------------------------------	--

PRIME CONTRACTOR:

FIRM NAME:			
PRINCIPAL:			
TITLE:			
SIGNATURE:		DATE:	

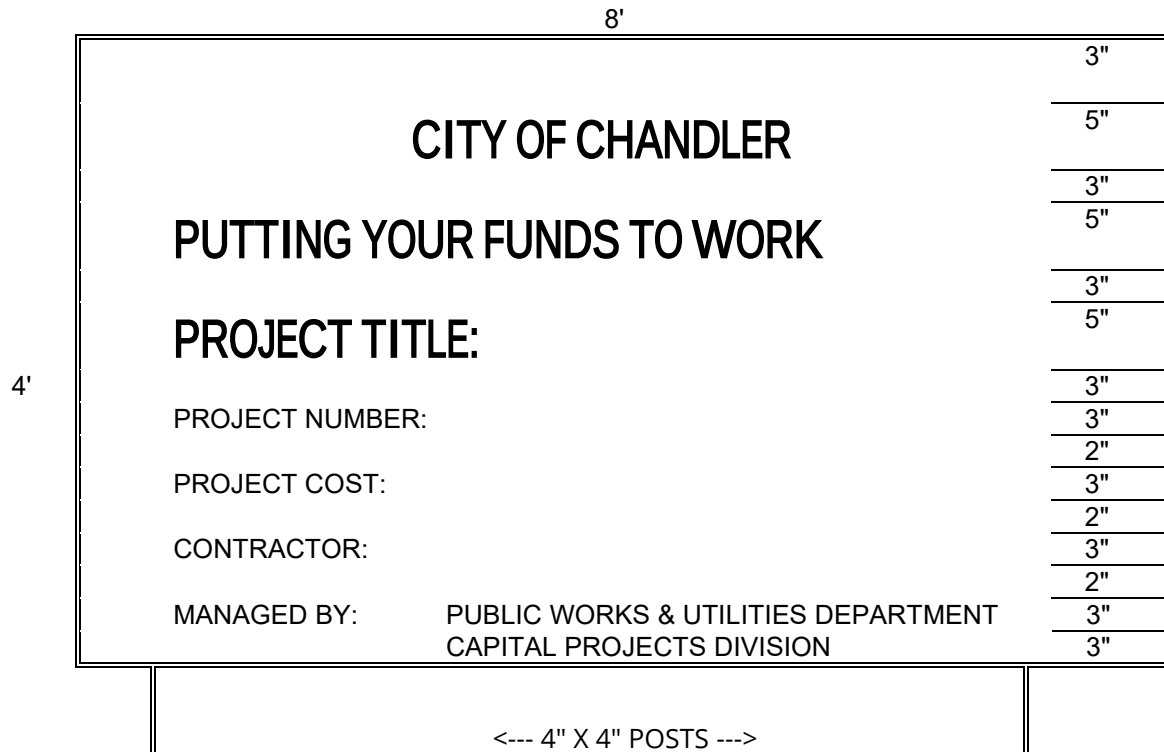
CERTIFIED BY **[INSERT NAME AND TITLE OF PARTY THAT OVERSEES CONSTRUCTION]:**

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 owing 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 Granite 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:

<u>Original Size</u>	<u>Replacement Size</u>
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:

<u>Existing Plant Material Sizes</u>	<u>Replacement Size</u>
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



TURF TO XERISCAPE PROGRAM

PHASE I

CITY OF CHANDLER PROJECT NO. ST2405.401

TECHNICAL SPECIFICATIONS

PREPARED FOR:

CITY OF CHANDLER

CAPITAL PROJECTS

PREPARED BY:

J2 DESIGN



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PART A: BID ITEMS

The following items, though not a comprehensive list, are non-payment items being considered incidental to the project, the costs of which are to be included within other bid items:

- Saw cutting
- Locating (or pothole) of new or existing utilities
- Concrete curb and gutter transition, MAG Std. Det. 221
- Curb transition, MAG Det. 220-2 and 221
- Agreementor's site office or yard.
- Roadway sweeping
- Any and all permits - preparation costs and permit fees
- Protective fencing or plating for open trenches
- Photographing and videotaping of the project
- Preparation of record drawings
- Quality control and materials testing
- Crown line
- Temporary pavement as required for all pipeline and underground work
- Removal of existing landscape irrigation pipe, tubing, and equipment

ITEM NO. 1 CONSTRUCTION SURVEYING AND LAYOUT

Description:

The Agreementor 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.

Construction Requirements:

Staking Outline: Prior to beginning any survey operations, the Agreementor 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.

Field Books: The Agreementor 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.

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. 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.

Control Lines: Construction control lines with grade breaks, transition points, horizontal and vertical curves, etc., will be established and referenced prior to construction.

Temporary Bench Marks: Temporary bench marks will be established prior to construction, maintained and periodically verified for accuracy throughout the construction phase.

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.

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.

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 Agreementor's approved construction documents prior to any demolition or excavation.

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.

Construction Stakes: The Agreementor 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 Agreement 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 Agreementor will provide additional stakes and controls necessary to perform the work. The Agreementor 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.

(a) Sidewalk and Bike Paths: Stakes are not required for sidewalks five feet or less in width which are adjoining existing curb and gutter.

- (1) 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.

(b) Storm Sewer and Drainage: All cuts will be to the invert of the pipe, given to the nearest 0.01 of a foot.

- (1) 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.
- (2) Wyes for laterals will be marked with a line only stake.
- (3) Manholes will be marked with the offset and indicated cut to top of manhole grade and inverts.
- (4) 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.
- (5) Cut sheets will be supplied to the Agreementor and City of Chandler Inspector.

(c) Water: All cuts will be to the invert of the pipe, given to the nearest 0.10 of a foot.

- (1) 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.

- (2) Fittings or other critical points such as tees will be marked with a line only stake.
- (3) 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.
- (4) 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.
- (5) Cut sheets will be supplied to the Agreementor and City of Chandler Inspector.

(d) 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.

Measurement and Payment:

Construction Surveying and Layout will 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 as described herein and required to provide all necessary survey stakes and control. The approved schedule showing the sequencing and percentage of the survey and layout work will be the basis on which monthly progress payments will be made. This schedule will be subject to periodic review, at the request of either party, if the survey and layout work lags or accelerates. If necessary, the schedule will be revised to reflect changes in survey and layout progress. When approved, the revised schedule will become the basis for payment.

ITEM NO. 2 EROSION CONTROL (SWPPP PREPARATION, INSTALLATION, MAINTENANCE, AND REMOVAL)

Description:

The work under this item will consist of furnishing all materials, labor, and equipment necessary to prepare the SWPPP plan, furnish, install, maintain and remove (if applicable) erosion control best management practices as specified in the Project Plans and directed by City Representatives.

Materials:

All materials will conform to the requirements of ADOT Standard Specifications. Section 810-2.

Construction Requirements:

All work under this item will be completed in conformance with the Project Plans and all applicable City, County, State, and Federal regulations.

Measurement and Payment:

Erosion Control (SWPPP Preparation, Installation, Maintenance, and Removal) will 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 described herein and complete in place.

No payment will be made for rejected best management practices, for maintenance after a storm event, or for damage by the Agreementor. No allowance will be made for extra material used in overlapping at splice joints.

ITEM NO. 3 MOBILIZATION/DEMOBILIZATION

Description:

The work under this item will consist of furnishing all materials, labor, and equipment necessary to conform to MAG Uniform Standard Specifications Section 109.10.

Measurement and Payment:

Mobilization/Demobilization will be measured as a single complete unit of work and paid at the contact lump sum price, which price will be full compensation for the work, complete in place.

ITEM NO. 4 CLEARING AND GRUBBING (INCLUDE SHRUB AND STUMP REMOVAL)

Description:

The work under this item will consist of furnishing all materials, labor, and equipment necessary to conform to MAG Uniform Standard Specifications Section 201. The Agreementor should review the landscape plans to identify trees to be protected in place. The Agreementor will clear and grub only the areas required to construct the project improvements.

Construction Requirements:

All work under this item will be completed in conformance with MAG Uniform Standard Specifications Section 201 in its entirety except as modified herein.

Burning of trash, debris, plant material, wood, or any other waste material will not be allowed.

Measurement and Payment:

Clearing and Grubbing will be measured as a single complete unit of work and paid at the

contact lump sum price, which price will be full compensation for the work, complete in place. Separate measurement will be made for trees 4 inches or larger in diameter at 1-foot above the original ground surface.

ITEM NO. 5 REMOVE CONCRETE HEADER

Description:

The work under this item will consist of furnishing all materials, labor, and equipment necessary to remove and dispose of existing concrete header from the project area, as shown on the Project Plans, as directed by City Representatives, and as specified herein.

Measurement and Payment:

Remove Concrete Header will be measured per lineal foot, which price will be full compensation for the work, complete in place, including excavation and subsequent backfill, compaction, hauling, obtaining permits, and disposal of materials.

ITEM NO. 6 REMOVE TURF GRASS

Description:

Contractor shall verify exact limits with Engineer for all turf grass removal areas designated on the plans. All work shall be in accordance with these specifications and standards.

Contractor shall fully eradicate and remove existing turf grass in areas required for new construction or where an existing turf area is being converted to decomposed granite. Bermuda grass is a very aggressive warm season plant. Both common and hybrid bermuda can reproduce by stolons (above ground runners), rhizomes (underground runners) or seed.

MATERIALS: The contractor shall be responsible for all applications of contact herbicide work. All applications of contact herbicide shall be performed by a registered and licensed applicator with 5 years of experience performing this work. Contractor shall provide qualifications, license information, insurance and other pertinent data on the qualifications and experience of the applicator at the pre-construction conference.

The only viable way to eradicate this plant is by chemical treatment and removal of root mass. The best chemical to use is glyphosate. It is marketed under the names of Roundup (Monsanto), Doomsday (General Control) and Kleenup (Ortho Products). Glyphosate is a foliar herbicide that kills or damages plants that it contacts.

EXECUTION:

Only spray grass killer on areas of the site that are shown for turf grass removal on the plans. The contractor stake out limits of turf grass removal prior to applying weed killer and have the grass removal limits approved by the Engineer prior to application of chemicals.

Step 1: One week prior to applying glyphosate, contractor shall irrigate the lawn area to get the grass actively growing. The temperatures shall be above 70 degrees for lawn eradication activities to begin. Spray herbicide on Bermuda grass, do not exceed the recommended rate on the herbicide label, and apply the herbicide evenly. It is not necessary to saturate the grass with the herbicide. Cut off irrigation after spraying of herbicide. Allow about two weeks for glyphosate to work after initial application. If rain is expected within 8 hours of application, contractor shall wait for a dry period because the effectiveness of glyphosate is greatly reduced by rain.

Step 2: When the grass is brown and dead, contractor shall scrape and remove a 3 inch layer of the dead grass, root mass and soil. If the grade is higher than the surrounding area, sidewalks, driveways, parking areas the contractor shall lower the grade by either "scalping" the lawn area using a mower set low or using a power rake (verticutter). Contractor shall remove as much of the grass and roots as possible. Contractor shall make the rough grade about three inches lower than the surrounding area to prevent granite or gravel from getting on adjacent walks, parking areas or hardscape areas. All grades shall be in compliance with the grading plans or as directed by the Engineer.

