NOTICE OF REGULAR COUNCIL MEETING

In accordance with § 38-431.02 of the Arizona Revised Statutes of the State of Arizona, notice is hereby given to the Members of City Council and to the general public that the Mayor and Council of the City of San Luis, Arizona will hold a Regular City Council meeting at 6:00 p.m., Wednesday, February 11, 2026. The meeting will take place at the City Council Chambers, located at 1090 E. Union Street, San Luis, Arizona, 85349. The public is invited to attend the open meeting.

In accordance with the Americans with Disabilities Act (ADA) and Section 504 of the Rehabilitation Act of 1973, the City of San Luis does not discriminate on the basis of disability in the admission of or access to, or treatment or employment in its programs, activities, or services. For information regarding rights and provisions of the ADA or Section 504, or to request reasonable accommodations for participation in City programs, activities, or services contact: ADA/Section 504 Coordinator, City of San Luis Human Resources Department, 1090 E. Union Street, San Luis, Arizona, 85349; (928) 341-8520.

Notice is hereby given that pursuant to A.R.S. § 1-602.A.9, subject to certain specified statutory exceptions, parents have a right to consent before the State or any of its political subdivisions make a video or audio recording of a minor child. Meetings of the City Council are audio and/or video recorded, and, as a result, proceedings in which children are present may be subject to such recordings. Parents in order to exercise their rights may either file written consent with the City Clerk to such recordings or take personal action to ensure that their child or children are not present when a recording may be made. If a child is present at the time a recording is made, the City will assume that the rights afforded parents pursuant to A.R.S. § 1-602.A.9 have been waived.

THIS NOTICE IS GIVEN BY:

/s/ Sonia Cornelio, City Clerk

AVISO DE JUNTA REGULAR

De acuerdo con los Estatutos del Estado de Arizona A.R.S. § 38-431.02, se le informa a los miembros del Cabildo y al público en general que el Alcalde y el Cabildo, tendrán una Junta Regular a las 6:00 p.m., el día Miercoles, 11 de Febrero del 2026. La junta se llevará a cabo en la Sala del Cabildo, ubicada en el 1090 E. Union Street, San Luis, Arizona, 85349. El público está invitado a la junta.

De acuerdo con el Acta de Americanos con Discapacidades y la Sección 504 del Acta de Rehabilitación del 1973, la Ciudad de San Luis, Arizona no discrimina por causa de discapacidad la admisión y acceso a sus programas, actividades, servicios o en el trato en cuanto a empleo. Para más información referente a derechos y provisiones del Acta de Americanos con Discapacidades o Sección 504, o para solicitar adaptaciones que sean razonables para la participación en programas, actividades o servicios de la Ciudad, contactar al: Coordinador del Acta de Americanos con Discapacidades/Sección 504, Departamento de Recursos Humanos de la Ciudad de San Luis, Arizona, ubicado en el 1090 E. Union Street, San Luis, Arizona, 85349; (928) 341-8520.

Por medio de este aviso y de acuerdo con los Estatutos del Estado de Arizona A.R.S § 1-602.A.9, sujeto a ciertas excepciones reglamentarias, los padres de familia tienen el derecho de dar el consentimiento ante el Estado o cualquiera de sus subdivisiones políticas para hacer una grabación de audio o video de su hijo menor de edad. Las juntas del Cabildo se graban en audio y/o video y como resultado, el hecho de que haya menores presentes puede ser sujeto a que sean grabados. Para que los padres de familia puedan ejercer sus derechos pueden dar el consentimiento por escrito con la Secretaria de la Ciudad a tal grabación, o tomar acción personal para asegurarse que su hijo menor no esté presente cuando la grabación se lleve a cabo. Si un menor de edad está presente en el momento de la grabación, la Ciudad asumirá que los padres de familia están cediendo los derechos sobre una posible grabación de acuerdo con los Estatutos del Estado de Arizona A.R.S. § 1-602.A.9.

ESTE AVISO ES DADO POR:

/f/ Sonia Cornelio, Actuaria de la Ciudad

AMENDED AGENDA 2/10/2026
REMOVED PREVIOUSLY ITEM NO. 9, 10 AND 11
ADDED ITEM NO. 7.E. AND RE-NUMBERED THE ITEMS ACCORDINGLY

AGENDA
Regular Meeting
San Luis City Council
Council Chambers
1090 E. Union Street
San Luis, AZ 85349
February 11, 2026
6:00 p.m.

PLEASE TAKE NOTICE THAT MEMBERS OF THE CITY COUNCIL WILL ATTEND EITHER IN PERSON, TELEPHONE, OR VIDEO CONFERENCE COMMUNICATION. THE MAYOR OR ACTING MAYOR FOR THIS MEETING MAY CHANGE THE ORDER OF THE ITEMS; IF AUTHORIZED BY LAW AND BY A MAJORITY VOTE OF A QUORUM OF CITY COUNCIL MEMBERS PRESENT, AN EXECUTIVE SESSION WILL BE HELD IMMEDIATELY FOLLOWING THE VOTE IN ACCORDANCE WITH A.R.S. § 38-431.03(A) AND THE MEETING WILL BE TEMPORARILY RECESSED WHILE THE CITY COUNCIL RETIRES TO EXECUTIVE SESSION WHICH WILL NOT BE OPEN TO THE PUBLIC.

TENGA EN CUENTA QUE LOS MIEMBROS DEL CABILDO DE LA CIUDAD ASISTIRÁN EN PERSONA, TELÉFONO O COMUNICACIÓN POR VIDEO CONFERENCIA. LA ALCALDESA O ALCALDE INTERINO DE ESTA REUNIÓN PUEDE CAMBIAR EL ORDEN DE LOS TEMAS; SI ESTÁ AUTORIZADO POR LA LEY Y POR MAYORÍA DE VOTOS DE UN QUÓRUM DE MIEMBROS DEL CABILDO PRESENTES, SE LLEVARÁ A CABO UNA SESIÓN EJECUTIVA INMEDIATAMENTE DESPUÉS DE LA VOTACIÓN DE ACUERDO CON LOS ESTATUTOS DEL ESTADO DE ARIZONA A.R.S. § 38-431.03 (A) Y LA REUNIÓN SERÁ TEMPORALMENTE RECESADA MIENTRAS EL CABILDO DE LA CIUDAD SE RETIRE A UNA SESIÓN EJECUTIVA QUE NO ESTARÁ ABIERTA AL PÚBLICO.

1. CALL TO ORDER/ROLL CALL

2. PLEDGE OF ALLEGIANCE

3. INVOCATION

Any opening invocation that is offered before the official start of the Council meeting shall be the voluntary offering of a private person, to and for the benefit of the Council. The views or beliefs expressed by the invocation speaker have not been previously reviewed or approved by the City Council or the city staff. The city is not allowed by law to endorse the religious or non-religious beliefs or views of such speakers. Any invitation to stand during the Pledge of Allegiance or invocation shall not be construed as a demand, order, or any other type of command. No person in attendance at the meeting shall be required to participate in any Pledge of Allegiance or an opening invocation that is offered.

Toda invocación inicial que se ofrezca antes del inicio oficial de la sesión del Cabildo será una ofrenda voluntaria de una persona particular, para beneficio del Cabildo. Las opiniones o creencias expresadas por quien haga la invocación no han sido revisadas ni aprobadas previamente por el Cabildo ni por el personal de la ciudad. La ley no permite a la ciudad respaldar las creencias o puntos de vista religiosos o no religiosos de dichos oradores. Cualquier invitación a ponerse de pie durante el Juramento a la Bandera o la invocación no se interpretará como una exigencia, orden ni ningún otro tipo de mandato. Ninguna persona presente en la sesión estará obligada a participar en el Juramento a la Bandera ni en ninguna invocación inicial que se ofrezca.

4. **CALL TO THE PUBLIC**

This is the time for the public to comment. Under A.R.S. § 38-431.01(I), Members of the City Council shall not discuss or take legal action on matters raised during an open call to the public that are not properly noticed on this agenda for discussion and legal action. At the conclusion of an open call to the public, individual Members of the City Council may respond to criticism made by those who have addressed the City Council, may ask staff to review a matter, or may ask that a matter be put on a future agenda.

5. **PROCLAMATION/PRESENTATION**

5. A. Proclamation on Government Communicators Day - February 20, 2026

5. B. Presentation on Greater Yuma Economic Development Corporation's Mid-Year Report. **(Greg LaVann, CEO for Greater Yuma Economic Development Corporation)**

6. **CONSENT AGENDA**

All matters are considered to be routine by the City Council and will be enacted by one motion. If discussion is desired, that item will be removed from the Consent Agenda and will be considered separately.

6. A. **MINUTES OF**

- Regular Council meeting held January 14, 2026
- Special Council meeting held January 16, 2026

6. B. **DISBURSEMENTS**

From January 21, 2026 to February 2, 2026

Total $1,101,981.47 (One Million, One Hundred One Thousand, Nine Hundred Eighty-One Dollars and Forty-Seven Cents)

6. C. Discussion and possible action on any and all matters regarding changes to the employment contract of Chief of Police Nigel I. Reynoso. **(Jenny Torres, Acting City Manager)**

7. **DISCUSSION AND POSSIBLE ACTION ITEMS:**

7. A. Discussion and possible action on any and all matters regarding the engagement of legal services from Pierce-Coleman to serve as the contracted City Attorney on an interim basis. **(Jenny Torres, Acting City Manager)**

7. B. Discussion and possible action on any and all matters regarding the acceptance of Arizona Companion Animal Spay/Neuter Committee (AZCASNC) Spay & Neuter Grant Funding. **(Humberto Arcos, Grants Coordinator)**

7. C. Discussion and possible action on any and all matters regarding the acceptance and award of a construction contract to Yuma Valley Contractors, Inc., for the construction of the Lift Station 300 Influent Sewer Force Main project. **(Jorge Perez, Assistant Director of Public Works)**

7. D. Discussion and possible action on any and all matters regarding the award of a contract to Kimley Horn and Associates, Inc. for the design of Well Site #6 Booster Pumps Station Expansion Design. **(Tomas Sanchez, City Engineer)**

7. E. Discussion and possible action on any and all matters regarding Resolution No. 2392. A Resolution of the Mayor and City Council of the City of San Luis, Arizona, approving the intergovernmental agreement between the City of San Luis and Gadsden Elementary School District for the use of City facilities for reunification drills. **(Jenny Torres, Acting City Manager)**

8. SUMMARY OF CURRENT EVENTS
Events by Mayor, Council Members and/or City Manager pursuant to A.R.S. § 38-431.02 (K).

9. ADJOURNMENT

PROCLAMATION

Regular City Council Meeting **5. A.**

Meeting Date: 02/11/2026

Title:

Proclamation on Government Communicators Day - February 20, 2026

Attachments

Proclamation

OFFICE OF THE
MAYOR
CITY OF SAN LUIS

Proclamation

GOVERNMENT COMMUNICATORS DAY
February 20, 2026

WHEREAS, the role of government communications professions is to inform, educate and engage their communities; and

WHEREAS, robust communication in government creates trust and inspires residents to take action and be involved; and

WHEREAS, government communications create relationships and calls to action, build awareness and understanding through storytelling, engage and foster engagement on civic issues and use all channels to include people in critical decisions; and

WHEREAS, it is essential to have strong communications in government because it is a foundational element of living in a democracy where citizens have the freedom to make their voice heard; and

WHEREAS, the City of San Luis is proud and has deep gratitude and recognition for government communicators' professionalism, dedication, hard work, commitment, enthusiasm and sacrifice.

NOW, THEREFORE, BE IT RESOLVED, that I, Nieves Riedel, Mayor of the City of San Luis, Arizona, do hereby proclaim February 20, 2026, as **"Government Communicators Day"** and encourage all residents to thank the members of the Communications Division who have dedicated their careers to ensure the City of San Luis has effective, impactful and successful communication strategies that resonate and are relevant.

DATED this **11th** day of **February 2026**.

_____
Nieves Riedel, Mayor

ATTEST:

_____
Sonia Cornelio, City Clerk

PRESENTATION

Regular City Council Meeting **5. B.**

Meeting Date: 02/11/2026

Submitted By: Sonia Cornelio, City Clerk's Office

Presentation Topic/Summary:

Presentation on Greater Yuma Economic Development Corporation's Mid-Year Report. **(Greg LaVann, CEO for Greater Yuma Economic Development Corporation)**

Attachments

Presentation

Greg LaVann
President & CEO
GLaVann@GreaterYuma.org

City of San Luis Mid-Year Report

Confidential Site Selection

Identify existing buildings, build-to-suit opportunities and other real estate solutions

Workforce Coordination and Facilitation

Connect with Arizona's talent pipeline

Critical Infrastructure Connections

Facilitate discussions with Arizona's electric, gas, water and fiber network leaders

Detailed Market Analysis

Provide research and data supporting Arizona's competitive advantages

Manufacturing Assistance

Integrate into Arizona's manufacturing ecosystem

Supply Chain Solutions

Make introductions to Arizona customers and suppliers

Key Stakeholder Engagement

Meet economic development partners and government officials

Financial Programs

Identify and secure financial relief for businesses in Arizona

Public Relations and Media Amplification

Provide public and media relations, social media promotion and event coordination

Greg LaVann

CEO & President

Amber Shek

Chief Operations Officer

Lyndsay Wisneski

Chief Marketing Officer

Michelle Britton

Investor Account Manager

Mariana Apperson

Data Exploration Specialist

Carlos Armando Mexia

Binational Consultant

GYEDC Economic Impact Q1/Q2 FY2026

4
New Locates and Expansions

214
New Jobs Committed

$57,579
Average High-Wage Salary

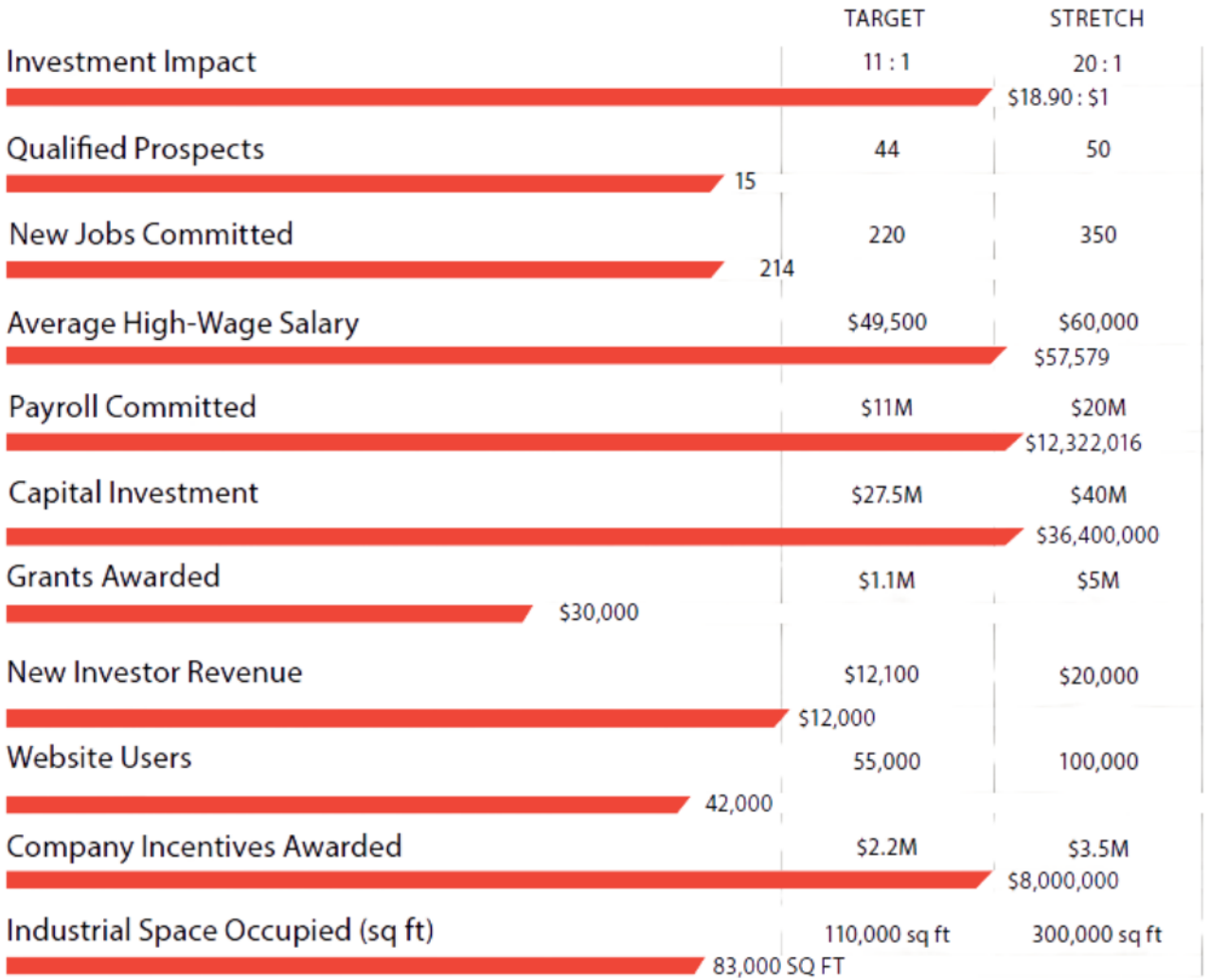
$36,400,000
Capital Investment

amazon

PA Project Ambition

MYERS Power Products, Inc.