Step 3: Turn the irrigation back on for two weeks to see what Bermuda grass is still alive and starts growing again. Repeat Step 1 by spraying a second application of herbicide. Once a vast a majority of the turf grass is dead and not showing any signs of life then proceed to step 4 with the approval of the City project manager.

Step 4: Contractor shall monitor the re-growth of Bermuda grass and apply spot application of glyphosate to any bermuda grass growth or glyphosate and a 'Sedgehammer' herbicide to any nutsedge during the remainder of construction and through the 90 day maintenance period.

Contractor shall haul off and properly dispose of all dead grass, root mass and soil.

Measurement and Payment:

Remove Turf Grass be measured per square foot, which price will be full compensation for the work, complete in place, including spraying of turf grass with grass killer, excavation, compaction, hauling, obtaining permits, and disposal of materials.

ITEM NO. 7 REMOVE DECOMPOSED GRANITE

Description:

The work under this item will consist of furnishing all materials, labor, and equipment necessary to remove and dispose of existing decomposed granite from the project area, as shown on the Project Plans, as directed by City Representatives, and as specified herein.

Construction Requirements:

Removal and disposal of decomposed granite will comply with MAG Standard Specifications Section 350 in its entirety.

Measurement and Payment:

Remove Decomposed Granite will be measured per square foot which price will be full compensation for the work, complete in place, including removal, hauling, obtaining permits, and disposal of materials.

ITEM NO. 8 REMOVE WATER METER

Description:

The work under this item will consist of furnishing all materials, labor, and equipment necessary for the removal of existing water meters as specified in the Project Plans, as directed by City Representatives, and as specified herein.

Measurement and Payment:

Remove Water Meter be measured per each, which price will be full compensation for the work, complete in place, including removal of water meter & box, capping service line, completing City of Chandler water meter abandonment procedures, and disposal of materials. Confirm with City if the water meter is to be returned to the City.

ITEM NO. 9 REMOVE BACKFLOW PREVENTER & ENCLOSURE CAGE

Description:

The work under this item will consist of furnishing all materials, labor, and equipment necessary for the removal of backflow preventer and enclosure cage as specified in the Project Plans, as directed by City Representatives, and as specified herein.

Construction Requirements:

The Agreement will be responsible for removing existing irrigation backflow preventer and enclosure cage.

Measurement and Payment:

Remove Backflow Preventer will be measured per each, which price will be full compensation for the work, complete in place, including removal, hauling, obtaining permits, and disposal of materials. Confirm with City if the backflow preventer and enclosure cage are to be returned to the City.

ITEM NO. 10 REMOVE IRRIGATION PUMP

Description:

The work under this item will consist of furnishing all materials, labor, and equipment necessary for the removal of irrigation pump as specified in the Project Plans, as directed by City Representatives, and as specified herein.

Measurement and Payment:

Remove Irrigation Pump will be measured per each, which price will be full compensation for the work, complete in place, including removal, hauling, disconnecting from the power source, obtaining permits, and disposal of materials. Confirm with City if the irrigation pump is to be returned to the City.

ITEM NO. 11 REMOVE IRRIGATION CONTROLLER

Description:

The work under this item will consist of furnishing all materials, labor, and equipment necessary for the removal of existing irrigation controller including the pedestal mounted enclosure and disconnecting from the electric meter as specified in the Project Plans, as directed by City Representatives, and as specified herein.

Measurement and Payment:

Remove Irrigation Controller will be measured per each, which price will be full compensation for the work, complete in place, including disconnecting from electric meter, removal, hauling, obtaining permits, and disposal of materials. Confirm with City if the irrigation controller and pedestal mounted enclosure are to be returned to the City.

ITEM NO. 12 REMOVE TREES (4" DIA. AND LARGER)

Description:

The work under this item will consist of furnishing of all materials, labor, and equipment for the removal and disposal of existing trees 4 inches or larger in diameter at 1-foot above the original ground surface including grinding stump 18" below grade at locations as specified in the Project Plans.

Construction Requirements:

Removal and disposal of trees will comply with MAG Standard Specifications Section 350 in its entirety.

Measurement and Payment:

Removal of trees will be measured per each, which price will be full compensation for the work, complete in place, including stump grinding 18" below grade and disposal.

ITEM NO. 13 REMOVE IRRIGATION VALVES & EQUIPMENT

Description:

The work under this item will consist of furnishing all materials, labor, and equipment for removing existing irrigation valves & equipment as specified in the Project Plans or as directed by City Representatives.

Construction Requirements:

Removal and disposal of existing irrigation valves & equipment will comply with MAG Standard Specifications Section 350 in its entirety.

Measurement:

Remove Irrigation Valves & Equipment will be measured as a lump sum.

Payment:

Remove Irrigation Valves & Equipment, measured as provided above, will be paid for at the Agreement lump price each, which price will be full compensation for the work, complete in place.

ITEM NO. 14 SAWCUT, REMOVE AND REPLACE ASPHALT

Description:

The work under this item will consist of furnishing all materials, labor, and equipment to sawcut, remove and replace existing asphalt as specified in the Project Plans or as directed by City Representatives.

Construction Requirements:

Removal and disposal of existing asphalt pavement will comply with MAG Standard Detail 200-1 "T-Top" and MAG specifications section 350 in its entirety.

Measurement:

Remove Sawcut, Remove, and Replace Asphalt will be measured on a square yard basis.

Payment:

Sawcut, Remove and Replace Asphalt, measured as provided above, will be paid for at the Agreement lump price each, which price will be full compensation for the work, complete in place.

ITEM NO. 15	TREE – 36 IN BOX,
ITEM NO. 16	TREE – 24 IN BOX,
ITEM NO. 17	TREE – 15 GALLON
ITEM NO. 18	SHRUB – 5 GAL
ITEM NO. 19	GROUNDCOVERS – 5 GAL
ITEM NO. 20	ACCENTS – 5 GAL

Description:

The work under these items will consist of furnishing all materials, labor, and equipment necessary to plant shrubs, accents, groundcovers and trees, of the size and type indicated, at all locations as specified in the Project Plans.

Control stationing, application of rodent repellent by mechanical or chemical means, removal of excess material(s), and general plant care and maintenance will also be completed in accordance with the requirements of Section 430 of MAG Standard Specifications, these Technical Specifications, and as required and approved by City Representatives.

Measurement and Payment:

Shrubs, accents groundcovers, and trees will be measured as a unit for each item planted and will be paid for at the Agreement unit price each, which price will be full compensation for the work, complete in place.

No payment will be made for shrubs, accents, groundcovers, and trees selected for inspection and not planted or for the care and protection of trees, shrubs, accents, groundcovers, prior to the beginning of the landscaping establishment period, the costs being considered as included in the prices paid for trees accepted and paid for under this bid item.

ITEM NO. 21 DECOMPOSED GRANITE- 1-1/4" SCREENED DESERT GOLD

Description:

The work under these items consists of the following:

- Grading surfaces upon which and decomposed granite will be placed to ensure proper drainage.
- Furnishing, placing, and compacting and decomposed granite, which will include all excavation and back filling.

- Included in the granite work is maintaining these areas free of weeds and trash/debris during the construction and landscape establishment phases of the project.

All work under this section will be completed in accordance with the details shown on the Project Plans, MAG Standard Specifications Section 430 and 795, and the requirements of these Technical Specifications.

Measurement and Payment:

Decomposed Granite, 1-1/4" Screened Desert Gold will be measured by the square foot and will be paid for at the Agreement unit price per square foot, which price will be full compensation for the item, complete in place. Payment will include all required or requested samples, grading, compaction, pre-emergent herbicide, all erosion repair work and other related activities as described and specified herein, and as specified in the Project Plans or as required by City Representatives.

No additional payment will be made for all erosion repair work or compaction of soil, as specified herein, the cost being considered incidental to this item.

Agreementor will be responsible for all erosion repairs on project site that may occur during decomposed granite mulch color review and approval process at no additional payment to the Agreementor.

ITEM NO. 22 RIVER ROCK- D50=9"

Description:

All work under this section will be completed in accordance with the details shown on the Project Plans, MAG Standard Specifications Section 220 and 703, except as amended by these Technical Specifications.

River Rock shall conform to the requirements of MAG section 703, except that the aggregate shall be rounded.

River rock approved for construction will be acquired from a single source.

The salvage and reuse of existing river rock material from the project area will not be allowed. All river rock will be new. Each river rock material will come from a single source to ensure uniformity of color.

River rock to be used on the project and all samples prior to placement on the job site must meet the following requirements:

- Copy of the environmental permit for each granite source pit.
- Written acknowledgement from each supplier that they can provide the quantity of river rock material required to complete the project.
- Written acknowledgement that river rock supplier material will be provided within

the Agreement time frame.

- The Agreementor will provide a 5-gallon bucket sample for each color required on the project and each proposed alternate color

The river rock review and approval process will be coordinated by the Agreementor with City Representatives and requires a 1-week minimum advance notice by the Agreementor through the City Representatives.

The Agreementor will remove all non-planted vegetation from all areas designated to receive river rock (by chemical or mechanical means) and maintain the designated areas “vegetation-free” for a minimum period of 40 working days prior to placement of the granite mulch and decomposed granite, or as specified by the City Representative.

When using herbicides, a pre-emergent herbicide (Gallery, Surflan, Barricade or equivalent) will be applied to all granite material areas in the manner recommended by the manufacturer to prevent germination of noxious weeds.

Measurement and Payment:

River Rock, d50=9” will be measured by the cubic yard and will be paid for at the Agreement unit price per cubic yard, which price will be full compensation for the item, complete in place. Payment will include all required or requested samples, grading, compaction, pre-emergent herbicide, erosion control geosynthetic fabric, all erosion repair work and other related activities as described and specified herein, and as specified in the Project Plans or as required by City Representatives.

No additional payment will be made for all erosion repair work or compaction of soil, as specified herein, the cost being considered incidental to this item.

ITEM NO. 23 CONCRETE HEADER

Description:

The work under this item will consist of furnishing all materials, labor, and equipment necessary for the Concrete Header as specified in the Project Plans, as directed by City Representatives, and as specified herein.

Measurement and Payment:

Concrete Header will be measured by the linear foot and will be paid for at the Agreement unit price per linear foot, which price will be full compensation for the item, complete in place. Payment will include all required grading, compaction, concrete forming, rebar, concrete and other related activities as described and specified herein, and as specified in the Project Plans or as required by City Representatives.

ITEM NO. 24 TURF SEED & SOIL PREPARATION

Description:

The work under this item will consist of furnishing all materials, labor, and equipment necessary for the Turf Seed and Soil Preparation as specified in the Project Plans, as directed by City Representatives, and as specified herein.

Construction Requirements:

Turf Seed and Soil Preparation will comply with MAG Standard Specifications Sections 430.6.1 & 430.6.2 in their entirety, except as modified.