FSI

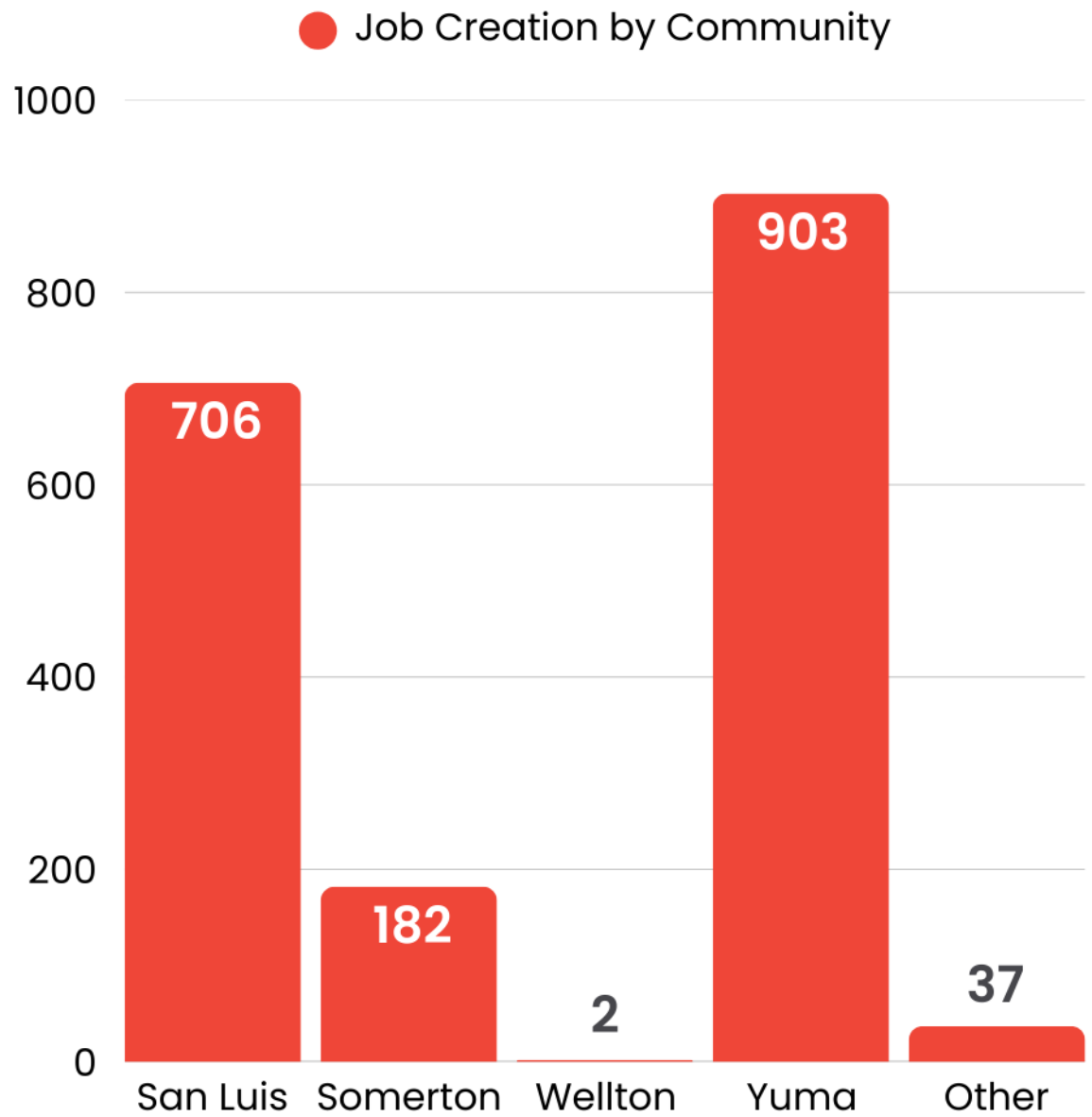


Jobs by Community

1,830
Total Jobs

Companies

- ACCT
- ALLO Fiber
- Associated Materials Innovations
- Clarios (JCI)
- Department of Economic Security
- FedEX
- Glasswerks
- InsulTech
- LRC Coil
- Martech
- Michael Foods (Almark)
- MPW
- Myers Power
- National Alloy Wheels
- Piana
- Somerton Manufacturing
- S & A Industries
- Yuma Headwear
- Yuma Truck Driving Schools



OPPORTUNITY ZONES

Opportunity Zones 2.0

Data Centers

Major Infrastructure Investments

FTZ

YUMA COUNTY
FOREIGN TRADE ZONE #219

Foreign Trade Zone #219

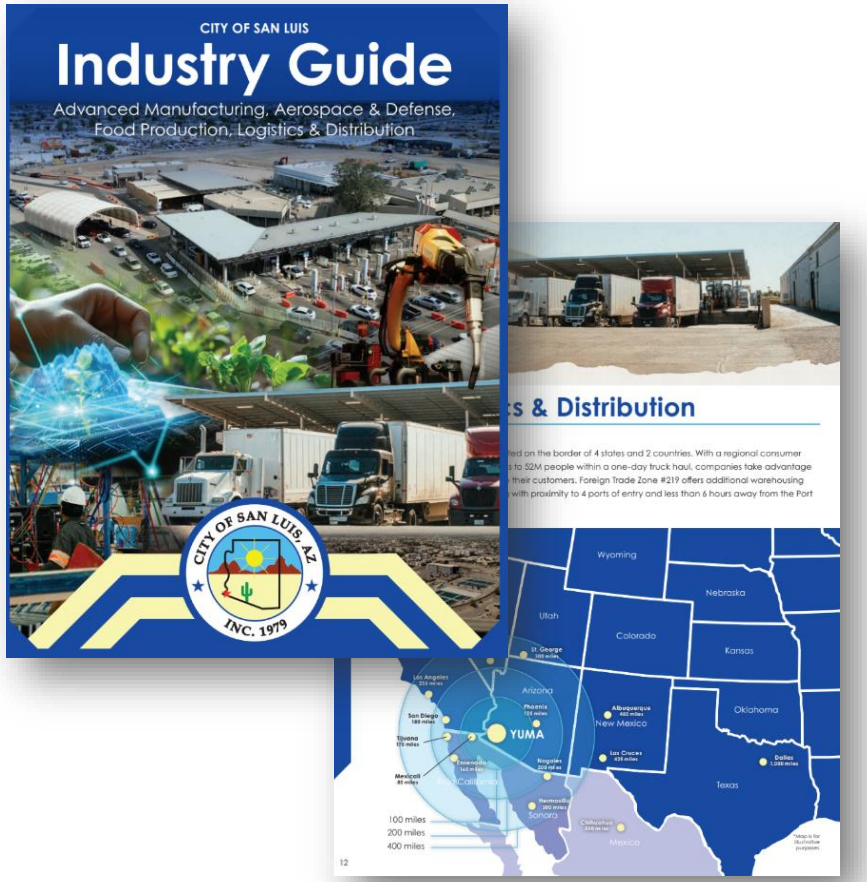
Data for Q1/Q2

Marketing

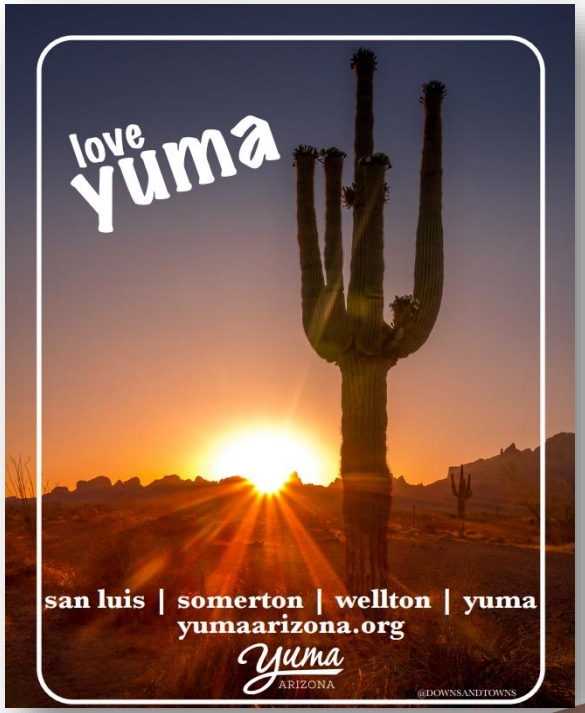
San Luis Snapshot

Regional Guide Distribution

San Luis Industry Guide



Greater Yuma Marketing Committee Advertisements



Data for Q1/Q2

Binational

Carlos Armando Mexia
Binational Consultant

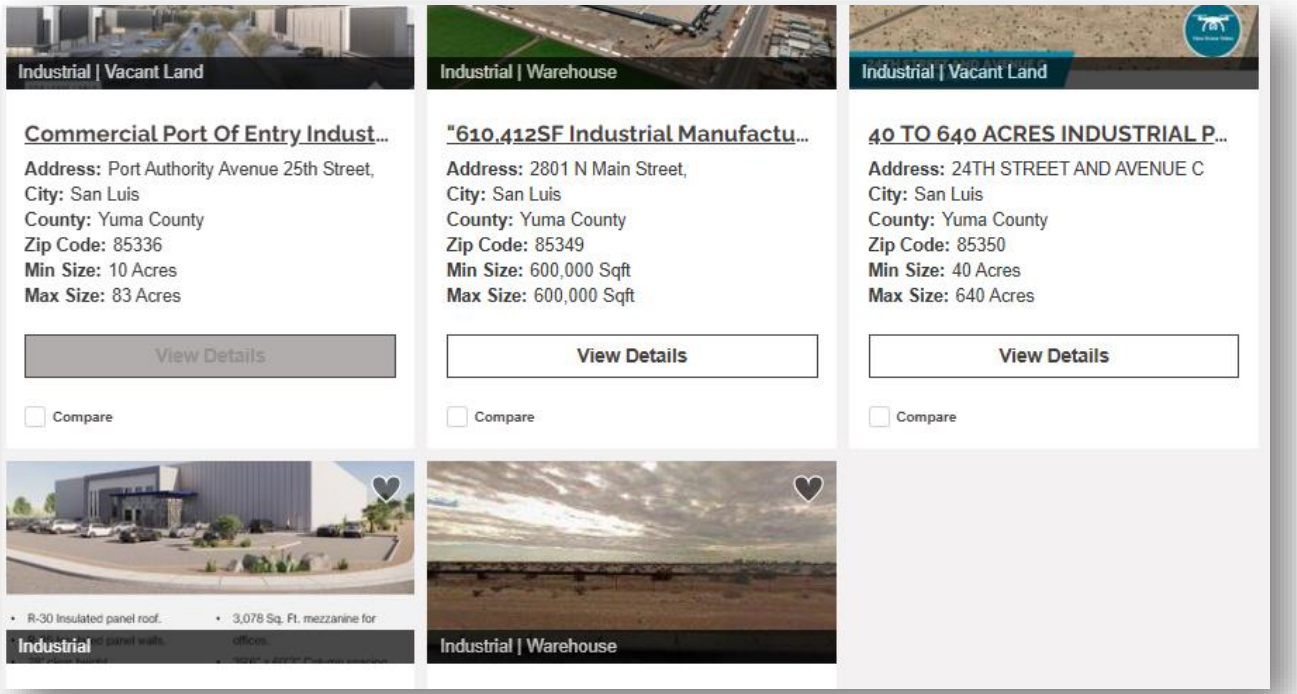
Spanish Regional Industry Guide

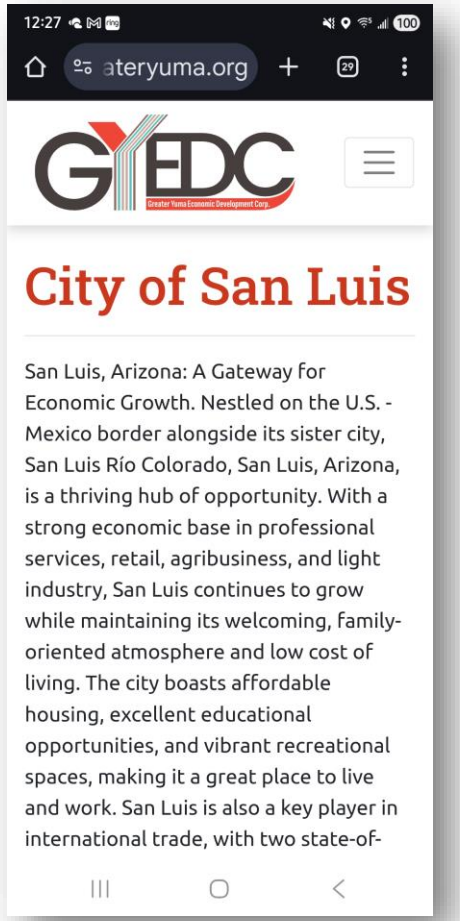
Spanish Foreign Trade Zone Guide

San Luis Property Site Visits

521
Visits so far!

150+
San Luis
Page Visits

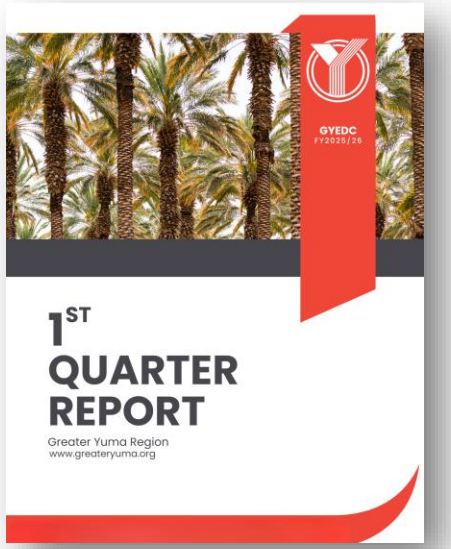


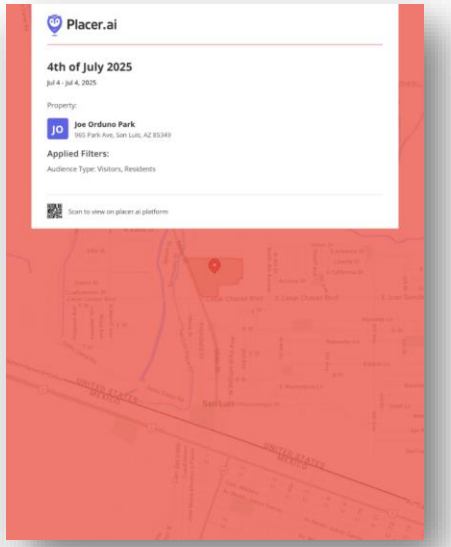


Data for Q1/Q2

Data/Reports/Leads *Data for Q1/Q2*

8
Reports so far!





80+
Leads so far!

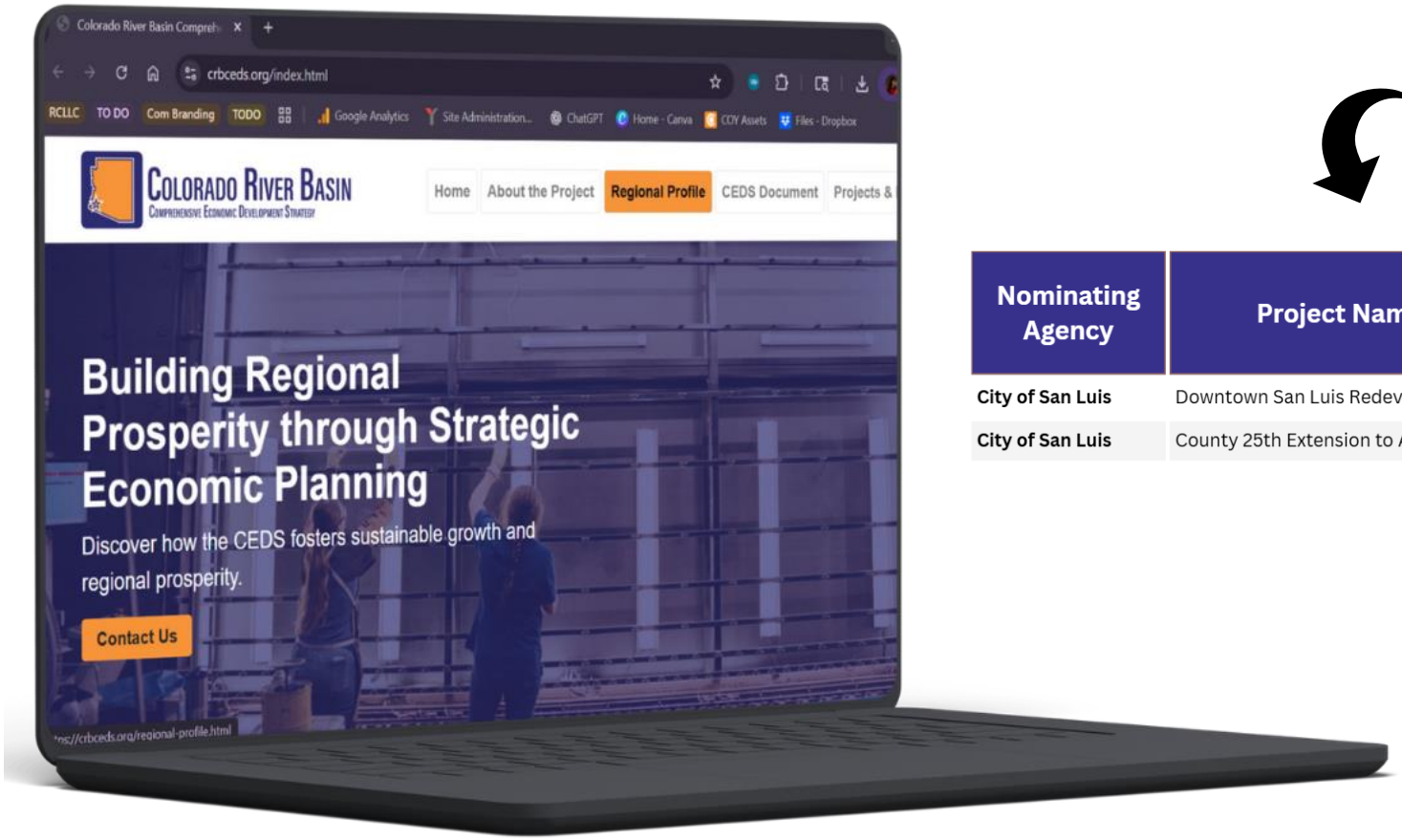
Retail Leads
(notable companies):

- Starbucks
- US Bank
- Walmart
- Burger King
- Kroger
- Rite Aid
- Party City
- Family Dollar

Reports Included:

- 1 Event Reports
- 1 Traffic Report
- 3 Wage/Industry Snapshot Report
- 1 Manufacturing Snapshot Report
- 1 Quarterly Report
- 1 Five-Year Report

Colorado River Basin
Comprehensive Economic Development Strategy



2

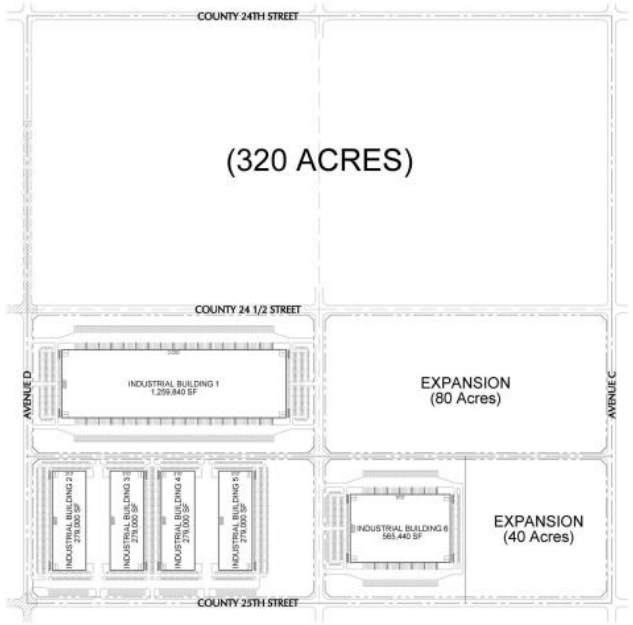
Projects added

Nominating Agency	Project Name/Description	Estimated Total Cost	Identified Local Share	Potential EDA Assistance Requested
City of San Luis	Downtown San Luis Redevelopment Design	$500,000	$0	$500,000
City of San Luis	County 25th Extension to Avenue B Design	$750,000	$0	$750,000

Von Verde Mega Site

CONCEPTUAL SITE PLANS

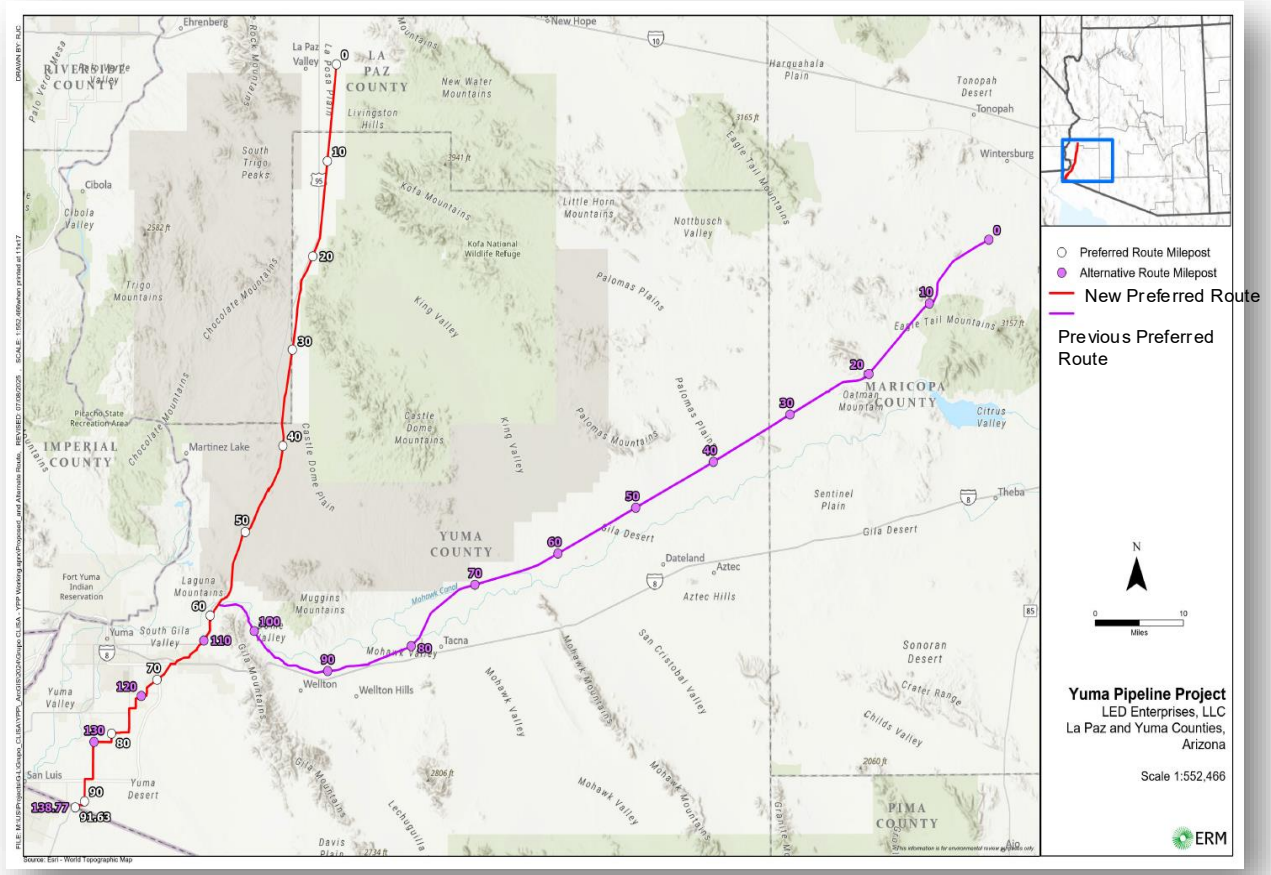
40 ACRES TO 640 ACRES AVAILABLE
"ALL OR PART"
"CONCEPTUAL SITE PLANS SHOWN BELOW"



4 | 24th Street and Avenue C | San Luis (Yuma), AZ 85364

BINSWANGER
Established 1931

Grupo Clisa Gas Line



Thank you!

GYEDC

Greater Yuma Economic Development Corp.

AGENDA ITEM REVIEW FORM

Regular City Council Meeting **6. A.**

Meeting Date: 02/11/2026

Summary

MINUTES OF

- Regular Council meeting held January 14, 2026
- Special Council meeting held January 16, 2026

Attachments

1/14/2026 RCM

1/16/2026 SCM

M I N U T E S
Regular Council Meeting
San Luis City Council
San Luis Council Chambers
1090 E. Union Street
San Luis, AZ 85349
January 14, 2026
6:00 p.m.

1. CALL TO ORDER/ROLL CALL

Mayor Nieves Riedel called the meeting to order at approximately 6:00 p.m.

PRESENT:
Council Member Luis E. Cabrera (left at approximately 7:05 p.m.)
Council Member Maria Cecilia Cruz
Vice Mayor Tadeo Azael De La Hoya
Council Member Esteban C. Rosales
Council Member Lizeth Servin
Council Member Javier Vargas
Mayor Nieves Riedel (left at approximately 7:03 p.m.)

OTHERS PRESENT:
Jenny Torres, Acting City Manager
Kay Macuil, City Attorney
Sonia Cornelio, City Clerk
Adela Cortez, Director of Human Resources
Alan Guevara, Police Lieutenant
Albert Moreno, IT Technician
Angelica Roldan, Director of Parks & Recreation
Antonio Maldonado, Multimedia Production & Operations Specialist
Armando Esparza, Director of Economic Development
Damian Miller, Police Lieutenant
Edgar Esparza, Billing & Collections Manager
Emmanuel Botello, Police Lieutenant
Eulogio Vera, Director of Public Works
Francia Alonso, Public Information Officer
Jeremy Humphrey, Fire Battalion Chief
Jose Guzman, Director of Development Services
Jorge Perez, Assistant Director of Public Works
Juan Tejeda, Acting Assistant Director of Development Services
Manuel Hernandez, Assistant Director of Public Works
Miguel Ramirez, Finance Accounting Manager
Nigel Reynoso, Police Chief
Olivia Jenkins, Administrative Services Manager
Richard Bauermann, Fire Inspector
Roula Encinas, Director of Finance
Tomas Sanchez, City Engineer
Victor De La Torre, Safety Officer

Alex Bejarano, Regional Center for Border Health
Amanda Aguirre, President/CEO for Regional Center For Border Health
Ana Lomeli, Resident
Christian Cuevas, Meeting Interpreter
Elida Valenzuela, Police Chaplain
Eric Jones, Business Owner
Fabher Sanchez, Resident
Glenn Gimbut, Attorney/Resident
James Allen Jr, Resident
Luisa Arreola, Resident
Manuel Rojas, Resident
Mark Concha Jr., Resident
Matias Rosales, Resident
Raul Lomeli, Resident
Vianey Vega, Vega and Vega Engineering

2. PLEDGE OF ALLEGIANCE

Council Member Maria Cecilia Cruz led the Pledge of Allegiance.

3. INVOCATION

The invocation was performed by Ms. Elida Valenzuela, Police Chaplain.

4. CALL TO THE PUBLIC

Mr. James Allen Jr., 1549 E. Babbitt Lane, San Luis, AZ, commented that there will be three (3) major projects in the City of San Luis. Two (2) projects will commence in March: the Juan Sanchez Boulevard widening, Frontier Health Center, a facility that will break ground, and Onvida Health on Main Street. Many residents are curious to know how this will affect them when construction begins. The other significant situation is the southbound lines to Mexico on Fridays on Main Street. On a separate note, he asked the City Council and staff to support the Special Olympics scheduled for March. The kids with special needs are a jewel and a crown as they work hard along with the educators.

Mr. Francisco Gonzalez, a resident of San Luis, AZ, commented that, as a parent deeply committed to the future of the city's children, he advocates for the creation of a high-level sports complex in the city. A dedicated facility with professional-grade soccer fields where the youth can train, compete, and grow to their full potential. It is often spoken about infrastructure in terms of roads and buildings, and asked the City Council to consider this project as an investment in human infrastructure. The children possess extraordinary talent and a deep passion for soccer. Yet, many lack access to safe, high-quality facilities where the talent can truly flourish.

Mayor Nieves Riedel asked Mr. Gonzalez to deliver the information to Ms. Olivia Jenkins, Administrative Services Manager.

5. PROCLAMATION/PRESENTATION

5. A. Proclamation on Education Day - January 24, 2026

Mrs. Sonia Cornelio, City Clerk, read the proclamation by title only.

5. B. Presentation of Awards to Officers Edgar Renteria, Abraham Lopez, Jose Encinas, and Supervisor Gaby Guevara. (Nigel Reynoso, Chief of Police)

Mr. Nigel Reynoso, Chief of Police, presented awards for three (3) separate incidents. Ms. Gaby Guevara was presented with the Letter of Commendation for her efforts to meet compliance standards during the 2025 Arizona Criminal Justice Information System audit conducted by the Arizona Department of Public Safety.

Officer Jose Encinas Partida received the Letter of Commendation for life-saving efforts during a vehicle rollover on December 5, 2025.

The Life Saving Award was presented to Officers Abraham Lopez and Edgar Renteria for their outstanding performance and action taken in the saving and preservation of a human life on October 14, 2025.

6. CONSENT AGENDA

6. A. MINUTES OF
- Regular Council meeting held December 10, 2025

6. B. DISBURSEMENTS
From December 9, 2025, to January 2, 2026
Total $6,450,432.51 **(Six Million, Four Hundred Fifty Thousand, Four Hundred Thirty-Two Dollars and Fifty-One Cents)**

MOTION: Council Member Luis E. Cabrera/Council Member Javier Vargas to approve the Consent Agenda. The motion passed unanimously.

The vote was as follows:

Council Member Luis E. Cabrera	Aye
Council Member Maria Cecilia Cruz	Aye
Vice Mayor Tadeo Azael De La Hoya	Aye
Council Member Esteban C. Rosales	Aye
Council Member Lizeth Servin	Aye
Council Member Javier Vargas	Aye
Mayor Nieves Riedel	Aye

7. DISCUSSION AND POSSIBLE ACTION ITEMS:

7. A. Public hearing followed by discussion and possible action on any and all matters regarding Minor Amendment Case No. 2025-0273 and Resolution No. 2388. A Resolution of the Mayor and City Council of the City of San Luis, Arizona, amending the 2040 General Plan to change the land use designation of 3.13 acres of land being a portion of parcel located at the northwest corner of 6th Avenue and Urtuzuastegui Street from Mixed-Use Activity Center (MU) to Medium Density Residential (MDR); Repealing any conflicting provisions; and providing for severability. (Jose A. Guzman, Director of Development Services)

Council Members Lizeth Servin and Javier Vargas declared a conflict of interest on this item and the next one.

A. Staff presentation

Mr. Jose Guzman, Director of Development Services, stated that this is a request by Comite De Bienestar to change the land use designation of the General Plan. This is not changing the zoning, but the land use, which determines the permitted zoning for that land use. Staff ensure that every request complies with the City Code and state law, and meets the findings required by the General Plan. Staff worked with the applicant to address some of the neighbors' concerns, which will be addressed on the application in the next agenda item. This request was reviewed by staff and determined that it meets the state law, City Code and the 2040 General Plan. Staff recommends approval of Resolution No. 2388 and the amendment.

B. Open Public Hearing

Mayor Nieves Riedel opened the Public Hearing.

C. Call to the public on this item

Mr. Eric Jones, a local business owner in the San Luis Industrial Park, mentioned that the location where Comite De Bienestar wants to build homes and apartments was supposed to be a buffer zone, but that is no longer the case. Although the entrance to the housing development is off 6th Avenue, it is right on the corner of 6th Avenue and Urtuzuastegui Street, which is a commercial corridor for the Industrial Park businesses, the Port of Entry of 16 lanes of traffic and a major thoroughfare for the residents of San Luis. With so much traffic and so many families with children residing in the new housing development, there is a risk of accidents. His clients at Arizona Secure Self Storage are mainly San Luis residents, and they will have trouble accessing their units due to traffic and limited access. This also affects other nearby businesses that work all hours of the day, as this would create a traffic jam. He asked if a traffic study had been done. And if so, was it done before the land was acquired by Comite de Bienestar? He added that Comite De Bienestar is a customer of his and supports what they do for the community, but he strongly recommended that they find other options for the land.

Mr. Jonathan Piceno, 1335 E. Udall Lane, San Luis, AZ, said that the residents within 300 feet, received a letter about the intention of the project informing them of what they were going to be dealing with in terms of at the time, a three (3) story building, then in conversations with Vega and Vega Engineering, Comite De Bienestar and representatives went down to a two (2) story building, then to a one (1) story or just town-homes. He added that all this information has been flowing back and forth in meetings, outside of meetings and conversations. His main concern during the Planning & Zoning Commission meeting was parking, and he noticed that Comite De Bienestar has posted signs that say "no parking here," as additional parking has been added on the vacant land adjacent. He can now attest that, while they might meet the parking space criteria for phase 2, they can build a potentially multi-story building. They would still deal with high-density housing, where people have multiple cars in one (1) home. There are already cars parked around his house, as well as in areas without a sign that says "do not park here" within the parcels. Another concern for a multi-story building is privacy for residents in the area affected. He believes the Planning & Zoning Commission recommended that the City Council not approve the rezoning. For the most part, they are not as concerned with medium density as with medium high density, as that opens the door to future projects. He asked what benefits this project will bring to the community.