Measurement and Payment:

Turf Seed and Soil Preparation will be measured by the square foot and will be paid for at the Agreement unit price per square foot, which price will be full compensation for the item, complete in place. Payment will include all labor, material and equipment as described and specified herein, and as specified in the Project Plans or as required by City Representatives.

ITEM NO. 25 TREE PROTECTION FENCING

Description:

The work under this item will consist of furnishing all materials, labor, and equipment necessary for the Tree Protection Fencing as specified in the Project Plans, as directed by City Representatives, and as specified herein.

Measurement and Payment:

Tree Protection Fencing be measured per linear foot, which price will be full compensation for the work, complete in place, including installation and maintenance of fencing and posts.

- | | |
|--------------------|----------------------------------|
| ITEM NO. 26 | 2.5" BALL VALVE ASSEMBLY |
| ITEM NO. 27 | 2" BALL VALVE ASSEMBLY |
| ITEM NO. 28 | 1.5" BALL VALVE ASSEMBLY |
| ITEM NO. 29 | 1.25" BALL VALVE ASSEMBLY |

Description:

The work under this item consists of furnishing all labor, materials, equipment for installing ball valves, including valve box, gravel, geotextile fabric, concrete support block, excavation and backfilling at the locations designated and in accordance with the details shown on the Project Plans and in accordance with the requirements of these Technical Specifications.

Measurement and Payment:

Ball Valve Assembly will be measured as unit for each and will be paid for at the Agreement unit price each, which price will be full compensation for the work complete in place, as described and specified herein and on the Project Plans.

ITEM NO. 30 1" DRIP REMOTE CONTROL VALVE ASSEMBLY

Description:

The work under this item will consist of furnishing all materials, labor, and equipment necessary for installing the remote control valves complete, including all necessary pipe and fittings, common and control wire, pressure regulator riser, wye filter, union, ball valve, ID tag, valve box and appurtenances, excavation, and backfilling as required at the locations specified in the Project Plans, and these Technical Specifications.

Each drip remote control valve assembly shall be as shown on the plans and details.

Measurement and Payment:

1 Inch Drip Remote Control Valve Assembly will be measured as unit per each and will be paid for at the Agreement unit price, per each, which price will be full compensation for the work, complete in place, including all necessary pipe and fittings, common and control wire, pressure regulator, wye filter, union, ball valve, ID tag, valve box, and appurtenances, ac solenoids, excavation, and backfilling as described and specified herein and as shown on the Project Plans.

No additional payment will be made for the gravel sump or geotextile fabric, the cost being considered incidental to this item.

ITEM NO. 31 1.5" TURF REMOTE CONTROL VALVE ASSEMBLY

ITEM NO. 32 2" TURF REMOTE CONTROL VALVE ASSEMBLY

Description:

The work under this item will consist of furnishing all materials, labor, and equipment necessary for installing the turf remote control valves complete, including all necessary pipe and fittings, common and control wire, union, ball valve, ID tag, valve box and appurtenances, excavation, and backfilling as required at the locations specified in the Project Plans, and these Technical Specifications.

Each turf remote control valve assembly shall be as shown on the plans and details.

Measurement and Payment:

Turf Remote Control Valve Assembly will be measured as unit per each and will be paid for at the Agreement unit price, per each, which price will be full compensation for the work, complete in place, including all necessary pipe and fittings, common and control

wire, union, ball valve, ID tag, valve box, and appurtenances, ac solenoids, excavation, and backfilling as described and specified herein and as shown on the Project Plans.

No additional payment will be made for the gravel sump or geotextile fabric, the cost being considered incidental to this item.

ITEM NO. 33 MULTI OUTLET EMITTER ASSEMBLY

Description:

The work under this item will consist of furnishing all materials, labor, and equipment necessary for installing the emitter assemblies, multi-outlet, including excavating and backfilling, at the locations specified in the Project Plans & Details and these Technical Specifications.

Measurement and Payment:

Multi Outlet Emitter Assembly will be measured as unit for each and will be paid for at the Agreement unit price each, which price will be full compensation for the work, complete in place, as specified herein and on the Project Plans.

No additional payment will be made for vinyl distribution tubing, ½" PVC supply pipe, emitter valve box, geotextile fabric, pea gravel sump, distribution tube, or hose stake the cost being considered incidental to this item.

No additional payment will be made for GIS data collection and for producing the required record drawings, the cost being considered incidental to this item.

ITEM NO. 34 DEEP ROOT WATERING ASSEMBLY

Description:

The work under this item consists of furnishing all labor, materials, equipment for installing the deep root watering assembly complete in place, including plastic mesh tube, drip emitter, filter fabric, swing joint and aggregate material.

Install deep root watering system per plans & details.

Hand digging around existing tree roots may be required.

Measurement and Payment:

The Deep Root Watering Assembly will be measured as a unit for each and will be paid for at the Agreement unit price each, which price will be full compensation for the work, complete in place, as described and specified herein and in the Project Plans.

ITEM NO. 35 TURF ROTORS

Description:

The work under this item shall consist of furnishing all labor, materials, and equipment necessary to install new turf rotor assembly as specified on the plans and details of the size and materials shown, at all locations indicated on the project plans.

Materials:

All materials shall conform to MAG Specifications Sections 757 in their entirety, including all City of Chandler supplements except as modified on the plans and details and herein.

Construction Requirements:

Comply with MAG Uniform Standard Specifications and Details for Public Works Construction Section 440 in its entirety, including all revisions and City of Chandler supplements except as modified herein.

Measurement and Payment:

Comply with MAG Uniform Standard Specifications and Details for Public Works Construction Section 440 in its entirety, including all revisions and City of Chandler supplements except as modified herein. Items will be paid for at the contract unit price per each, which shall be full compensation for the item, complete in place.

ITEM NO. 36 END CAP FLUSH VALVE ASSEMBLY

Description:

The work under this item will consist of furnishing all materials, labor, and equipment necessary for installing lateral flush valve assemblies at all locations as specified in Project Plans, Details, and these Technical Specifications.

The required End Cap Flush Valve Assembly components include ball valve, necessary pipe, fittings, valve box, and all excavation and backfilling. Any removal and salvage after testing will be incidental to this item with no additional cost to the City.

Measurement and Payment:

Enc Cap Flush Valve Assembly will be measured as a unit for each and will be paid for at the Agreement unit price per each, which price will be full compensation for the work, complete in place, as specified herein and on the Project Plans.

ITEM NO. 37	2.5 IN MAINLINE PIPE - SCH 40 PVC
ITEM NO. 38	2 IN MAINLINE PIPE - SCH 40 PVC
ITEM NO. 39	1.5 IN MAINLINE PIPE - SCH 40 PVC
ITEM NO. 40	1.25 IN MAINLINE PIPE - SCH 40 PVC
ITEM NO. 41	2.5 IN LATERAL PIPE - SCH 40 PVC
ITEM NO. 42	2 IN LATERAL PIPE – SCH 40 PVC
ITEM NO. 43	1.5 IN LATERAL PIPE – SCH 40 PVC
ITEM NO. 44	1.25 IN LATERAL PIPE – SCH 40 PVC
ITEM NO. 45	1 IN LATERAL PIPE – SCH 40 PVC
ITEM NO. 46	3/4 IN LATERAL PIPE – SCH 40 PVC

Description:

The work under these items consists of furnishing all materials, labor, and equipment necessary to install polyvinyl chloride (PVC) pipe and fittings of the various sizes complete, including excavation and backfilling at the locations as specified in on the Project Plans, and these Technical Specifications.

Measurement and Payment:

Irrigation Pipe will be measured per linear foot installed and will be paid for at the Agreement unit price per linear foot, which price will be full compensation for the item, complete in place, as described herein and/or on the Project Plans including pipe, fittings, and all trenching, bedding, backfill, compaction, trench shoring, potholing, utility locating and incidentals as specified herein and as shown on the Project Plans.

ITEM NO. 47	6 IN IRRIGATION PIPE SLEEVE (SCH. 40 PVC)
ITEM NO. 48	4 IN IRRIGATION PIPE SLEEVE (SCH. 40 PVC)
ITEM NO. 49	3 IN IRRIGATION PIPE SLEEVE (SCH. 40 PVC)
ITEM NO. 50	2 IN IRRIGATION PIPE SLEEVE (SCH. 40 PVC)

Description:

The work under these items will consist of furnishing all materials, labor and equipment necessary to install 2 inch, 3 inch, 4 inch, and 6 inch pipe sleeves as specified in the Project Plans, or at locations determined on site at the time of installation in accordance with the requirements of the City of Chandler Engineering & Design Standards Manual, Chapter 8 – Landscape Design of City Owned R.O.W., Medians, and Retention Basins, and these Technical Specifications, and approved by the City Representative.

The work will also include all barricades, warning tape, potholing, locating of buried utilities during excavation and shoring required or specified by City Representatives.

Irrigation pipe sleeves will be PVC Schedule 40, belled ends, solvent weld. Wire sleeve shall be grey schedule 40 PVC solvent weld.

All Sleeve installation will conform to the plan detail when crossing paved roadways and 18 inches minimum when placed beneath a sidewalk.

Sleeves will be installed through the use of open trench.

The Agreementor will locate all existing utilities prior to the installation of the sleeves.

The Agreementor will repair any existing utilities damaged during the sleeve installation at no cost to the City.

Measurement and Payment:

Irrigation Pipe Sleeves and wire sleeves will be measured per linear foot of pipe furnished and installed and will be paid for at the Agreement unit price per linear foot, which price will be full compensation for the item, complete in place, as described herein and/or on the Project Plans including pipe, and all trenching, bedding, backfill, compaction, trench shoring, potholing, utility locating and incidentals as specified herein and as shown on the Project Plans.

No additional payment will be made for trench shoring, supplying the sand bedding material or in coordinating the efforts with City Representatives in verifying all sleeve locations, the cost being considered incidental to this item.

ITEM NO. 51	1 IN MASTER VALVE & FLOW METER ASSEMBLY
ITEM NO. 52	1.5 IN MASTER VALVE & FLOW METER ASSEMBLY
ITEM NO. 53	2 IN MASTER VALVE & FLOW METER ASSEMBLY

Description:

The works under these items consists of furnishing all materials, labor, and equipment necessary to install a master valve and flow meter including excavation, trenching, control & power wires, conduits and backfilling at the locations specified in the Project Plans, Details, and these Technical Specifications.

Measurement and Payment: 1 IN, 1.5 IN & 2 IN Master Valve and Flow Meter Assemblies will be made for these items at the unit price per each and such payment shall be compensation in full for the item assembly complete in place. Payment will be made in accordance with the contract unit price quoted in the bid proposal for each type of master valve and flow meter assembly bid item. It shall be full compensation for furnishing all labor, materials, tools, equipment, and incidentals for the completing the work involved with installing a fully functioning master valve and flow meter including communicating with the irrigation controller.

- ITEM NO. 54 12 STATION WALL MOUNTED IRRIGATION CONTROLLER**
ITEM NO. 55 12 STATION PEDESTAL MOUNTED IRRIGATION CONTROLLER
ITEM NO. 56 24 STATION PEDESTAL MOUNTED IRRIGATION CONTROLLER

Description:

The works under these items consists of furnishing all materials, labor, and equipment necessary to install wall mounted and pedestal irrigation controllers including excavation, trenching, concrete work, conduits and backfilling at the locations specified in the Project Plans, Details, and these Technical Specifications.

Measurement and Payment: 12 Station Wall Mounted, 12 Station Pedestal Mounted and 24 Station Pedestal Mounted Irrigation Controllers will be made for these items at the unit price per each and such payment shall be compensation in full for the item complete in place. Payment will be made in accordance with the contract unit price quoted in the bid proposal for each type of irrigation controller bid item. It shall be full compensation for furnishing all labor, materials, tools, equipment, and incidentals for completing the work involved with a fully functional irrigation controller that communicates with electric remote control valves and the City's BaseManager system.

ITEM NO. 57 CONSTRUCTION OWNERS ALLOWANCE:

Description:

This bid item provides a funding mechanism up to the bid item amount to perform out of scope work per General Conditions Section 9 – Changes to the Agreement. Reimbursement from this allowance (in whole or in part) is not ensured and shall not be anticipated, nor planned on receiving. The amount from this allowance shall be included in the total agreement amount as part of this project.

Construction Requirements:

Any deductions or increases in the bid item must be captured in an approved Owners Allowance request, which is supported by backup per General Conditions Section 7 – Agreement Price, or as the Project Owner and City Construction Representative may require. To use this Owners Allowance, the contractor must work with the City Construction Representative to receive final concurrence from the Project Owner.

Any work performed or costs incurred by the Contractor before an approved Owners Allowance Request will be the responsibility of the Contractor and will not be reimbursed.

Measurement:

There is no direct measurement for the Owners Allowance. The allowance is a fixed amount designated in the construction agreement, to be utilized only as directed by the City Construction Representative with final concurrence from the Project Owner. The contractor is responsible for tracking the Owners Allowance costs to verify they are within the bid item amount.

Payment:

Payments will be made based on actual costs incurred or negotiations and approved through Owners Allowance Requests, up to the total amount of the Bid Item. Any unused portion of the Owners Allowance will not be paid out and shall be removed at the end of the project through the close out Change Order. No additional payment will be made for costs exceeding the allowance and will require the contractor to submit a formal Change Order request prior to starting work.

PART B

PERMITS

The Agreementor will comply with the requirements of MAG Standard Specifications Sections 107.2 except as modified herein.

The Agreementor will obtain all permit(s) required to construct the project, including but not limited to:

City Water Meter Permit

The Agreementor will obtain City permit(s) required for fire hydrant water trucks (Agreementor submits and pays for this permit, no separate payment will be made for this permit; the cost being considered as included in the price of other Agreement items) and new landscape water meters (City pays for the permit but Agreementor must sign and pick up the permit).

City Encroachment, Civil and Building Permits

The Agreementor will obtain City permit(s) required for encroachment, civil and structures. The City pays for the permits but Agreementor must sign and pick up the permit.

City Administrative Use Permits

The Agreementor will pay and obtain City permit(s) required for construction trailer and temporary facilities. No separate payment will be made for this permit, the cost being considered as included in the price of other Agreement items.

Maricopa County Permits

The Agreementor will pay and obtain Maricopa County permit(s) required for traffic control within their jurisdiction. No separate payment will be made for this permit, the cost being considered as included in the price of other Agreement items.

Air Quality Permit

The Agreementor will obtain a Maricopa County Air Quality Permit for this project. The Agreementor will be required to prepare a comprehensive fugitive dust control plan, in accordance with the guidelines established in Rule 310 of Maricopa County Regulation III, Control of Air Contaminants. The Agreementor will complete and submit the control plan with the permit application and obtain approval from the County prior to any activities

which may produce dust pollutants.

No separate payment will be made for the preparation, implementation of the fugitive dust control plan, or permit fees, the costs being considered as included in the price of Agreement items.

Erosion Control Permit

The Agreementor will submit the Arizona Pollutant Discharge Elimination System Notice of Intent (NOI) and the Notice of Termination (NOT) to the Arizona Department of Environmental Quality. The Agreementor and the City Representatives will jointly review the Stormwater Pollution Prevention Plan (SWPPP) prior to submission of the NOI and prior to the start of work. The SWPPP will be maintained throughout the duration of the project in accordance with the APDES requirements and a current version will be available at all times at the project site.

No separate payment will be made for the preparation, implementation of the SWPPP, or permit fees, the costs being considered as included in the price of Agreement items.

COOPERATION WITH UTILITIES

Coordination with the pertinent utility companies has been a part of the development of this project. Construction activities will be coordinated and scheduled to incorporate the following applicable utility construction activities: CenturyLink Communications Facility Relocations.

- City of Chandler
- Cox Communications
- Southwest Gas
- SRP Power
- Verizon Wireless

The following telephone numbers should put the Agreementor in contact with the proper personnel for coordination:

UTILITY COMPANY	CONTACT	PHONE
Cox Communications	Nycole Hale	623-328-2998
Southwest Gas	Gene Florez	480-730-3841
Salt River Project	Jessica Miles	602-236-8189
City of Chandler	Dennis Aust	480-782-3310
Verizon Wireless	Robert Vasquez	602-282-3558

Regardless of the means and methods utilized during the construction of the work, the Agreementor will protect all existing utilities during construction. Any damages to the existing utilities resulting from the scope of work, will be repaired and paid for by the Agreementor. The Agreementor will follow all AZ811 and state laws regarding the protection of utilities during construction.

It will be the Agreementor's responsibility to determine the exact location of the utilities prior to any construction operations and to notify the above-mentioned utility companies at least two working days prior to commencing any work on the project.

TECHNICAL SPECIFICATIONS

The following revisions to the MAG Uniform Standard Specifications for Public Works Construction, 2025 Edition, shall become a part of the contract documents.

SECTION 425 – TOPSOIL

425.1 DESCRIPTION: *Add the following:*

This work shall also consist of salvaging and stockpiling of existing on-site topsoil and placement of salvaged topsoil in planting areas.

425.3 CONSTRUCTION METHODS: *Add the following:*

425.3.2 Salvaging and placement of topsoil: After clearing and grubbing has occurred and prior to grading operations the contractor and engineer will walk the site to determine any areas where the existing topsoil should either not be salvaged and used for planting areas and/or select preferred existing top soil areas that should be salvaged and used for planting areas. Upon approval from the engineer remove from the top twelve inches of "preferred" topsoil and place in a stockpile on-site a quantity that will cover (plate) the planting areas to a depth of eight inches; allowing for a shrink factor of 20%. The stockpile shall be placed in a pile no higher than three feet. During construction no driving or dumping shall be allowed on the stockpile. The stockpile shall be kept free of weeds, trash, and construction debris during the entire construction period.

425.4 MEASUREMENT: *Delete and replace with the following:*

No separate measurement or payment will be made for salvage, stockpiling, and plating of topsoil.

425.5 PAYMENT: *Delete and replace with the following:*

No separate payment will be made for salvage, stockpiling, and plating of topsoil, the cost of which is considered included within other landscape items.

SECTION 430 – LANDSCAPING

430.2.GENERAL: *Add the following:*

Within 60 calendar days of the Notice of Award, the Agreementor will furnish a complete Plant Availability List of all the plantings needed for this project. The list will include the confirmed nursery source for the planting stock, assuring the availability of each plant material and the size specified herein.

The list will include the species name (botanical, common, and varietal), size and quantity of the plant material, the confirmed source for the plant material as evidenced by an invoice or Agreement with the confirmed source and the approximate date the plant material will be delivered to the jobsite. This Plant Availability List will be submitted in triplicate to City Representatives.

All plant material shall comply with the latest edition of the Arizona Nursery Association recommendation of container grown plant material.

Approval of the Plant Availability List by City Representatives does not relieve the Agreementor of the responsibility for providing plantings that will pass the inspection required.

Prior to planting, the selection of trees will be approved by the City Representatives. The Agreementor will meet with the project Landscape Architect at up to three (3) local nurseries or wholesale plant providers to select and tag trees for use in the project. Local nurseries will be defined as those located within the Phoenix Metro Area. Nursery visits will occur a minimum of three (3) months prior to planting. The selected trees may be purchased and stored at the nursery, under continued care of the nursery, until time of planting. No planting will occur between June 15th through September 1st unless without written City approval.

To properly plant maintain and care for the plant material, water used during landscape construction will be furnished by the City of Chandler at the designated water meter sources from within the project limits, at no cost to the City. All water used during the planting operation phase of the project will be the responsibility of the Agreementor, and will be provided at no additional cost to the City.

Add the following to the list of materials to be certified (14th paragraph):

- Decomposed Granite

Add the following:

Certification shall indicate suppliers name, address, telephone number, date of purchase, name, model number and technical description of item purchased, and quantity of each item purchased.

430.4 PREPARING THE SITE FOR LANDSCAPING: Delete the 2nd sentence of the 2nd paragraph and replace with the following:

Removal includes digging out stumps and roots to a depth as specified in Section 201.

Add the following:

Provide proper surface drainage within all planted areas. Any grading conditions found in the plans or specifications, in obstructions on the site, or in prior work done by another party that the Contractor feels precludes establishing proper drainage, shall be brought to the attention of the Engineer in writing for resolution.

430.5.4 Plant Location: Delete in its entirety and replace with the following:

The Contractor shall stake the location of planting areas and planting pits prior to any excavation. Subject to the Engineer's approval, minor relocations shall be done at this time to avoid unsuitable conditions, such as utilities, rocky areas, poor soil, etc. Prior to planting, a percolation test shall be performed on tree pits and all saguaro and ocotillo planting pits to determine adequate drainage. Fill pit half-full of water. Allow 24 hours to drain. If drainage does not occur within 24 hours, new locations for the plant(s) may be selected by Engineer. Engineer also reserves the right to direct additional work to achieve proper drainage on a plant-by-plant basis. Where drainage is insufficient, install a rock caisson. Each caisson shall have a four-foot deep (4') by 8-inch (8") diameter hole filled with AASHTO No 57 Stone filled to the bottom of the pit. Increase the depth of the caisson to eight feet if encountering ground water, caliche, or impervious rock. No separate measurement or payment will be made for the installation of rock caisson.

430.5.6 Tree and Shrub Planting: Delete the 1st sentence and replace with the following:

The size of the pits shall be a minimum of two (2) times the diameter of the plant root ball or container size, and only as deep as the rootball.

Add the following after the first paragraph:

Amendments with each cubic yard of soil conditioner will consist of 25 pounds of agricultural gypsum, 1 pound of water soluble or powdered soil sulfur and 9 pounds of slow release Isobutylidene diurea fertilizer 25-4-8. Soil sulfur will be 85-95 percent pure soil sulfur.

Amendments will be inspected separately before adding to soil conditioner to ensure quality control. Pre-packaging of amendments is prohibited.