Mr. James Allen Jr., 1549 E. Babbitt Lane, San Luis, AZ, asked: When industrial land is changed over to residential, is there a guideline for how deep you have to dig to remove the previous soil? Is this correct?

Mayor Nieves Riedel responded that the item being discussed is not industrial and Mr. Guzman can provide that information to him.

Ms. Betsy, 464 6th Place, San Luis, AZ, stated that the proposed plans have changed significantly since the meetings, to the point that Comite De Bienestar now wants to build townhouses. It is very much appreciated that Comite De Bienestar and Vega and Vega Engineering want to work with the community, but rezoning does not guarantee that they will not want to build the apartments in the future. Comite de Bienestar is saying they will not build apartments, three (3) story buildings, nor lose privacy. However, residents were informed that Comite de Bienestar is seeking additional funding to build more townhomes. This might be in five (5), ten (10), or 15 years, but nothing guarantees residents that Comite De Bienesar will not build those buildings. As Mr. Jones indicated earlier, that area was a buffer zone, but things changed over time. This organization is a non-profit; however, they are looking to build and get back what they have invested, which would make them no longer a non-profit but a for-profit organization. Building in that area takes more away from the city than it gives back. The city does not have the infrastructure and funding needed as the city grows, as San Luis is one of the fastest-growing cities in Arizona. The City of San Luis Police Department currently has approximately 57 Police Officers. According to the 2024 census, San Luis's population is 40,064, which means there are 1.4 officers per 1,000 residents.

She added that, therefore, as a city, San Luis is under the state average of 1.7 officers per 1,000 residents; more homes, more people; she asked, " Where is the safety for the city? Neighbors in that zone want to see more parks, green areas, and recreational areas. There are other options that can be built there other than homes.

Mayor Nieves Riedel clarified that the piece of land could never have been used as a buffer because it is state land, not city property. Federal and state land are sacred, and the City of San Luis has nothing to do with it. The city cannot decide what to do in land that belongs to the state or federal government.

Mr. Barry Olson, 350 W. 16th Street, Suite #107, Yuma, AZ, indicated he represented Comite De Bienestar for quite number of years and, like most developers in San Luis, Comite De Bienestar has the interest of the community and can see the efforts Comite De Bienestar went through to come up with a proposal and project that works for this property. He added that Mayor Nieves Riedel made some good comments about this being formerly state property and then the fact that this is not only state property. The City of San Luis is a little unique in that it has so much state and federal property surrounding the city, which has somewhat constricted development, but it can be very difficult. He has heard numerous explanations for why the state has been difficult to deal with in facilitating property sales to local developers for development in San Luis, Yuma County. His concern is that, according to what he has heard through the State Land Department, they do not like to sell property for speculative development. They want something to occur on that property. But if this property is not allowed to develop and Comite De Bienestar paid a very expensive premium for this property, his concern is that if the state sees that the city does not support development on formerly state land that is been sold to private developers, will be used against the city and local developers in trying to have the state free up state property for sale for future development and expansion of San Luis. This is a legitimate concern that needs to be considered to ensure this does not become a negative use against the City of San Luis in the future.

Mayor Nieves Riedel also commented on and clarified the city's growth. There have been 37 new developments in the city in the last 25-30 years. Every single one of those developments in the last 15 years has already paid for the Police Department, Parks and Recreation, Fire Department, sidewalks, and streets. Not only are they paying for those particular 37 subdivisions, but for the rest of the city for all these services. There are people who think that those who build subdivisions, that the city or the government is paying for this, developers are paying for this, and then the residents pay a quota, as they do not pay property taxes. They pay $190.00 to $300.00 a year, while the rest of the city receives the same services these new subdivisions are getting.

Council Member Luis E. Cabrera thanked the residents present, especially for coming and for sharing their ideas and what intrigues them about this development. He was glad to hear Mr. Piceno say that Comite De Bienestar and Vega and Vega Engineering were willing to work with them and address their concerns, because that truly shows they are here for the community and to listen to what they shared. Sadly, the city does not have a property tax and is one of the few cities in the entire State of Arizona that do not. That property tax could help address the police shortage and many other areas. He provided an example of how development supports the city's growth. Just last month, the City Manager shared an item on the Council where she needed to find $2.5 million, approximately, for the growth and the expansion of Cesar Chavez Boulevard, and that money came from development fees, which is money that goes into a specific pot and is used for the growth of the community. So, thanks to that, the city was able to get the project approved through the Arizona Department of Transportation Board and the expansion of the Cesar Chavez Boulevard is going to happen. Should the city have no money or the growth that the city experienced in recent years, the city would probably be struggling to find the funding, and then another benefit that Comite De Bienestar gives to the community, although it was mentioned it was more for profit, but they provide affordable housing. Housing America and Comite De Bienestar provide affordable housing and because of Comite De Bienestar, some of his family members can own a home. He knows privacy is important and thanked Comite De Bienestar for not including the apartments and for listening to the community, but on the side of the Council, especially knowing that the community needs these types of programs, it is hard not support them because they are giving the opportunity for many people to become homeowners. They are truly affordable housing, as they work with people from all income levels, and they also support low-income communities and affordable housing, which is a great benefit for the community.

Council Member Esteban C. Rosales added that most developers have a certain process in how they go about traffic studies and they have shown that they are willing to work with the community. He asked Mr. Guzman to explain the process that a developer must go through to make something like this happen.

Mr. Guzman explained that part of the process of the rezoning is so the city can implement conditions and every rezoning includes a condition that a traffic study is required to see the impact that the project is going to have on the area and any recommendation that is made based on that impact study, then the developer has to construct them at their cost.

Vice Mayor Tadeo Azael De La Hoya stated that he personally met with the neighbors about their concerns. He asked Mr. Guzman for the record to read what the rezoning will be conditioned on.

Mr. Guzman replied that the conditions are:

1. Development shall comply with all city zoning regulations, subdivision regulations, building codes, and applicable state and federal requirements.

2. A Traffic Impact Study shall be submitted during subdivision or site plan review. The developer shall construct or fund all roadway improvements required by the Traffic Impact Study.

3. Townhome buildings adjacent to the northern property boundary shall be limited to one (1) story to protect privacy for existing homeowners.

4. The developer shall comply with all dust control, grading, compaction, and construction vibration standards.

Mayor Nieves Riedel also added that, usually, a traffic study is not requested beforehand. She was able to talk to the people from Comite de Bienestar, and they got together with the city, and they came to an agreement. Because she requested that Comite De Bienestar order the traffic study, they went out of their way to show good faith and order it even though they did not have to. However, it is going to be up to Comite de Bienestar to continue, or not, once they obtain the results from the traffic study. Comite de Bienestar showed their willingness to listen to the community's concerns as they want to be good neighbors.

D. Close Public Hearing

MOTION: Council Member Esteban C. Rosales/Council Member Luis E. Cabrera to close the Public Hearing. The motion passed with five (5) Ayes and two (2) Abstentions by Council Members Lizeth Servin and Javier Vargas.

The vote was as follows:

Council Member Luis E. Cabrera	Aye
Council Member Maria Cecilia Cruz	Aye
Vice Mayor Tadeo Azael De La Hoya	Aye
Council Member Esteban C. Rosales	Aye
Council Member Lizeth Servin	Abstained
Council Member Javier Vargas	Abstained
Mayor Nieves Riedel	Aye

E. Action on Resolution No. 2388

MOTION: Council Member Esteban C. Rosales/Council Member Maria Cecilia Cruz to approve and adopt Resolution No. 2388. The motion passed with five (5) Ayes and two (2) Abstentions by Council Members Lizeth Servin and Javier Vargas.

The vote was as follows:

Council Member Luis E. Cabrera	Aye
Council Member Maria Cecilia Cruz	Aye
Vice Mayor Tadeo Azael De La Hoya	Aye
Council Member Esteban C. Rosales	Aye
Council Member Lizeth Servin	Abstained
Council Member Javier Vargas	Abstained
Mayor Nieves Riedel	Aye

7. B. Public Hearing followed by discussion and possible action on any and all matters regarding Rezoning Case No. 2025-0274 and Ordinance No. 475. An Ordinance of the Mayor and City Council of the City of San Luis, Arizona, amending the Official Zoning Map of the City of San Luis by changing the zoning classification of approximately 3.13 acres from Rural Area Residential (RA-10) to Medium-High Density Residential (R-2) on property located at the northwest corner of 6th Avenue and Urtuzuastegui Street; repealing any conflicting provisions; and providing for severability. (Jose A. Guzman, Director of Development Services)

Council Members Lizeth Servin and Javier Vargas declared a conflict of interest on this item and abstained from participating in any discussion and decision.

A. Staff presentation

Mr. Jose Guzman, Director of Development Services, said that this is the rezoning for the project. Staff recommended conditions addressing the traffic study, any applicable regulations, and the limitation of one (1) story buildings in the northern portion of the property. He added that on R-2, there is a maximum number of townhomes they can build under the zoning, which is a density maximum. In the area where the apartments were proposed, the zoning will remain as it is now, meaning no apartments are allowed. If they decide to build apartments in the future, they will have to go through the rezoning process, including notifying neighbors, holding public hearings, etc.

B. Open Public Hearing

Mayor Nieves Riedel opened the Public Hearing.

C. Call to the public on this item

Mr. Jonathan Piceno, 1335 E. Udall Street, San Luis, AZ, stated that he would never oppose the City of San Luis expanding or developing. He thanked the City Council and staff for clarification regarding his concerns.

D. Close Public Hearing

MOTION: Council Member Esteban C. Rosales/Council Member Luis E. Cabrera to close the Public Hearing. The motion passed with five (5) Ayes and two (2) Abstentions by Council Members Lizeth Servin and Javier Vargas.

The vote was as follows:

Council Member Luis E. Cabrera	Aye
Council Member Maria Cecilia Cruz	Aye
Vice Mayor Tadeo Azael De La Hoya	Aye
Council Member Esteban C. Rosales	Aye
Council Member Lizeth Servin	Abstained
Council Member Javier Vargas	Abstained
Mayor Nieves Riedel	Aye

E. Action on Ordinance No. 475 by title only

MOTION: Council Member Luis E. Cabrera/Council Member Esteban C. Rosales to approve the reading of Ordinance No. 475 by title only. The motion passed with five (5) Ayes and two (2) Abstentions by Council Members Lizeth Servin and Javier Vargas.

The vote was as follows:

Council Member Luis E. Cabrera	Aye
Council Member Maria Cecilia Cruz	Aye
Vice Mayor Tadeo Azael De La Hoya	Aye
Council Member Esteban C. Rosales	Aye
Council Member Lizeth Servin	Abstained
Council Member Javier Vargas	Abstained
Mayor Nieves Riedel	Aye

Mrs. Sonia Cornelio, City Clerk, read Ordinance No. 475 by title only.

F. Action on Ordinance No. 475

MOTION: Council Member Luis E. Cabrera/Council Member Esteban C. Rosales to approve and adopt Ordinance No. 475. The motion passed with five (5) Ayes and two (2) Abstentions by Council Members Lizeth Servin and Javier Vargas.

The vote was as follows:

Council Member Luis E. Cabrera	Aye
Council Member Maria Cecilia Cruz	Aye
Vice Mayor Tadeo Azael De La Hoya	Aye
Council Member Esteban C. Rosales	Aye
Council Member Lizeth Servin	Abstained
Council Member Javier Vargas	Abstained
Mayor Nieves Riedel	Aye

Ms. Kay Macuil, City Attorney, stated that when there is a protest to a zone change, it requires ¾ of the remaining votes after abstentions; therefore, four (4) votes were needed to pass. There were a total of five (5) votes, so it passed.

Mayor Nieves Riedel asked Vice Mayor Tadeo Azael De La Hoya to preside over the meeting, as she has a conflict of interest regarding some agenda items.

Vice Mayor Tadeo Azael De La Hoya moved Item No. 7.G. to be next on the agenda at the request of Ms. Amanda Aguirre. There was no opposition from the City Council.

7. G. Discussion and possible action on any and all matters regarding Resolution No. 2390. A Resolution of the Mayor and City Council of the City of San Luis, Arizona, amending Resolution No. 2334, as previously amended by Resolution No. 2375, concerning the issuance of debt by the Industrial Development Authority of the City of San Luis, Arizona, the proceeds of which are to be used for the construction of the Regional Center for Border Health, Inc.'s new hospital facilities, and declaring an emergency. (Kay Marion Macuil, City Attorney)

(6 votes in favor are required to pass immediately as an emergency per A.R.S. § 19-142.)

Ms. Kay Macuil, City Attorney, explained that on October 2025, there was a bond issue through the Industrial Development Authority (IDA) for $80 million. The IDA is a vehicle to be able to sell bonds so that the interest on the bonds that the bondholders have is tax free through federal income tax regulation. And then it came back again on September 10,, 2025 to up the amount of the loan to $100 million and today for $110 million due to the cost increase. So this is just to issue the bonds and it has to go through the City Council, as part of the regulations.

MOTION: Council Member Javier Vargas/Council Member Esteban C. Rosales to approve and adopt Resolution No. 2390 and declare an emergency. The motion passed with six (6) Ayes and one (1) Abstention by Mayor Nieves Riedel.

The vote was as follows:

Council Member Luis E. Cabrera	Aye
Council Member Maria Cecilia Cruz	Aye
Vice Mayor Tadeo Azael De La Hoya	Aye
Council Member Esteban C. Rosales	Aye
Council Member Lizeth Servin	Aye
Council Member Javier Vargas	Aye
Mayor Nieves Riedel	Abstained

7. C. Discussion and possible action on any and all matters regarding Resolution No. 2389. A Resolution of the Mayor and City Council of the City of San Luis, Arizona, approving the El Corazon de San Luis: Cultural & Economic Revitalization Plan; repealing conflicting provisions; and providing for severability. (Armando Esparza, Director of Economic Development and Josh Lapp, Designing Local)

Mr. Armando Esparza, Director of Economic Development, mentioned that staff has been working on the Cultural and Economic Revitalization Plan with the Economic Development Commission for about a year. The San Luis Economic Development Commission previously recommended the formation of a historic, cultural, and heritage-based Economic Development Committee, which the San Luis City Council created on March 12, 2025. This plan was paid for by the Thriving Communities Program, and along with the Commission and staff, has engaged with local and statewide partners to explore heritage-based revitalization efforts. This plan was put together by Designing Local, and they will provide a brief presentation on it. This plan proposes a framework to revitalize downtown San Luis through revitalization, adaptive reuse, public art, and placemaking. Mr. Esparza introduced Mr. Josh Lapp from Designing Local, who will be providing a presentation remotely.

Mr. Lapp gave a brief presentation of his team and introduced Ms. Megan Adornetto. Ms. Adornetto spoke about the plan overview, which included the introduction, historic context, engagement report, community revitalization, and public art.

Mr. Esparza stated that staff is requesting approval of the plan through Resolution No. 2389 so the department can begin seeking grant funding for a public art program. Staff will work with Parks & Recreation and other departments to identify sites and involve local community artists in submitting proposals. He also spoke about historic preservation to build a toolkit for property owners.

Members of the City Council thanked Mr. Esparza and expressed that they like the idea and the name of El Corazon de San Luis.

MOTION: Council Member Javier Vargas/Council Member Esteban C. Rosales to approve and adopt Resolution No. 2389, as presented. The motion passed unanimously.

The vote was as follows:

Council Member Maria Cecilia Cruz	Aye
Vice Mayor Tadeo Azael De La Hoya	Aye
Council Member Esteban C. Rosales	Aye
Council Member Lizeth Servin	Aye
Council Member Javier Vargas	Aye

7. D. Discussion and possible action on any and all matters regarding authorization to purchase annual ammunition for the San Luis Police Department using fiscal year 2026 budgeted funds. (Alan Guevara, Lieutenant)

Mr. Alan Guevara, Police Lieutenant, stated that the San Luis Police Department is requesting to use Fiscal Year 2026 budgeted funds to purchase ammunition. The purchase will be made with the vendor, San Diego Police Equipment. San Diego Police Equipment is the sole source authorized distributor of federal ammunition for the state of Arizona. The total purchase amount is $71,316.23 and requires the City Council's approval because it exceeds the $45,000.00 purchasing limit. Bidding is not required because this falls under Exclusive Services of the City Code - Purchasing § 3.05.020.

MOTION: Council Member Esteban C. Rosales/Council Member Lizeth Servin to approve the purchase of ammunition to the San Luis Police Department for a total amount not to exceed $72,000.00, as presented. The motion passed unanimously.

The vote was as follows:

Council Member Maria Cecilia Cruz	Aye
Vice Mayor Tadeo Azael De La Hoya	Aye
Council Member Esteban C. Rosales	Aye
Council Member Lizeth Servin	Aye
Council Member Javier Vargas	Aye

7. E. Discussion and possible action on any and all matters regarding authorization to purchase uniform items for the San Luis Police Department using fiscal year 2026 budgeted funds. (Emmanuel Botello, Lieutenant)

Mr. Emmanuel Botello, Police Lieutenant, mentioned that the San Luis Police Department is requesting to use Fiscal Year 2026 budgeted funds to purchase uniforms, specifically bulletproof vests from the vendor Precision Uniforms. The total purchase amount will exceed the $45,000.00 purchasing limit with multiple purchases. Staff asked the City Council to waive the formal bidding procedure, as allowed under Procurement Code 3.05.010 (F), for vests and to ratify previous uniform purchases that exceeded the threshold.