The Agreementor will layout the planting pits in accordance with the Project Plans and control stationing along the curb edge using a starting location, methods, and markings approved by City Representatives. The planting layout will be according to the Project Plans. Triangular spacing shown are minimums only; actual spacing may vary.

The flagging will remain in the center of the planting pit until planting starts.

The Agreementor will pay special attention to the infestation of weeds and grasses. If either of these items are found in the planting pits, it could result in immediate removal and disposal of the plant. The planting pit will be excavated and inspected to assure complete eradication of roots or rhizomes which may have grown into the area. This work and associated materials will be the responsibility of the Agreementor, and will be completed at no additional cost to the City.

Add the following after the fourth paragraph:

Immediately after planting, all plants will be irrigated with the irrigation system until the backfill soil around and below the roots and the root ball itself is brought to 100 percent water holding capacity.

All planting pits shall be completely filled with water and allowed to completely drain so that all sides and bottom soil of planting pit is thoroughly moist prior to any plant being installed. Provide twenty (20) pounds of Live Earth (or equal) Humate soil conditioner per cubic yard of plant backfill mix.

Water will not be used to accomplish soil compaction around the root ball.

The soil for back-filling the planting pits will confirm to Section 430 of MAG Standard Specifications.

All trees will be staked per City Detail C-801 and are considered incidental to the tree planting.

430.6.1 Preparation of In-Place Soil: *add the following:*

Submittal and Qualification Requirements:

Certification of seed. Include identification of source and name and telephone number of supplier.

Pesticides and Herbicides: Include product label and manufacturer's application instructions specific to this Project.

Qualification Data: For qualified landscape Installer.

Product Certificates: For sand, soil amendments and fertilizers, from manufacturer.

Material Test Reports: For sand, existing native surface topsoil and imported or manufactured topsoil.

Maintenance Instructions: Recommended procedures to be established by Owner for maintenance of turf areas during a calendar year. Submit before expiration of required initial maintenance periods.

Installer Qualifications: A qualified landscape installer whose work has resulted in successful turf establishment.

Professional Membership: Installer shall have a valid Arizona contractor's license (AZ ROC) and be a member in good standing with Arizona Landscape Contractors Association.

Experience: Ten years' experience in turf installation.

Installer's Field Supervision: Require installer to maintain an experienced full-time supervisor on Project site when work is in progress.

Soil-Testing Laboratory Qualifications: An independent laboratory or university laboratory, recognized by the Arizona State Department of Agriculture, with the experience and capability to conduct the testing indicated and that specializes in types of tests to be performed.

Soil Analysis: For each unamended soil type, furnish soil analysis and a written report by a qualified soil-testing laboratory stating percentages of organic matter; gradation of sand, silt, and clay content; cation exchange capacity; sodium absorption ratio; deleterious material; pH; and mineral and plant-nutrient content of the soil.

Testing methods and written recommendations shall comply with USDA's Handbook No. 60. The soil-testing laboratory shall oversee soil sampling, with depth, location, and number of samples to be taken per instructions from Landscape Architect. A minimum of three representative samples shall be taken from varied locations for each soil to be used or amended for planting purposes.

Report suitability of tested soil for turf growth.

Based on the test results, state recommendations for soil treatments and soil amendments to be incorporated. State recommendations in weight per 1000 sq. ft. or volume per cu. yd. for nitrogen, phosphorus, and potash nutrients and soil amendments to be added to produce satisfactory planting soil suitable for healthy, viable plants.

Report presence of problem salts, minerals, or heavy metals, including aluminum, arsenic, barium, cadmium, chromium, cobalt, lead, lithium, and vanadium. If such problem materials are present, provide additional recommendations for corrective action.

Seed and Other Packaged Materials: Deliver packaged materials in original, unopened containers showing weight, certified analysis, name and address of manufacturer, and indication of conformance with state and federal laws, as applicable.

Bulk Materials:

Do not dump or store bulk materials near structures, utilities, walkways and pavements, or on existing turf areas or plants.

Provide erosion-control measures to prevent erosion or displacement of bulk materials, discharge of soil-bearing water runoff, and airborne dust reaching adjacent properties, water conveyance systems, or walkways. Accompany each delivery of bulk fertilizers, lime, and soil amendments with appropriate certificates.

430.6.2 Seeding: *Replace the first two sentences with the following:*

Bermuda seed, type as shown in the plans, shall be installed seasonally between May 15 and August 15. If the contractor's schedule for the turf installation is not during this time period, Contractor must return after the following May 15th to complete the seeding installation and turf establishment per these specifications and to the acceptance of the City.

The off-season period shall not be the cause for additional compensation. The contractor, may request, and this may only happen with written approval of the City, to install Hybrid Bermuda sod overseeded with perennial rye grass in lieu of waiting until the next seeding season after. Should this be approved, sod would be Midiron, Tifway 419, or another Hybrid Bermuda type as directed by the City.

Weather Limitations: Proceed with planting only when existing and forecasted weather conditions permit planting to be performed when beneficial and optimum results may be obtained. Apply products during favorable weather conditions according to manufacturer's written instructions.

430.6.2 Seeding: *add the following to the end of this sub-section:*

Seeded Turf Maintenance:

Contractor shall develop and submit a minimum of three (3) months prior to any turf maintenance activities a turf maintenance plan. The plan shall be submitted to the City of Chandler for approval prior to any turf maintenance activities. The plan should include a month by month breakdown of turf maintenance activities showing but not limited to; fertilization schedules, watering/irrigation schedule, aeration program, mowing program, weed control (by type and season), insect/pest control treatments, and re-sprigging, or resodding efforts if required.

Maintain and establish turf by watering, fertilizing, weeding, mowing, trimming, replanting, and performing other operations as required to establish healthy, viable turf. Roll,

regrade, and replant bare or eroded areas and remulch to produce a uniformly smooth turf. Provide materials and installation the same as those used in the original installation.

Fill in as necessary soil subsidence that may occur because of settling or other processes. Replace materials and turf damaged or lost in areas of subsidence.

Apply treatments as required to keep turf and soil free of pests and pathogens or disease. Use integrated pest management practices whenever possible to minimize the use of pesticides and reduce hazards.

Watering: If permanent irrigation system is not functioning contractor shall install and maintain temporary piping, hoses, and turf-watering equipment to convey water from sources and to keep turf uniformly moist to a depth of 6 inches.

Schedule watering to prevent wilting, puddling, erosion, and displacement of sprig or mulch. Lay out temporary watering system to avoid walking over muddy or newly planted areas.

Water turf with fine spray at a minimum rate of 1 inch per week unless rainfall precipitation is adequate.

Mow turf as soon as top growth is tall enough to cut. Repeat mowing to maintain specified height without cutting more than 1/3 of grass height. Remove no more than 1/3 of grass-leaf growth in initial or subsequent mowings. Do not delay mowing until grass blades bend over and become matted. Do not mow when grass is wet. Schedule initial and subsequent mowings to maintain the following grass height:

Mow bermudagrass variety to a height of 1/2 to 3/4 inch by use of a reel mower only-rotary style mower is not acceptable.

Mow ryegrass variety to a height of 1/2 to 1 inch

Turf Post-fertilization: Apply fertilizer after initial mowing and when grass is dry.

Use fertilizer that will provide actual nitrogen of at least 1 lb/1000 sq. ft. to turf area.

Turf Post-Insect Control: Apply pest control agents at appropriate seasonal schedules to control insects that may impact turf areas. All applications of any insecticide shall be applied by a licensed and bonded applicator per manufacturer instructions and materials approved in advance by City of Chandler staff.

Satisfactory Turf:

Turf installations shall meet the following criteria as determined by Landscape Architect or City of Chandler representative:

Satisfactory seeded turf: At end of construction period, a healthy, uniform, close stand of grass has been established, free of weeds and surface irregularities, with coverage exceeding 90 percent over any 10 sq. ft. area and bare spots not exceeding 5 by 5 inches

Use specified materials to reestablish turf that does not comply with requirements and continue maintenance until turf is satisfactory.

All satisfactory turf areas will not be considered acceptable or complete until all turf surface areas have been leveled and all turf areas are top dressed with a City-approved top dressing material.

Pesticide Application:

Apply pesticides and other chemical products and biological control agents in accordance with requirements of authorities having jurisdiction and manufacturer's written recommendations. Coordinate applications with Owner's operations and others in proximity to the Work. Notify Owner before each application is performed.

Post-Emergent Herbicides (Selective and Non-Selective): Apply only as necessary to treat already-germinated weeds and in accordance with manufacturer's written recommendations.

At the final project acceptance at the end of the warranty period, the Landscape Architect or Owner's Representative will make a final acceptance inspection of all turf areas. If at that time, there is any appearance of plant material insect or fungus/pathogen infestation prior to the acceptance, the Contractor is responsible to eradicate and treat for the specific issue and replace any and all damaged turf areas and plant materials.

Cleanup and Protection:

Promptly remove soil and debris created by turf work from paved areas. Clean wheels of vehicles before leaving site to avoid tracking soil onto roads, walks, or other paved areas.

Erect temporary fencing or barricades and warning signs as required to protect newly planted areas from traffic. Maintain fencing and barricades throughout initial maintenance period and remove after plantings are established.

Remove non-degradable erosion-control measures after grass establishment period.

430.8 DECOMPOSED GRANITE AREA: *Delete in its entirety and replace with the following:*

Decomposed granite shall be native, local, desert, decomposed granite stone at the size and color specified on the plans. The decomposed granite shall be from a single source, free from coating, clay, caliche or organic matter. Contractor shall provide Engineer with a five gallon sample of each material spread on-site to the required depth as indicated on the plans as well as a gradation report showing that the proposed granite is in compliance

with the required gradations for review and approval a minimum of 15 working days prior to installation. Color to be as indicated on plans. Criteria to be used for approval for project granite color will be based on the following:

- Similarity to the granite color sample designated as the desired granite control color of the project
- Conformance to the material samples maintained by the City of Chandler
- If referenced similar color decomposed granite was used on previous Chandler projects
- The material's appearance after being wet and then dried

The salvage and reuse of existing granite material from the project area will not be allowed. All decomposed granite will be new. Each decomposed granite material will come from a single source to ensure uniformity of color.

Decomposed Granite to be used on the project and all granite samples prior to placement on the job site must meet the following requirements:

- Copy of the environmental permit for each granite source pit.
- Written acknowledgement from each supplier that they can provide the quantity of Granite Material required to complete the project.
- Written acknowledgement that granite supplier material will be provided within the Agreement time frame.
- The cost for any approved alternate decomposed granite color will be paid for at the Agreement bid price.
- Alternate granite samples will have been cleared by City Representatives prior to color(s) submittal and on-site placement for review and approval.
- Alternate granite samples submitted after award of Agreement will be submitted a minimum of 30 days prior to granite installation for review and approval.

Contractor must examine the subgrade, verify the elevations, and observe the conditions under which the work is to be performed. The existing grade shall be fine graded and raked free of organic matter and other debris one inch diameter and larger and then compacted.

Prior to placement of the decomposed granite, designated areas to receive granite mulch and decomposed granite will be completely free of all grass, weeds, or other miscellaneous vegetation growth.

Any existing weeds or Bermuda grass growing in designated landscape areas shall be treated with a post-emergent spray, such as "Round-up", or an approved equal. Any existing or new trees or vegetation shall be protected from the spray drift. There will be

no separate payment for the weed spraying. Bermuda grass or weeds must be completely eradicated from all areas of the landscape and where designated by the Engineer. The Contractor shall remove all non-planted vegetation from all areas designated to receive decomposed granite (by chemical or mechanical means) and maintain the designated areas "vegetation-free" for a minimum period of 40 working days prior to placement of the decomposed granite, or as specified by the Engineer.

All weed control products and herbicides shall be approved for use by the Engineer prior to any applications. Contractor shall submit copies of all manufacture specifications and application rates to the Engineer for review and approval prior to application. Herbicides and weed control shall only be performed by a licensed applicator; Contractor shall supply information on applicator to the Engineer for approval.

The sub-grade, prior to granite placement, shall be compacted to 85 percent of the maximum proctor density, as determined in accordance with the requirements of Arizona Test Methods 230 or 235, depending on the test method used to determine the compaction density (Sand Cone or Nuclear Method). Compaction testing and associated report shall be provided to the Engineer and sealed by a registered professional engineer specialized in geotechnical investigation with all cost for testing and report of results to be provided by the Contractor at no cost to the Contracting Agency.

Contractor shall apply three (3) applications of pre-emergent:

- One application of pre-emergent herbicide prior to installing granite
- One application after granite has been installed, compacted, and raked level
- One application 30 Days prior to the end of the maintenance period

The Engineer is to be notified prior to all pre-emergent applications.

The pre-emergent herbicide shall be applied in the manner recommended by the manufacturer to prevent germination of noxious weeds, and shall be equivalent to Surflan, or an approved equal, and shall be applied at a rate specified by the manufacture to control weeds in an ornamental setting. Pre-emergent herbicide shall be applied to the designated granite areas, prior to the final water settling operation. Water to activate the pre-emergent herbicide shall be applied to the areas of the herbicide application as recommended by the manufacturer's label. The amount of water specified by the manufacturer may be adjusted due to rainfall, if approved by the Engineer.

After the first application of pre-emergent the granite shall be installed and shall be rolled or raked to remove any irregularities, tire marks etc. Installation shall provide a two-inch depth of decomposed granite after compacting. During the final spreading and final grading operations, all surfaces within the decomposed granite areas shall be passed over by the spreading and grading equipment a minimum of 2-times. Equipment operations for spreading, grading, raking, chemical application, water settling, and any other operations shall be done in a manner that uniformly maximizes the vehicle(s) wheel

compaction over the surface area. All vehicles used for spreading, grading and raking the decomposed granite shall have one set of wheels with floatation tires having a minimum width of 18-inches to allow equal compaction of the granite. The use or application of granite by any method (conveyor belt etc.) shall not relive the Contractor of providing granite compaction to a level approved by the Engineer. Methods of compacting such as rolling, water settling, etc., shall be approved by the Engineer.

After placing, spreading, compacting, and grading the decomposed granite the Contractor shall water settle the total thickness of the decomposed granite to remove the fine material from the surface. The water settling operation, noted above, shall be completed by applying water at minimum depth of one-half inch over the decomposed granite areas placed or as approved by the Engineer. This water settling technique can be used to water in the second application of pre-emergent in compliance with pre-emergent Manufacturer recommendations and as approved by the Engineer.

The use of conveyor belt type of equipment for placing granite mulch and decomposed granite will not relieve the Agreementor from the requirements of compacting the granite mulch and decomposed granite with equipment as described herein.

Unless otherwise specified in the drawings, granite finish grade shall be one inch (1") below top of adjacent hardscape surfaces.

430.10 HEADER/EDGER INSTALLATION: Add the Following:

Concrete shall be as specified in the plans. If no class is specified on the plans concrete shall be a minimum of Class A.

430.12 MAINTENANCE: Add the following:

The contractor shall provide adequate personnel to accomplish maintenance.

The contractor shall provide a maintenance schedule for the duration of the maintenance period to the Engineer for review and approval. The maintenance schedule shall include the following:

- the specific day of the week and the specific time the Landscape Maintenance will occur and expected duration of time on the project site
- the specific activities that will be taking place at each maintenance visit

Landscape Maintenance shall be in accordance with MAG Standard Specifications and City supplements to MAG and shall include, but not be limited to, mowing of turf areas, dethatching of turf areas, aerification of turf areas, inspection of plant materials, grooming of inert ground cover, pesticide and herbicide applications, and inspections of the irrigation systems with appropriate repairs, replacements, and adjustments as required for a fully operational irrigation system able to provide 100% water coverage to plant materials. Irrigation modifications shall be reviewed and approved by the Engineer prior

to the work being completed. Any modifications to the irrigation systems shall be as-built by the Contractor.

The Contractor shall inspect the plants at least once per week and perform appropriate maintenance. Maintain trees and shrubs in a healthy, growing condition by performing necessary operations, including the following:

Prune and shape only as necessary to maintain the usual form of the plant, to stimulate growth, to maintain growth within space limitations, to retain required height and spread, to provide for sight visibility, and to maintain a natural appearance. Prune, thin out and shape trees and shrubs in accordance with standard horticultural practices. Unless otherwise directed by the Engineer, do not cut tree leaders, and remove only injured or dead branches. All pruning shall occur per the direction of the Engineer. All pruning shall be by a certified arborist or under the direct supervision of a certified arborist. Contractor shall submit certifications of arborist to the Engineer for review and approval a minimum of 10 working days prior to any pruning activities taking place.

Remove from site any excessively pruned or malformed stock resulting from improper pruning and replace at no additional cost to the Contracting Agency. Do not shear plant material. Any plant material improperly maintained, as determined by the Engineer, the Contractor shall remove and replace at no additional cost to the Contracting Agency.

In groundcover area, keep areas free of weeds. Use recommended, legally approved, herbicides whenever possible. Avoid frequent soil cultivation. Keep all landscape areas free of broadleaf and grassy weeds with pre-emergent and/or selective contact herbicides. Cultivating or hoeing weeds will not be allowed practice. The Contractor shall eradicate all noxious weeds or the Contracting Agency will not accept the project.

The Contractor shall notify the Engineer 48 hours prior to the application of any chemical treatments. Qualified personnel shall do chemical mixing and use the application equipment in the presence of the Engineer. An Arizona pesticide licensed contractor shall perform all chemical control. The Engineer shall approve the personnel, materials and methods of application of chemicals prior to beginning the operation.

Inspect landscape granite weekly. Remove man-made debris, weeds, and grass controlled with chemicals. Any erosion that has occurred in granite areas will be the responsibility of the Contractor to remedy, repair, and replace granite.

Trees will be maintained in a straight vertical position during both the Construction Phase and the Landscape Establishment Phase of the project.

The Agreementor will be responsible for the care of the trees and damage caused by improper support of the trees or due to construction activities. If necessary, or if required by City Representatives, all staking and bracing of trees will be completed as detailed on the Project Plans.

430.13.1 Landscaping: *Delete the 1st sentence and replace with the following:*
The Plant Establishment Period shall be ninety (90) days and shall take place within the working days for the project.

430.13.2 Lawns: *Delete in its entirety and replace with the following:*
Lawns will be accepted in accordance to section 430.6.

430.14 PLANT WARRANTY AND GUARANTEE: *Delete the 1st and 2nd sentences and replace with the following:*

At no additional cost to the project, the Contractor shall warranty all trees, saguaros, shrubs, groundcovers, accents, and cacti for a period of one (1) year after final acceptance of the project against defects including death and unsatisfactory growth, except for defects resulting from neglect by the Contracting Agency, vandalism, force majeure, abuse or damage by others, or incidents which are beyond the Contractor's control.

Add the following to the end of this section:

Contractor shall replace shrubs, groundcovers, accents, and cacti within seven days of notification from the Engineer. Install replacement plants of the same kind and size as originally specified and as described in the contract documents.

Contractor shall replace trees and saguaros within seven days of notification from the Engineer. Install replacement trees and saguaros of the same kind and size as originally specified and as described in the contract documents.

SECTION 440 – LANDSCAPE IRRIGATION SYSTEM INSTALLATION

440.2 GENERAL: *Add the following:*

The plans indicate a detailed layout of irrigation lines, laterals, and emitter locations; however, some of the piping may be shown diagrammatically outside of the planting areas for graphic clarity. The contractor shall follow the intent of the plan layout and shall review and obtain written approval from the Owner's Authorized Representative for any requested changes.

The irrigation system shall be constructed using the emitters, valves, piping, fittings, and other components, of sizes and types as shown on the drawings and as called for in these specifications. The system shall be constructed to grades and conform to areas and locations as shown on the drawings.

A landscape maintenance period is a part of this contract and shall include monitoring of the irrigation systems on a weekly basis or more often as required to keep the system in proper operating condition. Maintenance activities shall include all controller adjustments, all repairs to any type of irrigation equipment installed as a part of the construction phase of the contract. All repairs to the irrigation system shall be completed within 24 hours' notice of the required repair. Any loss of plant material due to irrigation system deficiencies shall be replaced with like sized and quality material.

The contractor shall maintain the work during construction and until the project is accepted.

If quantities are furnished either in specifications or on drawings, quantities are furnished for information only. It is Contractor's responsibility to determine actual quantities of material, equipment, and supplies required by the project and to complete independent estimate of quantities and wastage.

Provide work and materials in accordance with latest edition of National Electric Code, Uniform Plumbing Code as published by the International Association of Plumbing and Mechanical Officials, and applicable laws, regulations and codes of governing authorities.

All irrigation equipment and materials shall be supplied by the manufacturers as indicated on the plans, details and specifications. If no manufacturer is specified, the contractor shall supply as part of his submittal package complete manufacturer cut sheets detailing materials, construction methods and standards

All materials utilized on this project are intended to be new and of the best grade available. No used, salvaged, reclaimed, remanufactured, or seconds will be accepted.

Add the following:

440.2.1 QUALITY ASSURANCES:

The irrigation contractor shall be licensed by the State of Arizona with a K-21 classification "Landscaping and Irrigation Systems" license in good standing. The irrigation contractor shall also be a "Certified Irrigation Contractor" as certified by the Irrigation Association.

The irrigation contractor shall submit evidence of possession in good standing for the required licenses and certifications at the pre-construction meeting.

The irrigation contractor shall, at the pre-construction conference, submit the name of the project superintendent and the on-site foreman who will be in charge of daily project activities. The superintendent and foreman shall have a minimum of 5 years' experience in the construction of similar projects in size and complexity.

The irrigation contractor shall not change the approved superintendent or on-site foreman without prior approval of the Engineer.

Once construction activities have commenced, it is the intention of this project that the job site be fully manned/staffed until the completion of the work without gaps in progress.