MOTION: Council Member Javier Vargas/Council Member Maria Cecilia Cruz to waive formal bidding procedures, ratify uniform items already purchased, and allow the purchase of police uniform vests from Precision Uniforms to exceed the $45,000.00 purchase limit. The motion passed unanimously.

The vote was as follows:

Council Member Maria Cecilia Cruz	Aye
Vice Mayor Tadeo Azael De La Hoya	Aye
Council Member Esteban C. Rosales	Aye
Council Member Lizeth Servin	Aye
Council Member Javier Vargas	Aye

7. F. Public Hearing followed by discussion and possible action on any and all matters regarding the recommendation of the Liquor License Application submitted to the Arizona Department of Liquor Licenses and Control by Rivan Saad Nona on behalf of Habibi Spirits, located at 1922 Cesar Chavez Boulevard, San Luis, Arizona. (Sonia Cornelio, City Clerk)

A. Staff and/or Applicant presentation

Mrs. Sonia Cornelio, City Clerk, stated that the City Clerk's Office received this application and the notice, and they were posted at the proposed premises for the 20 required days, as indicated by state law. Her office did not receive any comments or phone calls in favor of or against the application. Staff recommended approval of the recommendation for this liquor license application.

B. Open Public Hearing

Vice Mayor Tadeo Azael De La Hoya opened the Public Hearing.

C. Call to the public on this item

There were no comments from the public on this item.

D. Close Public Hearing

Vice Mayor Tadeo Azael De La Hoya opened the Public Hearing.

E. Action on the recommendation of the Liquor License Application to the Arizona Department of Liquor Licenses and Control for Habibi Spirits.

MOTION: Council Member Esteban C. Rosales/Council Member Javier Vargas to recommend approval of the Liquor License Application to the Arizona Department of Liquor Licenses and Control for Habibi Spirits, as presented. The motion passed unanimously.

The vote was as follows:

Council Member Maria Cecilia Cruz	Aye
Vice Mayor Tadeo Azael De La Hoya	Aye
Council Member Esteban C. Rosales	Aye
Council Member Lizeth Servin	Aye
Council Member Javier Vargas	Aye

7. H. Discussion and possible action on any and all matters regarding Ordinance No. 471. An Ordinance of the Mayor and City Council of the City of San Luis, Arizona, amending certain San Luis City Codes to conform penalties with Ordinance No. 466; repealing any conflicting provisions; and providing for severability. (ITEM CONTINUED FROM THE REGULAR MEETING OF NOVEMBER 12, 2025). (Kay Marion Macuil, City Attorney)

Ms. Kay Macuil, City Attorney, explained that the municipal judge requested that fees be added to the ordinances in the City Code. There are fees and surcharges the state requires, and the current penalty section states that the fine amount shall not exceed a specific dollar amount. Staff is amending the previous ordinance to conform to the penalties. It is a clean-up of the previous ordinance.

A. Action on Reading of Ordinance No. 471 by title only

MOTION: Council Member Javier Vargas/Council Member Esteban C. Rosales to approve the Reading of Ordinance No. 471 by title only. The motion passed unanimously.

The vote was as follows:

Council Member Maria Cecilia Cruz	Aye
Vice Mayor Tadeo Azael De La Hoya	Aye
Council Member Esteban C. Rosales	Aye
Council Member Lizeth Servin	Aye
Council Member Javier Vargas	Aye

Mrs. Sonia Cornelio, City Clerk, read Ordinance No. 471 by title only.

B. Action on Ordinance No. 471

MOTION: Council Member Javier Vargas/Council Member Esteban C. Rosales to approve and adopt Ordinance No. 471, as presented. The motion passed unanimously.

The vote was as follows:

Council Member Maria Cecilia Cruz	Aye
Vice Mayor Tadeo Azael De La Hoya	Aye
Council Member Esteban C. Rosales	Aye
Council Member Lizeth Servin	Aye
Council Member Javier Vargas	Aye

7. I. Discussion and possible action on any and all matters regarding Ordinance No. 472. An ordinance of the Mayor and City Council of the City of San Luis, Arizona, amending and restating City Code sections 8.25.010 and 8.25.020(A) to include hazardously large mud clods on roadways as a nuisance; repealing conflicting provisions, and providing for severability. (ITEM CONTINUED FROM THE SPECIAL COUNCIL MEETING HELD ON DECEMBER 17, 2025) (Kay Marion Macuil, City Attorney)

Ms. Kay Macuil, City Attorney, mentioned that she received feedback from a Sergeant in the Police Department and a Council Member that mud, by itself, did not address the mud clods that formed and and that fall off the farming equipment. Therefore, she reworded it to be clearer. Mud clods are so large that they obstruct or otherwise affect ordinary public use, and the streets cause traffic to swerve from lanes, or traffic to suddenly stop or slow down to avoid them. This will be in the nuisance section and would be enforceable as a civil offense. In the definition section, it reads “A party shall not allow large mud clods and dirt and other debris to obstruct the traffic on any part of the public right of way”. The party responsible is the property owner or another responsible party, if they can be found, such as the person driving the truck. But if all they can see is a big clod of dirt, then it is the adjacent landowner. She also included the definition of a responsible person.

Mr. Nigel Reynoso, Chief of Police, added that it will depend on the investigation who receives the citation, but whoever the Police Department finds responsible, of course, in some cases, they may not be able to find someone responsible. If it is appropriate or obvious, they will use their discretion, and it could start with a warning citation or an actual citation.

A. Action on Reading of Ordinance No. 472 by title only

MOTION: Council Member Esteban C. Rosales/Council Member Lizeth Servin to approve the Reading of Ordinance No. 472 by title only. The motion passed unanimously.

The vote was as follows:

Council Member Maria Cecilia Cruz	Aye
Vice Mayor Tadeo Azael De La Hoya	Aye
Council Member Esteban C. Rosales	Aye
Council Member Lizeth Servin	Aye
Council Member Javier Vargas	Aye

Mrs. Sonia Cornelio, City Clerk, read Ordinance No. 472 by title only.

B. Action on Ordinance No. 472

MOTION: Council Member Esteban C. Rosales/Council Member Javier Vargas to approve and adopt Ordinance No. 472, as presented. The motion passed unanimously.

The vote was as follows:

Council Member Maria Cecilia Cruz	Aye
Vice Mayor Tadeo Azael De La Hoya	Aye
Council Member Esteban C. Rosales	Aye
Council Member Lizeth Servin	Aye
Council Member Javier Vargas	Aye

7. J. Discussion and possible action on any and all matters regarding Ordinance No. 476. An Ordinance of the Mayor and City Council of the City of San Luis, Arizona, Adding Chapter 9.40; Drunk and Disorderly to the San Luis City Code (Kay Marion Macuil, City Attorney)

Ms. Kay Macuil, City Attorney, informed that the Police Department requested this ordinance because they were having difficulty with drunken activity in downtown. This ordinance includes disorderly conduct while drunk.

There was some discussion, comments, questions and answers amongst the City Council and staff.

A. Action on Reading of Ordinance No. 476 by title only

MOTION: Council Member Javier Vargas/Council Member Lizeth Servin to approve the Reading of Ordinance No. 476 by title only. The motion passed unanimously.

The vote was as follows:

Council Member Maria Cecilia Cruz	Aye
Vice Mayor Tadeo Azael De La Hoya	Aye
Council Member Esteban C. Rosales	Aye
Council Member Lizeth Servin	Aye
Council Member Javier Vargas	Aye

Mrs. Sonia Cornelio, City Clerk, read Ordinance No. 476 by title only.

B. Action on Ordinance No. 476

MOTION: Council Member Maria Cecilia Cruz/Council Member Esteban C. Rosales to approve and adopt Ordinance No. 476, as presented. The motion passed unanimously.

The vote was as follows:

Council Member Maria Cecilia Cruz	Aye
Vice Mayor Tadeo Azael De La Hoya	Aye
Council Member Esteban C. Rosales	Aye
Council Member Lizeth Servin	Aye
Council Member Javier Vargas	Aye

7. K. Discussion and possible action on any and all matters regarding Ordinance No. 477. An Ordinance of the Mayor and City Council of the City of San Luis, Arizona, amending city code section 7.05.010 to add park hours and update references. (Kay Marion Macuil, City Attorney)

Ms. Kay Macuil, City Attorney, explained that the Police Department requested this ordinance regarding park hours. The park hours are in policy and on signs, but are not in an ordinance. It is trespassing, and the Police Department found it difficult to enforce and remove people from the park at night. This ordinance sets the hours for the parks and allows people to be removed at night. The section on the City Code is near the beginning of San Luis in 1982 and mentions Friendship Park, which no longer exists, so it is being removed from the City Code.

A. Action on Reading of Ordinance No. 477 by title only

MOTION: Council Member Esteban C. Rosales/Council Member Javier Vargas to approve the Reading of Ordinance No. 477 by title only. The motion passed unanimously.

The vote was as follows:

Council Member Maria Cecilia Cruz	Aye
Vice Mayor Tadeo Azael De La Hoya	Aye
Council Member Esteban C. Rosales	Aye
Council Member Lizeth Servin	Aye
Council Member Javier Vargas	Aye

Mrs. Sonia Cornelio, City Clerk, read Ordinance No. 477 by title only.

B. Action on Ordinance No. 477

MOTION: Council Member Esteban C. Rosales/Council Member Lizeth Servin to approve and adopt Ordinance No. 477, as presented. The motion passed unanimously.

The vote was as follows:

Council Member Maria Cecilia Cruz	Aye
Vice Mayor Tadeo Azael De La Hoya	Aye
Council Member Esteban C. Rosales	Aye
Council Member Lizeth Servin	Aye
Council Member Javier Vargas	Aye

8. SUMMARY OF CURRENT EVENTS

Council Member Maria Cecilia Cruz reported that some members of the City Council attended a tour at the state prison. She learned about the Dakota Unit Wildland Fire Academy, which aims to instill discipline, educate participants about a healthy lifestyle, and provide wildland firefighter training. Another thing is that they have a building there dedicated to making uniforms for all the state's inmates. The state prison is a huge facility. She thanked the state prison for inviting the City Council to the tour.

Council Member Esteban C. Rosales added that visiting the state prison is an eye-opening experience because the facility is very big. The Warden informed them that, of the 900 employees, 650 live in the City of San Luis. He said that the City Council now has a better understanding of its day-to-day operations.

Council Member Lizeth Servin commented that it was surprising and amazing that the Deputy Warren is someone she has known for 25-30 years. He is running the Arizona State Prison, and she feels very proud of him. Seeing people from the community grow within the community is rewarding. She also found out that his brother works for the San Luis Police Department.

9. ADJOURNMENT

Vice Mayor Tadeo Azael De La Hoya adjourned the Regular Council meeting at approximately 7:44 p.m.

APPROVED:

_____
Nieves Riedel, Mayor

ATTEST:

_____
Sonia Cornelio, City Clerk

CERTIFICATION

I hereby certify that the foregoing minutes are a true and correct copy of the minutes of the Regular City Council meeting of the City Council of the City of San Luis, Arizona, held on January 14, 2026. I further certify that the meeting was duly called and held and that a quorum was present.

_____
Sonia Cornelio, City Clerk

M I N U T E S
Special Council Meeting
San Luis City Council
San Luis Council Chambers
1090 E. Union Street
San Luis, AZ 85349
January 16, 2026
6:00 p.m.

1. CALL TO ORDER/ROLL CALL

Mrs. Sonia Cornelio, City Clerk, stated that with the Mayor and Vice Mayor being absent, and as authorized by City Code Section 2.05.440(A)(1), she would call the Special Council meeting to order. An Acting Mayor will now be selected to preside over the meeting, and a motion to appoint one is needed. After the Acting Mayor is selected, he/she may proceed with the roll call and the remaining agenda items.

MOTION: Council Member Javier Vargas/Council Member Lizeth Servin moved to appoint Council Member Luis E. Cabrera to lead the meeting. The motion passed unanimously.

The vote was as follows:

Council Member Esteban C. Rosales	Aye
Council Member Luis E. Cabrera	Aye
Council Member Lizeth Servin	Aye
Council Member Javier Vargas	Aye

Acting Mayor Luis E. Cabrera called the Special Council meeting to order at 6:01 p.m.

PRESENT: Acting Mayor Luis E. Cabrera
Council Member Esteban C. Rosales (via Teams)
Council Member Lizeth Servin
Council Member Javier Vargas

ABSENT: Council Member Maria Cecilia Cruz
Vice Mayor Tadeo Azael De La Hoya
Mayor Nieves Riedel

OTHERS PRESENT: Kay Macuil, City Attorney
Sonia Cornelio, City Clerk
Albert Moreno, IT Technician
Domingo Sosa, Graphics and Media Specialist

2. PLEDGE OF ALLEGIANCE

Council Member Lizeth Servin led the Pledge of Allegiance.

3. DISCUSSION AND POSSIBLE ACTION ITEMS:

3. A. Discussion and possible action on any and all matters regarding the appointment of a Vice Mayor. (Council Members Luis E. Cabrera, Lizeth Servin and Javier Vargas)

Acting Mayor Luis Cabrera stated that the Council had previously agreed to revisit the Vice Mayor position every December to provide each Council Member the opportunity to serve as Vice Mayor for at least one (1) year during their term. Unfortunately, this item was not included on the agenda this past December. He stated that the Council is present today to designate a new Vice Mayor. He further stated that Council Member Javier Vargas has served the Council for over three (3) years and expressed his desire to designate him as Vice Mayor.

MOTION: Acting Mayor Luis E. Cabera/Council Member Lizeth Servin to designate Council Member Javier Vargas to serve as Vice-Mayor. The motion passed unanimously.

The vote was as follows:

Council Member Esteban C. Rosales	Aye
Council Member Luis E. Cabrera	Aye
Council Member Lizeth Servin	Aye
Council Member Javier Vargas	Aye

3. B. Discussion and possible action on any and all matters regarding Ordinance No. 478. An ordinance of the Mayor and City Council of the City of San Luis, Arizona, repealing Section 2.05.250. (Council Members Luis E. Cabrera, Lizeth Servin and Javier Vargas)

Ms. Kay Macuil, City Attorney, stated that the item was improperly agendized and that the public was not properly noticed, and suggested a motion to continue the item.

MOTION: Council Member Luis Cabrera/Council Member Lizeth Servin to continue the item to a Regular Council meeting later this month. The motion passed unanimously.

The vote was as follows:

Council Member Esteban C. Rosales	Aye
Council Member Luis E. Cabrera	Aye
Council Member Lizeth Servin	Aye
Vice Mayor Javier Vargas	Aye

3. C. Discussion and possible action on any and all matters regarding Ordinance No. 479. An ordinance of the Mayor and City Council of the City of San Luis, Arizona, amending and restating the San Luis City Code Section 2.05.020, providing that the City Council designate a Vice Mayor every year. (Council Members Luis E. Cabrera, Lizeth Servin and Javier Vargas)

Council Member Luis E. Cabrera stated that this is a good ordinance because it automatically adds the Vice Mayor position to the agenda each December, without singling out or politicizing the position.

Council Member Lizeth Servin stated that this is a great initiative, as it provides more structure and stability for this rotating position. She believes this is the best way to handle the Vice Mayor role and agrees that it should be addressed every December.

Vice Mayor Javier Vargas also expressed his agreement with the ordinance, adding that it ensures every Council Member can serve the community as Vice Mayor.

MOTION: Council Member Luis E. Cabrera/Council Member Lizeth Servin to approve the reading of Ordinance No. 479 by title only. The motion passed unanimously.

The vote was as follows:

Council Member Esteban C. Rosales	Aye
Council Member Luis E. Cabrera	Aye
Council Member Lizeth Servin	Aye
Vice Mayor Javier Vargas	Aye

Sonia Cornelio, City Clerk, read Ordinance No. 479 by title only.

MOTION: Council Member Luis E. Cabrera/Council Member Lizeth Servin to approve Ordinance No. 479 as presented. The motion passed unanimously.

The vote was as follows:

Council Member Esteban C. Rosales	Aye
Council Member Luis E. Cabrera	Aye
Council Member Lizeth Servin	Aye
Vice Mayor Javier Vargas	Aye

4. ADJOURNMENT

Vice Mayor Javier Vargas adjourned the Special Council meeting at 6:08 p.m.

APPROVED:

_____
Nieves Riedel, Mayor

ATTEST:

_____
Sonia Cornelio, City Clerk

CERTIFICATION

I hereby certify that the foregoing minutes are a true and correct copy of the minutes of the Special City Council meeting of the City Council of the City of San Luis, Arizona, held on January 16, 2026. I further certify that the meeting was duly called and held and that a quorum was present.