The contractor shall provide two week look ahead schedules of work site activities and material deliveries. Regularly scheduled weekly meetings shall be held to review the schedules, progress, quality control and other items as needed.

All materials and each part or detail of the work shall be subject to inspection by the Engineer. The Engineer shall be allowed access to all parts of the work and shall be furnished such information and assistance by the contractor as required to make a complete and detailed inspection.

The contractor shall schedule its operations to allow a reasonable amount of time for inspection of the work. The contractor shall not be entitled to additional compensation or an extension of the work time for delay resulting from such inspections.

All work found to be unacceptable or work or materials that were installed without inspection shall be removed and replaced at no additional cost.

Upon failure on the part of the contractor to comply with any order of the Engineer under provisions of this subsection, the Engineer will have the authority to cause unacceptable work to be removed and to deduct the costs from any monies due the contractor.

440.2.2 Coordinate Work with Other Trades:

The irrigation contractor shall coordinate his work with the general contractor and the work of other trades conducting construction activities on the project site. The irrigation contractor shall receive grades plus or minus 0.10 foot of the finished grade of the project. Beginning work shall constitute acceptance of grade and soil conditions.

The irrigation contractor shall arrange his work and shall place and dispose of the materials being used so as not to interfere with the operations of the other contractors within the limits of the same project and on adjoining projects. The contractor shall join the contractor's work with that of the others in an acceptable manner and shall perform it in proper sequence to that of the others.

440.2.3 Submittals:

- Ball valves
- Irrigation Controllers
- Air Vacuum Release Valve
- Mainline Drain Assembly
- Master Valve
- Flow Sensor
- Gate Valves

- Quick couplers
- Turf Remote Control Valves
- Drip Remote Control Valves
- Valve Boxes
- Tracer Wire
- Turf Spray Heads
- Turf Rotors
- Multi Outlet Emitters
- Emitter Boxes
- Rigid PVC pipes- all sizes and materials (purple)
- Flex pipes
- Distribution tubing
- Pipe glue, primer, tapes
- Fittings
- Swing joints
- Flushing end cap ball valves
- Geotextile Fabric
- Two Wire Control Cable
- Wire Connectors
- Control Wire PVC Conduit
- Lightning Arrestor
- Warning Tape

440.2.4 Record Drawings:

Do not permanently cover work until as-built information is recorded.

The record drawings shall show all changes in the Contract work, or work added, on these Record Drawings in a contrasting color, including work changed by Addendum or Bulletin

440.2.5 Operation and Maintenance Manuals:

The controller programs shall include programming indicating which programs will be operated concurrently and the total; system flow during individual and concurrent run programs. All programs will include cycle and soak periods for slope and soil considerations to minimize runoff. Programs shall also demonstrate adherence to a 8 hour (10:00pm to 6:00am) water window.

Maintenance manuals shall include manufacturer's parts sheets for all equipment installed. Provide an equipment source name address and phone number for each piece of equipment.

440.5. TRENCH EXCAVATION AND BACKFILL: *Replace the minimum depth over pipeline with the following:*

Depth over pipes and conduits shall be as indicated on the plans.

Add the following:

Pipe trenches shall be straight but if obstructions necessitate a change of direction, the limits of curvature for PVC pipe shall be followed in strict accordance with pipe manufacturer recommendations.

Trenches may be curved to change direction or avoid obstructions within the limits of the curvature for PVC pipe. Minimum radii of curvature are 25 feet for 2-inch diameter pipe, 100 feet for 3- and 4-inch diameter pipe, and 150 feet for 6-inch pipe. All curvature results from the bending of the pipe lengths. No deflection will be allowed at a pipe joint.

440.6. PIPE INSTALLATION: *Add the following:*

Installation of PVC pipe and fittings will conform to the requirements of the City of Chandler Engineering & Design Standards Manual, Chapter 8 – Landscape Design of City Owned R.O.W., Medians, and Retention Basins.

All piping will be installed as detailed on the Project Plans and will have a minimum cover as shown.

The Agreementor will furnish to City Representatives, prior to pipe installation, all installation instructions as published by the plastic pipe and fitting manufacturers. Installation of PVC piping and fittings will be in accordance with the published instructions, the project documents and as directed by City Representatives.

All 3" and larger mainline pipes shall be Class 200 PVC rubber gasket pipe conforming to ASTM-D-2241.

All mainline piping 2 ½" and smaller shall be solvent weld schedule 40 PVC conforming to ASTM D-1785.

All turf and drip lateral pipes shall be solvent weld schedule 40 PVC conforming to ASTM D-1785.

All fittings for use on 2 ½" and smaller mainline pressure pipe shall be schedule 80. Fittings for use on lateral piping shall be schedule 40. Only schedule 80 PVC fittings may be threaded. Use Teflon tape on threaded connections, pipe dope is not acceptable.

Fittings for use on 3" and larger pipe shall be deep bell ductile iron.

Install 3" detectable warning tape over all mainline pipes, 6" above the top of the installed pipe.

Install thrust blocks for fittings on pipe greater than or equal to 3-inch diameter or any diameter rubber gasket pipe. Use 3,000 PSI concrete, 2-mil plastic, and No. 4 Rebar.

Use cast-in-place concrete bearing against undisturbed soil. Size, orientation and placement shall be as shown on the installation details. Wrap fitting with plastic to protect bolts, joint, and fitting from concrete. Install rebar as shown on the installation details. Do not allow PVC to come in contact with the thrust block.

Use a joint restraint harness on pipe greater than or equal to 3-inch diameter or any diameter rubber gasket pipe wherever joints are not positively restrained by flanged fittings, threaded fittings, and/or thrust blocks. Use a joint restraint harness with transition fittings between metal and PVC pipe, where weak trench banks or vertical directional changes do not allow the use of thrust blocks, or where extra support is required to retain a fitting or joint. Use bolts, nuts, retaining clamps, all-thread, or other joint restraint harness materials that are zinc plated or galvanized.

Lateral pipe sections downstream of control valves with hydraulic flows of less than 0.5 gallons per minute as shown on the Project Plans will be thoroughly flushed and have the remote control valve's flow control stem properly adjusted, all to the satisfaction and approval of City Representatives. The cost for this work will be included in the cost of Agreement items.

No emitter laterals or piping will be installed through or beneath plant pits. Minimum distance between plant pit perimeter and piping will be 18 inches. The maximum distance between the plant pit and piping will be governed by maximum emitter supply tubing lengths as specified on the Project Plans.

All trenches excavated for the irrigation systems will be backfilled within five working days from the day they are excavated. Barricades will be placed by excavated ditches located within 30 feet of the traveled way in a manner acceptable to the Project Manager. Open ditches beyond 30 feet from the traveled way will be delineated in a manner acceptable to City Representatives.

440.7 VALVES, VALVE BOXES, AND SPECIAL EQUIPMENT: *Add the following:*

All valve boxes are to be green when in turf or tan when in granite, or purple when reclaim/effluent water is being utilized.

Valve boxes shall be installed with a 4-inch to 6-inch deep layer of 3/8-pea gravel at the base of the box.

Valve boxes will receive 2 inch high heat branding labeling the equipment in the box per plans & details.

440.8 SPRINKLER HEAD INSTALLATION AND ADJUSTMENT: *Add the following to sub-paragraph (C):*

Emitter assemblies provide a connection to the 3/4" lateral line using a 1/2" S.D.R. 13.5, class 315 PVC (maximum length 15'), extension utilizing schedule 40 PVC fittings, and

1/2" flex hose riser (schedule 40)(maximum length 18") with 1/2" threaded male adaptor to receive the emitter.

The multi-outlet emitter will be placed in an emitter valve box below grade with the distribution tube extending to the plants as detailed on the Project Plans.

The supply tubing for City of Chandler emitters will extend from the 3/4" PVC lateral to the emitter and enable the emitter to be located so that the distribution tubing from the emitter to the plant does not exceed 15-foot in length.

The supply pipe for emitters will be 1/2" Class 315 PVC. The 1/2" PVC will enable placement of the emitter so that the distribution tubing can be placed per the Irrigation Emitter Layout detail included in the Project Plans. The supply pipe will be placed at 12" depth.

The number of emitters per riser circuit, as shown on the Project Plans, is approximate. The Agreementor will add no more than two multi-outlet emitters per circuit, as detailed. Any additional emitters required and exceeding the above indicated amount must be approved by City Representatives prior to installation.

The Agreementor will maintain a set of record data for all irrigation lines and equipment coordinating with the City of Chandler's GIS requirements. All GIS data collection of irrigation equipment to complete the record drawings that are tied to City coordinates will remain the responsibility of the Agreementor at no cost to the City.

The emitters shall be installed to the high side of the plant. Install emitters with the port quantity and flow rate as shown on the plans emitter schedule. Emitters shall extend 1/2" above finished grade. Do not substitute multi-port emitters for single-port emitters.

Drip lateral flush end caps shall be installed at the end of the 3/4" drip lateral runs. Install at the locations shown on the plans per the plan details. Locate drip flush end caps within 10" round valve boxes. Where both tree and shrub drip laterals end at the same location it will be acceptable for both lateral line end caps to be located within the same 10" round valve box.

440.9 AUTOMATIC CONTROL SYSTEM INSTALLATION: *Add the following:*

Automatic controller shall be as specified in the plans. Ground controller per manufacturer's specifications.

440. 11 FLUSHING AND TESTING: *Add the following:*

The Contractor shall be responsible for controller, sprinkler, and emitter outlet adjustments for a period of ninety (90) days as described in the establishment period.

SECTION 757 – SPRINKLER IRRIGATION SYSTEM INSTALLATION

757.1 General: *Add the following:*

Pipe and fittings will be polyvinyl chloride, hereinafter PVC, conforming to the requirements of the City of Chandler Engineering & Design Standards Manual, Chapter 8 – Landscape Design of City Owned R.O.W., Medians, and Retention Basins.

All materials and fittings will be new and of the manufacturer's most current design. Plastic pipe and fittings will be installed in accordance with the requirements specified herein and the manufacturers recommendations.

All mainline piping to have 18 awg detectable tracer wire and 3" wide detectable warning tape installed 6 inches above piping. Wire and tape to be blue in color for potable water systems.

No steel or galvanized pipe or fittings shall be allowed for use on the project.

757.2.1 Plastic Pipe: *Delete the first paragraph entirely:*

757.2.2 Plastic Pipe: *Delete the first paragraph and replace with the following:*

Rigid Plastic Pipe shall be extruded from 100% virgin normal impact unplasticized polyvinyl chloride (PVC) Type I, Grade I or II resin 2000 psi (PVC 1120 or 1220). Design stress ASTM D1784, Department of Commerce PS-21-70, PS-22-70, Standard Dimension Ratio (SDR) 21 or greater than 200 psi. Pipe shall conform to ASTM D-2241 and D-2672. See plans for application and exact grade.

Delete the sixth paragraph of and replace with the following:

Mainline piping up to and including 2 ½" size shall be schedule 40 solvent welded. All turf and drip lateral piping up to and including 3" size shall also be schedule 40 solvent welded. Mainline pipe 3" size and larger shall be SDR 21/Class 200 bell end (ring tite) conforming to ASTM F-477.

757.2.3 Pipe and Fittings: Delete the first paragraph (A) and replace with the following:

(A) Steel Pipe and fittings or couplings shall not be permitted on the project.

Delete the second paragraph (B) and replace with the following:

Plastic Pipe Fittings and Couplings: For all continuously pressurized mainlines up to and including 2 ½" in size all fittings shall be schedule 80. All lateral line pipe fittings shall be schedule 40. Only schedule 80 fittings shall be threaded. Plastic flange and saddle fittings are not permitted.

Delete the third paragraph (C) and replace with the following:

1. Copper Pipe shall be Type K, hard tempered, ASTM B88, with fittings of wrought solder joint type in accordance with ANSI B16.22.
2. Solder joints with silver solder: 45 percent silver, 15 percent copper, 16 percent zinc, 24 percent cadmium and solidus at 1125 degrees F. and liquids at 1145 degrees F., conforming to ASTM B206 and FS QQB-655C.

757.2.6 Bedding and Cover Material: Add the following:

Bedding and cover material for PVC piping, flexible emitter hose and 24-volt wiring will conform to the following gradation requirements when tested in accordance with Arizona Test Method 201:

Sieve Size	Percent Passing
No. 4	100
No. 16	30 - 80
No. 50	0 - 30
No. 100	0 - 25
No. 200	0 - 20.0

757.3 Valves and Valves Boxes: *Delete this subsection and replace with the following:*

757.3.1 General Valve Boxes:

Valve Boxes: All valve boxes unless otherwise specified shall be constructed of rigid high density polyethylene (HDPE) resin, chemically inert plastic, and include UV inhibitors with 6-inch extensions available where required.

All valve boxes covers unless otherwise specified shall be bolt down plastic T-style covers secured with a 3/8-inch stainless steel bolt, washer and nut. Apply the appropriate identifying letters and/or numbers with a heat-brand.

Identification letters and numbers shall be 2 inches high and heat branded onto the box cover. Identification shall be as indicated on the detail drawings. Heat branding shall be accomplished using branding irons specifically designed for this purpose utilizing stencil number/letter outlines. Heat branding shall not weaken or in any way puncture the valve box cover.

All valve box bodies and covers unless otherwise specified shall be green in color when located in turf areas, or tan in color when located in granite/desert areas, or purple in color when directed within plans to use with reclaimed water. Reclaimed water valve boxes

shall have appropriate reclaimed water warnings embossed onto the cover in English and in Spanish, as well as the international "Do Not Drink" symbol.

Round valve boxes unless otherwise specified shall be 10-inch diameter x 10 inches high. If higher round box is required, either an 18" high box shall be used or a 6" extension may be used if available.

Round emitter boxes shall be 6 1/2 inches diameter x 8 3/8 inches high molded of structural foam polyolefin material with color and UV stabilizers added. Emitter boxes shall be used with multi-port emitter installations only and boxes along with covers shall be green in color when located in turf areas, or tan in color when located in granite/desert areas, or purple in color when directed within plans to use with reclaimed water.

Rectangular valve boxes unless otherwise specified shall be 15 3/4 inches wide x 25 1/4 inches long x 15 1/4" inches high. If higher rectangular box is required, a 6" extension may be used.

Valve boxes used for irrigation equipment shall be as follows:

10-Inch diameter round valve boxes shall be used for gate valves, ball valves, quick coupler valves, drip system flush end caps, and wire splice boxes if required.

6-Inch diameter round emitter boxes shall be used for multi-port emitters only.

15 3/4 Inches wide x 25 1/4 inches long x 15 1/4" inches high rectangular valve boxes shall be used for all turf and drip remote control valve assemblies.

Install valve boxes in planting areas and according to the construction details. Only one valve per box will be allowed. Align valve boxes at right angles to adjacent hardscape whenever possible. Where several valve boxes are located in the same area, arrange them in a uniform and orderly fashion. Valve boxes shall be installed with an 6-inch deep layer of 3/8-inch pea gravel at the base of the box over geotextile fabric. When grouped together, allow a minimum of 12 inches between valve boxes.

Add the following:

757.3.2 Ball Valves: Ball valves 2-inch and smaller shall be of the brand, size and type indicated on the irrigation plans.

Ball valve shall be Sch 80 pvc with full port rated to 235 psi working pressure (sxs);

757.3.3 Master Valves: Master valves shall be of the brand, size and type on the irrigation plans. Normally closed master valve with glass-filled nylon globe style body rated to 220 psi, & 2" fpt connections;

757.3.5 Flow Sensor: Flow sensor shall be of the brand, size and type on the irrigation plans.

Hunter flow-sync flow sensor #hfs with 2" schedule 80 pvc tee #fct-208 with flow range of

757.3.6 Remote Control Valves: Remote control valves shall be of the brand, size and type indicated on the irrigation plans. Valve shall be constructed with a glass filled nylon globe style body, filter sentry, EPDM diaphragm, & adjustable pressure regulator.

757.3.7 Brick Support: Valve box assembly supporting bricks shall be precast concrete. Valve boxes shall be supported on all sides with a 2-inch x 4-inch x 8-inch concrete brick; or approved equal.

757.3.8 Filter Fabric: The geotextile fabric for use beneath the pea gravel sump will conform to MAG Standard Specification section 796.2.2 Non-woven class 'B' geotextile fabric.

757.3.9 Aggregate Sump: Valve Box Assembly material aggregate sump shall be 3/8" screened washed aggregate per MAG Section 701.

757.3.10 Pressure Regulator: The pressure regulator shall be capable of operating at a constant, factory preset, non-adjustable outlet pressure of 25 with a flow range between: 0.50 - 15 GPM models. The pressure regulator shall maintain the nominal pressure at a minimum of 5 PSI above model inlet pressure and a maximum of 80 PSI above nominal model pressure*. Refer to the PRU performance curve to establish specific outlet pressures based on relative inlet pressure and flow rate. Install downstream from shut off valves. Recommended for outdoor use only. Not NSF certified.

757.3.11 Wye Drip Filter: Post valve filtration devices shall be wide two-piece body Y-strainers.

757.5 IRRIGATION WATER EMISSION EQUIPMENT: *Revise the sections with the following:*

757.5.1 Pop-Up Rotors/ Spray Heads: add the following:

Contractor shall ensure that each head is laid out to achieve head to head coverage and to minimize overspray onto concrete curbs and sidewalks.

757.5.2 Bubbler Devise: Add the following:

Install Deep Root Watering Assembly and bubbler with 0.25 GPM flow per plans & details.

The cap locks onto the body and requires a tool for removal. It shall be made of a UV resistant ABS material.

The body is the connection point for the RZWS components. The tubing, locking cap, swing joint, baffle, and bubbler all assemble onto the body. It shall be made of a UV resistant ABS.

The baffle system diverts water to different levels of the root zone. It shall be made of a recycled polypropylene material.

Swing joint shall be ½" threaded x 12" length and be manufactured with acetal, LDPE, flexible tubing.

Check valve have ½" female inlet x ½" male outlet and be manufactured with UV resistant ABS.

757.5.3 Drip Emitter Device: Revise the following:

(f) Extension Tubing: Distribution-tubing shall meet emitter manufacturer's recommendations. The tubing shall not exceed 8 feet in length and shall have an emitter outlet check valve (bug cap) attached to each end. Tubing shall not have kinks or creases to the distribution-tubing which may reduce the flow capacity of the tube.

Add the following

Multi-Port Emitter: The emitter case will be made of durable black, heat resistant acetyl plastic material. It will be resistant to temperature variation, ultraviolet radiation, smog, (ozone), and common liquid fertilizer and weed spray. The case will completely encompass the silicone diaphragm, protecting it from potentially harmful environmental factors.

The emitters will be of the non-compensating, continuous flushing type, based on the pressure cascade principal using a series of flexible orifices.

The emitter will be capable of continuous, clog free operation with 30 mesh (minimum) filtration. The emitter will be capable of being installed in all positions and maintain its given flow characteristics. The emitter will be non-adjustable and the flow regime will be maintained by flexible orifice silicone diaphragms.

The emitter will function with a system pressure range of 15 PSI minimum to 30 PSI maximum. The emitter flow variation of the 1 GPH emitter will not exceed 1.06 GPH at 120 degrees F. or 1.07 GPH at 150 degrees F. Emitter manufacturing variability will not exceed 0.05 GPH.

The multi-outlet emitter will be capable of delivering one of the following quantities from each of the six outlets of the emitter regardless of the number of outlets open:

G.P.H.	at	P.S.I.
0.60		20
0.71		25

0.80		30
	or	
1.00		20
1.15		25
1.34		30
	or	
2.00		20
2.30		25
2.68		30

The flexible polyethylene supply tubing will be for pressure application, manufactured from 100 percent Union Carbide G-Resin 7510 Natural 7 virgin resin with minimum two percent carbon black content and with the following physical characteristics:

I.D. 0.250-inches
O.D. 0.350-inches
Wall Thickness 0.050-inches

The flexible distribution tube for use with multi-outlet emitter will be a black vinyl blend suitable for use as emitter outlet tubing with the following physical characteristics:

I.D. 0.160-inches
O.D. 0.220-inches
Wall Thickness 0.030-inches

The distribution tube will be capable of being bent around a 7/8 inch mandrel without kinking.

The tube stake required to position the distribution tube will be manufactured of 20 percent glass-filled polypropylene, minimum 6-inch overall length with slotted top to retain the distribution tube as detailed at the location(s) shown on the Project Plans.

Multi-outlet emitters will consist of the emitter unit, the 1/2" PVC lateral pipe, the 1/2" flex PVC nipple riser, flexible vinyl distribution tubing, emitter valve box, geotextile filter fabric, pea gravel sump and PVC fittings necessary to connect the emitter to the 3/4" PVC supply lateral pipe.

The emitter valve box will be constructed of tan colored HDPE (high-density polyethylene) in a round conical shape with a 6 1/8" top diameter, 8" bottom diameter and an overall height of 8 3/4". The cover will be T-style fastened to box by twist and lock method.

The supply pipe from the 3/4" PVC lateral to multi-outlet emitters will be 1/2 inch Class 315 PVC with Schedule 40 PVC 90-degree elbows.

SECTION 795 – LANDSCAPE MATERIAL

795.6.2 Common Bermuda Grass: *Delete this section in its entirety and replace with the following:*

795.6.2 Bermuda Grass Seed: Seed shall be as specified per plans. Seed shall be installed per manufacturer's recommendations.

795.9.1 Decomposed Granite Gradation: *Delete this section in its entirety and replace with the following:*

Sieve Size	Percent Passing
1-1/2"	100
1-1/4"	98
1"	72-95
3/4"	25-45
1/2"	0 - 10
3/8"	0 - 5
1/4"	0 - 5
#4	0-4
#40	0-3
#100	0-3
#200	0-2

EXHIBIT D

GIS / GPS DATA DELIVERY REQUIREMENTS

N/A

EXHIBIT E

FEDERAL PROVISIONS

N/A