_____
Sonia Cornelio, City Clerk

AGENDA ITEM REVIEW FORM

Regular City Council Meeting **6. B.**

Meeting Date: 02/11/2026

Summary

DISBURSEMENTS
From January 21, 2026 to February 2, 2026
Total $1,101,981.47 (One Million, One Hundred One Thousand, Nine Hundred Eighty-One Dollars and Forty-Seven Cents)

Attachments

Disbursements

City of San Luis
Finance Department

COUNCIL MEETING FEBRUARY 11, 2026
Disbursement Report from 01/21/2026 TO 02/02/2026

Bank Accounts	Check Date	Amount	Schedule
Payroll Check Account	01/22/2026	$ 122,035.97	Schedule A
Accounts Payable Check Account	01/23/2026	$ 197,785.86	Schedule B
Payroll Check Account	01/29/2026	$ 618,917.44	Schedule C
Accounts Payable Check Account	01/30/2026	$ 163,242.20	Schedule D
	Total Disbursements:	**$ 1,101,981.47**	-

Please contact Ms. Roula Encinas or Mr. Miguel Ramirez prior to the meeting if additional information is needed.

Prepared by Karla Plascencia: _____

Verified by Finance: _____ RJEncinas

For Council approval on: _____

Mayor: _____

Council: _____

_____

_____

_____

_____

_____

RECEIVED
FEB 03 2026
CITY CLERK'S OFFICE

Pay Day Register

Pay Date Range 01/23/26 - 01/23/26
Pay Batch 0123P207

Pay Batch 0123P207 Total
Employees in Pay Batch 91
Female Employees in Pay Batch 6

Hours Description	Hours	Gross
943 - PD - RETENTION	.0000	46,250.00
944 - PD - RECRUIT HIRNG	.0000	2,000.00
957 - FD - CEP RETENTION	.0000	95,000.00
969 - FD - HIRING INCENTIVE	.0000	1,900.00
Total	0.0000	$145,150.00

Withholdings and Deductions		Gross Base
Gross	145,150.00	
Imputed Income		
FEDERAL TAX WITHHOLDING	7,866.95	145,150.00
SOCIAL SECURITY TAX	8,999.22	145,150.00
MEDICARE	2,105.05	145,150.00
STATE WITHHOLDING	3,316.87	145,150.00
MISCELLANEOUS	825.94	.00
Net	$122,035.97	

Benefits		Gross Base
Employer Taxes		
MEDICARE	2,105.05	145,150.00
SOCIAL SECURITY TAX	8,999.22	145,150.00
SUTA/UNEMPLOYMENT	863.45	143,900.00
Workers' Comp		**Gross Base**
Direct Deposits		**Amount**
Check		$122,035.97

Miguel Ramirez

SCHEDULE A

City of San Luis

Payment Register

From Payment Date: 1/19/2026 - To Payment Date: 1/23/2026

Number	Date	Status	Void Reason	Reconciled/ Voided Date	Source	Payee Name	Transaction Amount	Reconciled Amount	Difference
1BYPAYABLE - 1st BY Accounts Payable									
Check									
114265	01/20/2026	Open			Utility Management Refund	EUCEBIA PEREZ	$170.67		
114266	01/20/2026	Open			Utility Management Refund	RAMON GASTELUM	$17.16		
114267	01/22/2026	Open			Accounts Payable	JMG HYDRAULIC REPAIR LLC	$3,200.00		
114268	01/22/2026	Open			Accounts Payable	AAED	$323.00		
114269	01/22/2026	Open			Accounts Payable	ACE UNIFORMS	$9,896.00		
114270	01/22/2026	Open			Accounts Payable	AFFORDABLE TOWING	$220.00		
114271	01/22/2026	Open			Accounts Payable	AGUA HELADA LLC	$52.70		
114272	01/22/2026	Open			Accounts Payable	ANGEL'S TOWING SERVICE/AUTO SALES	$165.00		
114273	01/22/2026	Open			Accounts Payable	ARIZONA MEXICO COMMISSION	$525.00		
114274	01/22/2026	Open			Accounts Payable	BOTELLO, EMMANUEL	$123.00		
114275	01/22/2026	Open			Accounts Payable	BOUND TREE MEDICAL, LLC.	$4,262.74		
114276	01/22/2026	Open			Accounts Payable	CAMPESINOS SIN FRONTERAS	$1,000.00		
114277	01/22/2026	Open			Accounts Payable	CASTILLO'S SOUTHWEST TOWING LLC.	$195.00		
114278	01/22/2026	Open			Accounts Payable	CITY-COUNTY COMMUNICATIONS & MARKETING ASSOCIATION	$285.00		
114279	01/22/2026	Open			Accounts Payable	CONSTRUCTION SUPPLY HOLDINGS II, LLC	$97.26		
114280	01/22/2026	Open			Accounts Payable	CORE & MAIN LP	$183.91		
114281	01/22/2026	Open			Accounts Payable	ESPARZA, ARMANDO	$59.00		
114282	01/22/2026	Open			Accounts Payable	FERTIZONA-YUMA L.L.C.	$1,109.80		
114283	01/22/2026	Open			Accounts Payable	FITZGIBBONS LAW OFFICES, P.L.C.	$200.00		
114284	01/22/2026	Open			Accounts Payable	GAXIOLA, JESUS	$174.53		
114285	01/22/2026	Open			Accounts Payable	GUEVARA, ALAN	$123.00		
114286	01/22/2026	Open			Accounts Payable	HD SUPPLY, INC.	$2,712.43		
114287	01/22/2026	Open			Accounts Payable	HEARTFIT FOR DUTY LLC	$11,838.50		
114288	01/22/2026	Open			Accounts Payable	HERRERA, RAMON	$200.00		
114289	01/22/2026	Open			Accounts Payable	HINDERLITER, DE LLAMAS & ASSOCIATES	$10,000.00		
114290	01/22/2026	Open			Accounts Payable	IPS GROUP INC	$215.89		
114291	01/22/2026	Open			Accounts Payable	LOWE'S HIW, INC.	$2,452.87		
114292	01/22/2026	Open			Accounts Payable	MOTION INDUSTRIES, INC.	$6,003.69		
114293	01/22/2026	Open			Accounts Payable	OFF DUTY MANAGEMENT, INC.	$246.40		
114294	01/22/2026	Open			Accounts Payable	QUINONEZ, FRANCISCO	$165.00		
114295	01/22/2026	Open			Accounts Payable	RAMIREZ, JOAQUIN	$200.00		
114296	01/22/2026	Open			Accounts Payable	REYNOSO, NIGEL	$123.00		
114297	01/22/2026	Open			Accounts Payable	RODRIGUEZ, DANIEL	$1,650.00		
114298	01/22/2026	Open			Accounts Payable	SANTANA, PEDRO, LUIS	$800.00		
114299	01/22/2026	Open			Accounts Payable	STEVEN L. MCCARTY	$500.00		
114300	01/22/2026	Open			Accounts Payable	STUDIO CERO NUEVE DESIGNS	$726.19		
114301	01/22/2026	Open			Accounts Payable	THE WINDOOR SHOP	$468.50		
114302	01/22/2026	Open			Accounts Payable	TORRES, GILBERTO	$200.00		
114303	01/22/2026	Open			Accounts Payable	TRUCKMATES LLC	$550.18		
114304	01/22/2026	Open			Accounts Payable	YUMA WINLECTRIC CO.	$379.93		

SCHEDULE B

City of San Luis

Payment Register

From Payment Date: 1/19/2026 - To Payment Date: 1/23/2026

Number	Date	Status	Void Reason	Reconciled/ Voided Date	Source	Payee Name	Transaction Amount	Reconciled Amount	Difference
114305	01/22/2026	Open			Accounts Payable	STATE BAR OF ARIZONA	$340.00		
Type Check Totals:					41 Transactions		$62,155.35		
EFT									
9009	01/22/2026	Open			Accounts Payable	AIRGAS, INC.	$1,152.74		
9010	01/22/2026	Open			Accounts Payable	ALSCO, INC	$7,387.69		
9011	01/22/2026	Open			Accounts Payable	AM SIGNAL LLC	$25,278.65		
9012	01/22/2026	Open			Accounts Payable	AMAZON.COM SALES, INC.	$1,502.66		
9013	01/22/2026	Open			Accounts Payable	ARIZONA EMERGENCY PRODUCTS, INC.	$626.83		
9014	01/22/2026	Open			Accounts Payable	ARIZONA WESTERN COLLEGE	$450.00		
9015	01/22/2026	Open			Accounts Payable	AUTOZONE STORES, INC	$4,608.66		
9016	01/22/2026	Open			Accounts Payable	BLUE STREAK SIGNS, LLC	$2,379.64		
9017	01/22/2026	Open			Accounts Payable	BTE BODY COMPANY INC	$663.14		
9018	01/22/2026	Open			Accounts Payable	CDWG	$5,391.25		
9019	01/22/2026	Open			Accounts Payable	CHAPMAN DCJR YUMA LLC	$802.82		
9020	01/22/2026	Open			Accounts Payable	CMI INC.	$211.00		
9021	01/22/2026	Open			Accounts Payable	CUEVAS, CHRISTIAN	$100.00		
9022	01/22/2026	Open			Accounts Payable	D & H ELECTRIC INC.	$2,088.50		
9023	01/22/2026	Open			Accounts Payable	DESERT DOCUMENT SHREDDERS, LLC	$37.75		
9024	01/22/2026	Open			Accounts Payable	DESERT WATER STORE INC	$179.26		
9025	01/22/2026	Open			Accounts Payable	FRESH TERRA SERVICES LLC	$1,560.00		
9026	01/22/2026	Open			Accounts Payable	HAAKER EQUIPMENT COMPANY	$6,580.35		
9027	01/22/2026	Open			Accounts Payable	HILL BROTHERS CHEMICAL CO.	$10,627.55		
9028	01/22/2026	Open			Accounts Payable	JSA COMPANY	$26,391.00		
9029	01/22/2026	Open			Accounts Payable	LOOMIS	$4,173.52		
9030	01/22/2026	Open			Accounts Payable	O'REILLY AUTO PARTS	$566.80		
9031	01/22/2026	Open			Accounts Payable	ODP BUSINESS SOLUTIONS LLC	$6,328.22		
9032	01/22/2026	Open			Accounts Payable	POLAR ICE LLC	$504.29		
9033	01/22/2026	Open			Accounts Payable	RUSH TRUCK CENTER	$9,897.28		
9034	01/22/2026	Open			Accounts Payable	SAN LUIS AIR CONDITIONING LLC	$950.00		
9035	01/22/2026	Open			Accounts Payable	SAN LUIS INDUSTRIAL PARK, LLC	$3,329.70		
9036	01/22/2026	Open			Accounts Payable	SOUTHWEST MERCH LLC	$261.17		
9037	01/22/2026	Open			Accounts Payable	SPECTRUM BUSINESS	$6,823.90		
9038	01/22/2026	Open			Accounts Payable	VERIZON COMMUNICATIONS INC	$3,349.74		
9039	01/22/2026	Open			Accounts Payable	YUMA CO. AIRPORT AUTHORITY INC	$167.79		
9040	01/22/2026	Open			Accounts Payable	YUMA NURSERY LLC	$904.61		
9041	01/22/2026	Open			Accounts Payable	YUMA SUN INC	$354.00		
Type EFT Totals:					33 Transactions		$135,630.51		

1BYPAYABLE - 1st BY Accounts Payable Totals

Checks	Status	Count	Transaction Amount	Reconciled Amount
	Open	41	$62,155.35	$0.00
	Reconciled	0	$0.00	$0.00
	Voided	0	$0.00	$0.00
	Stopped	0	$0.00	$0.00
	Total	41	$62,155.35	$0.00

EFTs	Status	Count	Transaction Amount	Reconciled Amount

City of San Luis

Payment Register

From Payment Date: 1/19/2026 - To Payment Date: 1/23/2026

Number	Date	Status	Void Reason	Reconciled/ Voided Date	Source		Payee Name	Transaction Amount	Reconciled Amount	Difference
					Open	33		$135,630.51	$0.00	
					Reconciled	0		$0.00	$0.00	
					Voided	0		$0.00	$0.00	
					Total	33		$135,630.51	$0.00	

All	Status	Count	Transaction Amount	Reconciled Amount
	Open	74	$197,785.86	$0.00
	Reconciled	0	$0.00	$0.00
	Voided	0	$0.00	$0.00
	Stopped	0	$0.00	$0.00
	Total	74	$197,785.86	$0.00

Grand Totals:

Checks	Status	Count	Transaction Amount	Reconciled Amount
	Open	**41**	**$62,155.35**	**$0.00**
	Reconciled	**0**	**$0.00**	**$0.00**
	Voided	**0**	**$0.00**	**$0.00**
	Stopped	**0**	**$0.00**	**$0.00**
	Total	**41**	**$62,155.35**	**$0.00**

EFTs	Status	Count	Transaction Amount	Reconciled Amount
	Open	**33**	**$135,630.51**	**$0.00**
	Reconciled	**0**	**$0.00**	**$0.00**
	Voided	**0**	**$0.00**	**$0.00**
	Total	**33**	**$135,630.51**	**$0.00**

All	Status	Count	Transaction Amount	Reconciled Amount
	Open	**74**	**$197,785.86**	**$0.00**
	Reconciled	**0**	**$0.00**	**$0.00**
	Voided	**0**	**$0.00**	**$0.00**
	Stopped	**0**	**$0.00**	**$0.00**
	Total	**74**	**$197,785.86**	**$0.00**

Guadalupe Canez

Digitally signed by: Guadalupe Canez
DN: CN = Guadalupe Canez email = gcanez@sanluisaz.gov C = AD
Date: 2026.01.23 17:41:17 -07'00'

Pay Day Register

Pay Date Range 01/10/26 - 01/23/26
Pay Batch 202603

Pay Batch 202603 Total
Employees in Pay Batch 355
Female Employees in Pay Batch 101

Hours Description	Hours	Gross
100 - REGULAR	25,157.0000	657,850.29
1000 - ADMIN LEAVE	119.5000	4,443.79
1001 - LEAVE WITHOUT PAY	8.7500	.00
1005 - BEREAVEMENT	48.0000	960.16
1007 - ON CALL WORKED HOURS	17.5000	416.58
1009 - PART TIME	100.2500	1,617.75
1010 - PART TIME FIREFIGHTERS	46.0000	963.19
201 - OVERTIME	635.7500	27,000.90
202 - OP STONE GARDEN- O.T.	386.5000	20,188.90
2023 - FMLA - SICK LEAVE	120.3300	2,971.18
2024 - FMLA - VACATION LEAVE	14.9200	374.45
2036 - MARSHALS OT	10.0000	434.25
2038 - FMLA - LEAVE WITHOUT	40.0000	.00
210 - SRO	185.0000	5,379.38
300 - VACATION EARNED	1,430.4800	.00
301 - VACATION USED	503.1300	13,786.76
400 - SICK EARNED	1,366.7000	.00
405 - SCHEDULED SICK LEAVE	203.7500	5,122.65
406 - UNSCHEDULED SICK LEAVE	625.8700	16,818.28
502 - ON CALL PAY I.T.	.0000	125.00
503 - STAND-BY PAY	684.5000	1,369.00
701 - HOLIDAY	2,644.0000	72,247.94
703 - FIRE HOLIDAY USED	24.0000	859.68
704 - FIRE HOLIDAY EARNED	636.0000	.00
706 - HOLIDAY WORKED HOURS	253.0000	10,450.69
900 - COMPENSATION EARNED	3.2500	.00
901 - COMPENSATION USED	19.5000	359.44
921 - STEP OVERTIME	4.0000	225.54
965 - PD - STAND-BY PAY	.0000	2,074.00
967 - FD - SPECIAL ASSIGNEMNT	274.0000	548.00
Total	35,561.6800	$846,587.80

Withholdings and Deductions		Gross Base
Gross	846,587.80	
Imputed Income		
FEDERAL TAX WITHHOLDING	49,928.38	755,573.15
SOCIAL SECURITY TAX	52,488.46	846,587.80
MEDICARE	12,275.29	846,587.80
STATE WITHHOLDING	15,991.08	755,573.15
AZ STATE RETIREMENT	59,602.84	502,554.18
CHILD SUPPORT 2	234.46	.00
DEFERRED COMP - ROTH	1,015.00	.00
DEFERRED COMP - ROTH	219.15	5,478.76
DEFERRED COMPENSATION	2,715.00	.00
DEFERRED COMPENSATION	768.09	6,784.07
GARNISHMENT - CHILD	2,231.38	.00
LONG TERM DISABILITY	703.60	502,554.18
MISCELLANEOUS	195.00	.00
PS DEFERRED COMP - ROTH	805.00	.00
PS DEFERRED COMP - ROTH	568.91	7,923.05
PS DEFERRED COMP TIAA -	475.00	10,828.99
PS DEFERRED COMPENSATION	2,135.00	.00
PSPRS FIRE DB RATE - TIER 1a	4,134.14	54,040.87
PSPRS FIRE DB RATE - TIER 1b	1,018.44	13,312.90
PSPRS FIRE DB RATE - TIER 2	409.99	5,359.37
PSPRS FIRE DB RATE - TIER 3	7,441.88	85,637.54
PSPRS POLICE DB RATE - TIER	3,232.37	42,253.15
PSPRS POLICE DB RATE - TIER	1,688.96	22,077.95
PSPRS POLICE DB RATE - TIER 2	814.46	10,646.49
PSPRS POLICE DB RATE - TIER 3	6,578.48	75,701.57
Net	$618,917.44	

Benefits		Gross Base
ASRS ALTERNATE	468.70	4,807.20
AZ STATE RETIREMENT	59,602.84	502,554.18
LONG TERM DISABILITY	703.60	502,554.18
PSPRS - ALTERNATE	263.35	3,291.89
PSPRS FIRE DB NORM - TIER 1	8,385.58	67,353.77
PSPRS FIRE DB NORM - TIER 2	667.24	5,359.37
PSPRS FIRE DB NORM - TIER 3	7,441.88	85,637.54
PSPRS FIRE DB UNFUND - TIER	1,535.67	67,353.77
PSPRS FIRE DB UNFUND - TIER	122.20	5,359.37
PSPRS FIRE DB UNFUND - TIER	2,132.45	85,637.54
PSPRS POLICE DB NORM - TIER	6,195.07	64,331.10
PSPRS POLICE DB NORM - TIER	1,025.26	10,646.49
PSPRS POLICE DB NORM - TIER	6,578.48	75,701.57
PSPRS POLICE DB UNFUND -	3,139.33	64,331.10
PSPRS POLICE DB UNFUND -	519.56	10,646.49
PSPRS POLICE DB UNFUND -	3,928.91	75,701.57
Total	$102,710.12	

Employer Taxes		Gross Base
MEDICARE	12,275.29	846,587.80
SOCIAL SECURITY TAX	52,488.46	846,587.80
SUTA/UNEMPLOYMENT	4,874.69	812,427.56
Total	$69,638.44	

Workers' Comp		Gross Base
Ambulance EMT Search &	3,687.49	77,631.73
ANIMAL CONTROL OFFICERS	85.86	3,816.12
ATTORNEY- ALL & CLERICAL-	79.03	35,942.15
AUTO SERVICE/ REPAIR	348.29	12,483.87
BUILDING- NOC OPER BY	619.12	17,103.54
BUS COMPANY AND DRIVERS	83.99	1,521.60
CLERICAL OFFICE/ LIBRARY/	457.78	190,725.13
Electrician	73.78	2,349.60
FIREFIGHTERS & DRIVERS	4,273.95	89,977.56
GARBAGE/ ASH/ REFUSE	782.90	12,526.43
Homemaker Service	44.06	1,923.61
Motion Picture Production	16.65	2,561.24
MUNICIPAL/ TOWN/	985.24	56,299.28
PARKS- NOC ALL EMPLOYEES	832.19	26,844.68

Miguel Romero
01/29/26

SCHEDULE C

Pay Day Register

Pay Date Range 01/10/26 - 01/23/26
Pay Batch 202603

POLICE OFFICERS	8,627.15	181,623.52
RECREATION- ALL EMPLOYEES/	327.98	23,939.73
SEWAGE DISPOSAL/ PLANT	1,393.93	40,520.90
Street or Road Construction	2,946.10	33,364.74
WATERWORKS OPERATIONS	1,229.50	35,432.37
Total	$26,894.99	

Direct Deposits	Amount
1st Bank Yuma	39,516.46
ACADEMY BANK	3,067.98
Ally Bank	1,616.55
AVENIR FINANCIAL	48,152.44
Bank of America	8,576.48
Bank of America CA	1,286.93
Bankcorp	200.00
BANKCORP BANK	1,730.74
CAPITAL ONE	1,731.55
Charles Sch	250.00
Chase Bank	288,571.80
CHASE BANK CA	2,891.10
CHASE BANK MORGAN	2,041.45
CHASE BANK TX	1,500.00
chase centro	2,162.26
discover	400.00
EVOLVE BANK AND TRUST	256.07
FF CREDIT UNION	2,700.85
FIDELITY	410.41
FIREFIGHTER FIRST CREDIT UNION	16,011.56
HUGHES FCU	2,083.12
JP Morgan Chase	1,275.42
MECHNICS BANK	281.06
National Bank	1,332.33
National Police FCU	100.00
Navy Federal	36,499.15
NBKC Bank - Acorns	1,350.74
NetSpend Corporation DD	120.00
NORTH ISLAND CREDIT UNION	857.96
PATHWARD	2,040.84
Pima Federal Credit Union	917.68
SOFI BANK	2,376.79
Sunbank	2,479.82
THE FOOTHILLS BANK	2,385.31
USAA FEDERAL SAVING	3,680.61

Pay Day Register

Pay Date Range 01/10/26 - 01/23/26
Pay Batch 202603

VANTAGE WEST	2,361.25
WASHINGTON FEDERAL	1,430.19
Wells Fargo	116,569.66
WELLS FARGO ARKANSAS	1,943.57
WELLS FARGO CA	4,703.38
WELLS FARGO CALE	880.99
WELLS FARGO YUMA	3,163.08
Total	$611,907.58
Check	$7,009.86

City of San Luis

Payment Register

From Payment Date: 1/26/2026 - To Payment Date: 1/30/2026

Number	Date	Status	Void Reason	Reconciled/ Voided Date	Source	Payee Name	Transaction Amount	Reconciled Amount	Difference
1BYPAYABLE - 1st BY Accounts Payable									
Check									
114306	01/29/2026	Open			Accounts Payable	SUPPORT PAYMENT CLEARINGHOUSE	$2,465.84		
114307	01/30/2026	Open			Accounts Payable	ADOT MVD	$2.00		
114308	01/30/2026	Open			Accounts Payable	AGUA HELADA LLC	$144.15		
114309	01/30/2026	Open			Accounts Payable	ALLO HOLDINGS, LLC	$1,433.42		
114310	01/30/2026	Open			Accounts Payable	APS	$50.00		
114311	01/30/2026	Open			Accounts Payable	ARIZONA STATE UNIVERSITY	$1,000.00		
114312	01/30/2026	Open			Accounts Payable	AT&T MOBILITY LLC	$8,745.02		
114313	01/30/2026	Open			Accounts Payable	BLX GROUP LLC,	$3,000.00		
114314	01/30/2026	Open			Accounts Payable	BOCK, LAURA, ELENA	$30.00		
114315	01/30/2026	Open			Accounts Payable	BOUND TREE MEDICAL, LLC.	$822.38		
114316	01/30/2026	Open			Accounts Payable	CANON FINANCIAL SERVICES, INC	$1,276.70		
114317	01/30/2026	Open			Accounts Payable	CASTILLO'S SOUTHWEST TOWING LLC.	$165.00		
114318	01/30/2026	Open			Accounts Payable	CAUDILLO, SAMUEL, MISAEL	$412.68		
114319	01/30/2026	Open			Accounts Payable	CENTURYLINK	$69.73		
114320	01/30/2026	Open			Accounts Payable	CNJ AUTO GLASS & WINDOW TINTING, LLC	$130.00		
114321	01/30/2026	Open			Accounts Payable	CONSTRUCTION SUPPLY HOLDINGS II, LLC	$2,686.54		
114322	01/30/2026	Open			Accounts Payable	COVARRUBIAS, FATIMA , N	$200.00		
114323	01/30/2026	Open			Accounts Payable	DAVE'S AUTO GLASS & UPHOLSTERY	$699.60		
114324	01/30/2026	Open			Accounts Payable	ESPARZA, JORGE	$200.00		
114325	01/30/2026	Open			Accounts Payable	FELIX FENCING LLC	$26,547.84		
114326	01/30/2026	Open			Accounts Payable	FELIX VALDEZ, GRISELDA, N	$50.00		
114327	01/30/2026	Open			Accounts Payable	FERGUSON WATERWORKS	$198.30		
114328	01/30/2026	Open			Accounts Payable	FERTIZONA-YUMA L.L.C.	$1,920.82		
114329	01/30/2026	Open			Accounts Payable	FITZGIBBONS LAW OFFICES, P.L.C.	$1,532.50		
114330	01/30/2026	Open			Accounts Payable	GALLEGOS, LUIS	$167.00		
114331	01/30/2026	Open			Accounts Payable	GASTELUM RASCON, SANTIAGO, YAHEL	$300.00		
114332	01/30/2026	Open			Accounts Payable	HAJOCA CORPORATION	$881.77		
114333	01/30/2026	Open			Accounts Payable	HD SUPPLY, INC.	$832.19		
114334	01/30/2026	Open			Accounts Payable	IPS GROUP INC	$930.42		
114335	01/30/2026	Open			Accounts Payable	JAMES COOKE & HOBSON INC.	$1,665.77		
114336	01/30/2026	Open			Accounts Payable	JAY'S ELECTRIK LLC	$676.54		
114337	01/30/2026	Open			Accounts Payable	LOPEZ, MARIA, JULIETA	$1,395.04		
114338	01/30/2026	Open			Accounts Payable	M & Y ELECTRICAL LLC	$486.00		
114339	01/30/2026	Open			Accounts Payable	MES I ACQUISITION INC.	$1,108.56		
114340	01/30/2026	Open			Accounts Payable	MOTION INDUSTRIES, INC.	$468.50		
114341	01/30/2026	Open			Accounts Payable	NATIONAL ASSOCIATION FOR LEGAL SUPPORT PROFESSIONA	$50.00		
114342	01/30/2026	Open			Accounts Payable	NORWOOD EQUIPMENT INC.	$3,971.16		
114343	01/30/2026	Open			Accounts Payable	NUNEZ, ENRIQUE	$744.00		
114344	01/30/2026	Open			Accounts Payable	ORTEGA, KEYLA	$60.00		
114345	01/30/2026	Open			Accounts Payable	PENA DE SUAREZ, MARIA	$150.00		
114346	01/30/2026	Open			Accounts Payable	PETTY CASH/ CAROLINA CORRAL	$283.06		

SCHEDULE D

City of San Luis

Payment Register

From Payment Date: 1/26/2026 - To Payment Date: 1/30/2026

Number	Date	Status	Void Reason	Reconciled/ Voided Date	Source	Payee Name	Transaction Amount	Reconciled Amount	Difference
114347	01/30/2026	Open			Accounts Payable	PULIDO AYALA, JESUS, I	$120.00		
114348	01/30/2026	Open			Accounts Payable	QUINONEZ, FRANCISCO	$205.00		
114349	01/30/2026	Open			Accounts Payable	REMINGTON INDUSTRIAL SUPPLY LLC	$1,365.21		
114350	01/30/2026	Open			Accounts Payable	REYES BARRIOS, ERICK, ALAN	$468.00		
114351	01/30/2026	Open			Accounts Payable	REYNOSO, NIGEL	$130.00		
114352	01/30/2026	Open			Accounts Payable	SHAY OIL COMPANY	$2.76		
114353	01/30/2026	Open			Accounts Payable	SIQUEIROS PATRON, MANUEL	$25.00		
114354	01/30/2026	Open			Accounts Payable	WAL-MART	$165.00		
114355	01/30/2026	Open			Accounts Payable	ZARAGOZA, LETICIA	$130.00		
114356	01/30/2026	Open			Accounts Payable	VALENCIA, ANGEL, ARNOLDO	$1,131.52		
Type Check Totals:					51 Transactions		$71,695.02		
EFT									
9042	01/30/2026	Open			Accounts Payable	AIRGAS, INC.	$164.80		
9043	01/30/2026	Open			Accounts Payable	AMBERLY'S PLACE	$1,500.00		
9044	01/30/2026	Open			Accounts Payable	AMERICAN HEART ASSOCIATION, INC.	$571.60		
9045	01/30/2026	Open			Accounts Payable	ARIZONA STATE TREASURER	$22,449.33		
9046	01/30/2026	Open			Accounts Payable	B&H PHOTO & ELECTRONICS CORP.	$3,711.06		
9047	01/30/2026	Open			Accounts Payable	BILL ALEXANDER FORD	$6,596.24		
9048	01/30/2026	Open			Accounts Payable	BTE BODY COMPANY INC	$1,761.14		
9049	01/30/2026	Open			Accounts Payable	CDWG	$96.85		
9050	01/30/2026	Open			Accounts Payable	CHAPMAN DCJR YUMA LLC	$970.28		
9051	01/30/2026	Open			Accounts Payable	CORE ENGINEERING GROUP, PLLC	$5,122.60		
9052	01/30/2026	Open			Accounts Payable	CROWN AWARDS	$391.23		
9053	01/30/2026	Open			Accounts Payable	DESERT DOCUMENT SHREDDERS, LLC	$145.50		
9054	01/30/2026	Open			Accounts Payable	DESERT WATER STORE INC	$175.27		
9055	01/30/2026	Open			Accounts Payable	FLOCK GROUP INC	$16,544.30		
9056	01/30/2026	Open			Accounts Payable	FRESH TERRA SERVICES LLC	$1,590.00		
9057	01/30/2026	Open			Accounts Payable	GARCIA, JESUS	$420.00		
9058	01/30/2026	Open			Accounts Payable	HAAKER EQUIPMENT COMPANY	$7,270.46		
9059	01/30/2026	Open			Accounts Payable	LOPEZ ARMENTA, JOSE, MARTIN	$420.00		
9060	01/30/2026	Open			Accounts Payable	PICTOMETRY INTERNATIONAL, CORP	$3,874.92		
9061	01/30/2026	Open			Accounts Payable	POLAR ICE LLC	$193.75		
9062	01/30/2026	Open			Accounts Payable	PRECISION ELECTRIC CO. INC.	$685.00		
9063	01/30/2026	Open			Accounts Payable	PURCHASE POWER	$2,241.99		
9064	01/30/2026	Open			Accounts Payable	ROACH PEST CONTROL	$250.00		
9065	01/30/2026	Open			Accounts Payable	RUSH TRUCK CENTER	$963.72		
9066	01/30/2026	Open			Accounts Payable	SAN LUIS INDUSTRIAL PARK, LLC	$3,329.70		
9067	01/30/2026	Open			Accounts Payable	SAN LUIS WALK IN CLINIC, INC	$600.00		
9068	01/30/2026	Open			Accounts Payable	SANFORD, JAMES	$791.41		
9069	01/30/2026	Open			Accounts Payable	SEBIS DIRECT INC.	$1,109.08		
9070	01/30/2026	Open			Accounts Payable	SOUTHERN TIRE MART LLC	$2,724.96		
9071	01/30/2026	Open			Accounts Payable	SUPREME PLUMBING SOLUTIONS LLC	$880.00		
9072	01/30/2026	Open			Accounts Payable	TRUCKPRO HOLDING CORPORATION	$164.83		

City of San Luis

Payment Register

From Payment Date: 1/26/2026 - To Payment Date: 1/30/2026

Number	Date	Status	Void Reason	Reconciled/ Voided Date	Source	Payee Name	Transaction Amount	Reconciled Amount	Difference
9073	01/30/2026	Open			Accounts Payable	ULINE, INC.	$71.87		
9074	01/30/2026	Open			Accounts Payable	WAXIE SANITARY SUPPLY	$1,246.43		
9075	01/30/2026	Open			Accounts Payable	YUMA COUNTY TREASURER'S OFFICE	$115.16		
9076	01/30/2026	Open			Accounts Payable	YUMA FARM & HOME SUPPLY INC.	$349.22		
9077	01/30/2026	Open			Accounts Payable	YUMA SUN INC	$426.00		
9078	01/30/2026	Open			Accounts Payable	ZOLL MEDICAL CORP	$1,628.48		
Type EFT Totals:					37 Transactions		$91,547.18		

1BYPAYABLE - 1st BY Accounts Payable Totals

Checks	Status	Count	Transaction Amount	Reconciled Amount
	Open	51	$71,695.02	$0.00
	Reconciled	0	$0.00	$0.00
	Voided	0	$0.00	$0.00
	Stopped	0	$0.00	$0.00
	Total	51	$71,695.02	$0.00

EFTs	Status	Count	Transaction Amount	Reconciled Amount
	Open	37	$91,547.18	$0.00
	Reconciled	0	$0.00	$0.00
	Voided	0	$0.00	$0.00
	Total	37	$91,547.18	$0.00

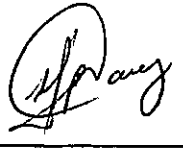
All	Status	Count	Transaction Amount	Reconciled Amount
	Open	88	$163,242.20	$0.00
	Reconciled	0	$0.00	$0.00
	Voided	0	$0.00	$0.00
	Stopped	0	$0.00	$0.00
	Total	88	$163,242.20	$0.00

Grand Totals:

Checks	Status	Count	Transaction Amount	Reconciled Amount
	Open	**51**	**$71,695.02**	**$0.00**
	Reconciled	**0**	**$0.00**	**$0.00**
	Voided	**0**	**$0.00**	**$0.00**
	Stopped	**0**	**$0.00**	**$0.00**
	Total	**51**	**$71,695.02**	**$0.00**

EFTs	Status	Count	Transaction Amount	Reconciled Amount
	Open	**37**	**$91,547.18**	**$0.00**
	Reconciled	**0**	**$0.00**	**$0.00**
	Voided	**0**	**$0.00**	**$0.00**
	Total	**37**	**$91,547.18**	**$0.00**

All	Status	Count	Transaction Amount	Reconciled Amount
	Open	**88**	**$163,242.20**	**$0.00**
	Reconciled	**0**	**$0.00**	**$0.00**
	Voided	**0**	**$0.00**	**$0.00**
	Stopped	**0**	**$0.00**	**$0.00**
	Total	**88**	**$163,242.20**	**$0.00**



AGENDA ITEM REVIEW FORM

Regular City Council Meeting **6. C.**

Meeting Date: 02/11/2026
Department Head: Joe Estes, City Attorney, Attorney's Office
Submitted By: Janet Taylor, Legal Secretary, Attorney's Office
Action Requested: Motion

ITEM:

Discussion and possible action on any and all matters regarding changes to the employment contract of Chief of Police Nigel I. Reynoso. **(Jenny Torres, Acting City Manager)**

SUMMARY:

The Chief of Police is a position created by ordinance. The version of the City Code passed on August 9, 2023, states in the relevant part:

San Luis City Code Section § 2.20.020 - "The City Council shall appoint the Chief of Police, who shall serve at the pleasure of the Council[.]"

The contract has been reviewed by the City Attorney, the Arizona Municipal Risk Retention Pool law firm Pierce & Coleman PLC, the Acting City Manager, the HR Director, and the Finance Director. The Chief has had an opportunity to review the contract and agrees with it.

The contract was previously approved by the City Council during a Special Council meeting held on December 17, 2025.

RECOMMENDATION / SUGGESTED MOTION:

I MOVE TO APPROVE THE CHANGES OF THE EMPLOYMENT CONTRACT WITH THE CHIEF OF POLICE NIGEL I. REYNOSO, AS PRESENTED.

Attachments

Police Chief Contract

CITY OF SAN LUIS, ARIZONA
CHIEF OF POLICE EMPLOYMENT CONTRACT

This contract ("Contract") is effective as of San Luis City Council's Appointment on January 10, 2026, between the City of San Luis, Arizona, a municipal corporation of the State of Arizona, Administrative Offices at City Hal1,1090 Union Street, San Luis, Arizona ("City") and Nigel I. Reynoso, an individual ("Chief Reynoso"). The City and Chief Reynoso may be referred to individually as the "Party" and collectively as the "Parties."

SECTION I:Term

The City employs, engages, and hires Chief Reynoso under this Contract for a term of three (3) years, January 10, 2026, through January 10, 2029 ("Contract Period"), to serve in the position of the City of San Luis Chief of Police. Chief Reynoso accepts and agrees to this employment, engagement, and hiring.

SECTION II: Full-Time Devotion to City Business

Chief Reynoso shall devote his full time, attention, and energies to the performance of his duties as the City of San Luis Chief of Police, including the Police Department's instructor tasks not in conflict with his duties as Chief of Police. Chief Reynoso shall serve the City diligently and according to his best professional and personal abilities in all respects and generally do all things for the City's best interests, which is usually done by persons occupying his position as Chief of Police of a political subdivision of the State of Arizona, and in line with the duties in Section III of this Contract.

SECTION III: Duties and Nature of Employment

Chief Reynoso shall perform the duties of Chief of Police as set forth in the ordinances, codes, rules, regulations, and job description for the City of San Luis Chief of Police and the applicable statutes and laws of the State of Arizona, including but not limited to San Luis City Code § 2.20.050. Chief Reynoso shall perform such other duties as may be assigned or directed by the City Manager of the City of San Luis. Although a contracted employee, Chief Reynoso shall be a department head subject to the City Manager's management and direction as any other department head of the City of San Luis. Chief Reynoso must maintain proper certification as a certified peace officer in good standing with the State of Arizona through the Arizona Police

Officer Standards and Training Board ("AZ POST") for the duration of his employment as San Luis Chief of Police.

SECTION IV: Compensation & Benefits

A. Salary:
Chief Reynoso's salary shall be an annual base salary of $130,000, payable biweekly, and overtime through federal grants is allowed (i.e., Operation Stonegarden), effective as of January 10, 2026. Chief Reynoso shall be granted salary adjustments equivalent to those provided to members of the classified service.

B. Performance Evaluation:
The City Manager and City Council shall review, evaluate, and complete the evaluation of Chief Reynoso's performance at least once per year during the term of this Contract. The structure and timing of such review and evaluation, as well as any further adjustment in base salary or other compensation, shall be at the sole discretion of the City Manager and the City Council. The City Manager and the City Council shall not, at any time during this Contract, reduce the salary for Chief Reynoso without Chief Reynoso's mutual consent. Should the Employer choose not to conduct a performance evaluation, it will be assumed that the goals and expectations for the Employee have been met.

C. Vehicle:
The City shall provide a police vehicle for use by Chief Reynoso and pay all attendant expenses for operating, maintaining, and insuring it. The said vehicle is to be used by Chief Reynoso in connection with the performance of his duties as Chief of Police, including professional growth and development. The said vehicle may not be used to commute to or from a residence not located within 25 minutes of response time from the Police Department of the City of San Luis.

D. Dues:
The Council agrees to budget and pay for the professional dues and subscriptions of Chief Reynoso as the Council deems necessary for his continuation and participation in national, regional, state, and local associations and organizations for his continued professional participation, growth, and advancement, and for the good of the City.

E. Benefits:
Unless otherwise stated herein, Chief Reynoso shall be entitled to all other employment benefits provided for employees of the City in the classified service, including, but not limited to:

1. Health benefits,

2. Participation in the Arizona Public Safety Personnel Retirement System, and

3. Leave benefits and accrual of leave. Unless otherwise stated in this Contract, the employee limits on benefits shall also apply to Chief Reynoso, including, but not limited to, the limits on accrual of leave benefits, including but not limited to vacation and sick leave, which shall follow the City of San Luis Personnel Policies and other Human Resources policies. Chief Reynoso is eligible for any vacation buyback policy available to the classified service. Chief Reynoso shall not lose any leave he accrued prior to January 10, 2026, by virtue of being a contracted employee under this Contract.

F. Personal Time Off:
The City Council recognizes that Chief Reynoso must devote the time necessary to his duties involving both regular office hours and time outside these hours. Personal time off should be in line with this premise and rests in Chief Reynoso's discretion under the approval of the City Manager.

G. Indemnification:
The City agrees to defend, save harmless, and indemnify Chief Reynoso against any tort, professional liability claim or demand, or other civil legal action, whether groundless or otherwise, arising out of any alleged act or omission occurring in the performance of his duties as Chief Reynoso for the City, even if the said claim has been made following his termination from employment, provided that Chief Reynoso acted within the scope of his duties. The City has the sole authority to compromise and settle any such claim or suit. The City will pay the amount of any settlement or litigation costs, incidental expenses, and judgments rendered thereon without recourse to Chief Reynoso personally.

SECTION V: Termination of Employment

A. Resignation:
Chief Reynoso may resign from his employment at any time upon giving at least thirty (30) days' written notice to the City Manager, Mayor, and City Council, unless the Parties otherwise agree in writing upon a different period. In the event of resignation, Chief Reynoso shall not be entitled to severance pay under this Section but shall be entitled to pay out of accumulated vacation leave under Section V, Subsection C.

B. Termination of the Contract:
Other than termination for misconduct as described in Section V, Subsection B.4, to the extent permitted by law, the City Council may terminate this

Contract at any time upon the giving of at least thirty (30) days' written notice to Chief Reynoso unless the Parties agree in writing upon a different notice period. However, if the City terminates this Contract under the provisions of Section V, Subsection B, before January 9, 2029, then, as long as Chief Reynoso has maintained his peace officer certification, Chief Reynoso shall be entitled to the following pay and benefits:

1. **Unpaid Salary and Benefits**. All earned but unpaid salary, and any other earned benefits required to be paid pursuant to this Contract and the Personnel Policies, shall be paid to Chief Reynoso.

2. **Severance Pay**. Upon termination by the City pursuant to Section V Subsection B (in addition to the sum calculated under Section V, Subsection C), Chief Reynoso shall be entitled to severance pay equal to three (3) months' salary based upon the rate of salary as of the date of termination.

3. **Reduction; Non-Compliance**. It shall be deemed termination without cause if, at any time during the term of this Contract, the Employer (i) reduces the Employee's salary or other financial benefits in a greater percentage than an applicable across-the-board reduction for all unclassified City of San Luis employees or (ii) refuses to comply with a material term of this Contract within 30 days after written notice from the Employee.

4. **Termination for Misconduct**.

Chief Reynoso shall not be entitled to thirty (30) days' notice nor severance pay under this Section if the City terminates Chief Reynoso because Chief Reynoso materially breached any provision of this Contract or for an act of fraud, deception, misrepresentation, or active concealment of material facts, or any of the following:

1. Felony conviction,
2. Class one misdemeanor conviction,
3. Conviction of a crime of moral turpitude;
4. Loss of certified peace officer status with AZ POST.

City Council reserves the right to suspend any severance payment pursuant to this subsection while the charges or investigation for the above-listed acts are pending. For termination for misconduct, Chief Reynoso shall be entitled to pay out under Section V, Subsection C. Chief Reynoso agrees to give notice to the City Manager, the Mayor, and City Council of any disciplinary proceedings

Chief Reynoso has before the AZ-POST Board (Arizona Peace Officer Standards and Training Board).

C. Pay Out Accumulated Vacation Leave:
Upon termination, in addition to any other rights to compensation or benefits that Chief Reynoso may have under this Contract or law, Chief Reynoso shall be paid his accumulated vacation leave time calculated at a rate equivalent to his salary as of the date of termination.

SECTION VI: Entire Agreement

This written Contract contains the sole and entire agreement between the Parties. It shall supersede any and all other agreements between the Parties. The Parties acknowledge and agree that neither of them has made any representation concerning the subject matter of this Contract nor any representations inducing its execution and delivery except such representations as are specifically set forth in this writing. The Parties acknowledge that they have relied on their own judgment in entering into the same. The Parties further acknowledge that any statements or representations that either may have made to the other are void and of no effect. Neither Party has relied on such statements or representations in connection with its dealings with the other.

SECTION VII: Waiver or Modification

It is agreed that no waiver or modification of this Contract or any covenant, condition, or limitation contained in it shall be valid unless it is in writing and duly executed by the Party to be charged with it. It is agreed that no evidence of any waiver or modification shall be offered or received in evidence in any proceeding, arbitration, or litigation between the Parties arising out of or affecting this Contract or the rights or obligations of any Party under it unless such waiver or modification is in writing, duly executed as above. The Parties agree that this paragraph's provisions may not be waived except by a duly executed writing.

SECTION VIII: Severability

The invalidity of any portion of this Contract will not and shall not be deemed to affect the validity of any other provision. If any provision of this Contract is held to be invalid, the Parties agree that the remaining provisions shall be deemed to be in full force and effect as if both Parties had executed them subsequent to the expungement of the invalid provision.

SECTION IX: Applicable Law

A. Governing Law

The Parties agree that it is their intention and covenant that this Contract and performance under it and all suits and special proceedings relating to it be construed in accordance with and under and pursuant to the laws of the State of Arizona and that in any action, particular proceeding, or other proceeding that may be brought arising out of, in connection with, or by reason of this Contract, the laws of the State of Arizona shall be applicable and shall govern to the exclusion of the law of any other forum, without regard to the jurisdiction in which any action or particular proceeding may be instituted.

B. Alternate Dispute Resolution

If the City adopts as a policy a program of settling employment claims or suits by binding arbitration and adopts a form of Contract for new employees to sign during this Contract, then Chief Reynoso agrees to sign the said agreement and be bound by the same.

C. Conflict Statute

This Contract shall be subject to cancellation for conflict provisions of A.R.S. § 38-511.

SECTION X: Headings

The titles of the sections and subsections of this Contract are solely for the convenience of the Parties. The titles shall not be used to explain, modify, simplify, or aid in the interpretation of the provisions of this Contract.

[Intentionally left blank. Signature page follows.]

The Parties have executed this Contract in the City of San Luis, Yuma County, Arizona.

City of San Luis, Arizona

_____
Nieves Riedel, Mayor

_____
Date

Attest:

_____
Sonia Cornelio, City Clerk

Approved As to Form:

_____
Kay Marion Macuil, City Attorney

Chief of Police

_____
Nigel Reynoso

_____
Date

AGENDA ITEM REVIEW FORM

Regular City Council Meeting **7. A.**

Meeting Date: 02/11/2026
Department Head: Joe Estes, City Attorney, Attorney's Office
Submitted By: Janet Taylor, Legal Secretary, Attorney's Office
Action Requested: Motion

ITEM:

Discussion and possible action on any and all matters regarding the engagement of legal services from Pierce-Coleman to serve as the contracted City Attorney on an interim basis. **(Jenny Torres, Acting City Manager)**

SUMMARY:

The City of San Luis wishes to engage Pierce-Coleman PLLC to serve as interim City Attorney, following the retirement of Kay Macuil and pending recruitment of its next in-house counsel. The scope of this engagement is to serve as the contracted City Attorney on an interim basis and perform the normal functions of the City Attorney's office, as set forth in city code and state law. Joseph Estes will be the primary attorney handling this matter. The City of San Luis estimates total expenses associated with this interim engagement will not exceed $100,000 for Fiscal Year 2026.

Staff is requesting approval under section 3.05.080 Professional Services and to waive formal bidding procedures as allowed under section 3.05.010 (F).

RECOMMENDATION / SUGGESTED MOTION:

I MOVE TO APPROVE THE ENGAGEMENT SERVICES OF PIERCE-COLEMAN TO SERVE AS INTERIM CITY ATTORNEY, TO WAIVE THE PROCUREMENT CODE, AND NOT TO EXCEED THE ESTIMATED AMOUNT OF $100,000.00 FOR FISCAL YEAR 2026.

Fiscal Impact

IS THERE FISCAL IMPACT ASSOCIATED WITH THIS ITEM:	Yes
CITY/STATE/FEDERAL FUNDS:	City
TOTAL:	$100,000
BUDGETED AMOUNT:	$480,000
AVAILABLE AMOUNT TO TRANSFER:	N/A
ACCT NAME & GL#/REMAINING BALANCE BEFORE PURCHASE:	City Attorney Legal Services GL Account 100-117-80003 Remaining Balance $ 177,921.00

FISCAL IMPACT STATEMENT (IF THIS IS A BUDGET TRANSFER, YOU MUST ATTACH THE BUDGET ADJUSTMENT FORM):

The City Attorney Department has sufficient budgeted funds available within its legal services account to cover the estimated cost of this item.

Attachments

Pierce Coleman Engagement Ltr.

PIERCE | COLEMAN

Justin S. Pierce
Stephen B. Coleman
Trish Stuhan
Christina Estes-Werther
Jon M. Paladini
Joseph D. Estes
Dominic L. Verstegen
Allen H. Quist

17851 North 85th Street, Suite 175
Scottsdale, Arizona 85255

2812 N. Norwalk, Suite 107
Mesa, Arizona 85215

Rodney F. W. States
Amy B. Chan
Jessica D. Silva
Justin B. Petersen
Michelle N. Stinson
Alexandra N. Cayton
Matthew W. Schiumo
Reilly K. Cunnington
Kate Cox

January 26, 2026

VIA ELECTRONIC MAIL

Jenny Torres, City Manager
City of San Luis
1090 East Union Street
San Luis, AZ 85349
Email: jtorres@sanluisaz.gov

Re: Engagement Letter – Interim City Attorney Services

Dear Jenny:

We are pleased that the City of San Luis (the "City") has decided to retain Pierce Coleman PLLC to provide interim City Attorney services in light of the retirement of the City's current City Attorney, and pending the City's recruitment of its next in-house counsel. I am writing to address the terms of our representation. We will do our best to serve you efficiently.

Scope of Services

We understand the initial scope of our engagement will be to serve as the contracted City Attorney on an interim basis. In that capacity, we will perform the normal functions of the City Attorney's office, as set forth in state law and City Code. Joe Estes will be the primary attorney handling this matter but we will utilize other attorneys and legal assistants in the firm in the best exercise of our professional judgment. Joe has served as an in-house City Attorney previously, as well as a Deputy City Attorney in the City of Yuma, so his ability to step in at this time will be seamless. As we discussed, we will have other attorneys serve as secondary points of contact to ensure we are responsive to the City's needs at all time.

Fees

As a professional courtesy, we will extend the following discounted hourly rates for this matter: Partners/Of Counsel – $330.00; Associates – $250.00; Paralegals and law clerks – $150.00. If you ever have any questions or concerns about fees at any time, please feel free to contact me.

Disbursements

Disbursements, if any, will be billed back to you on a dollar-for-dollar basis. We do not request reimbursement for travel-related expenses associated with attending regular council meetings. However, to the extent additional travel is necessary, we request reimbursement for travel-related expenses, including lodging, air travel, cab fares, parking fees, and mileage. We never request reimbursement for meals. We also request reimbursement for photocopying costs at $.10 per page, postage, messenger service, and delivery charges where material must be sent via certified, registered, or express mail or package carrier.

Billing

We send invoices to our clients monthly via e-mail. The billing will contain a brief summary of the nature of the work, the fees and the costs advanced. For timeliness sake, we will do our best to send invoices for services rendered and expenses incurred on your behalf no later than two or three weeks after the completion of the month in which the work is performed.

Applicable Law

This agreement shall be interpreted according to the laws of the State of Arizona.

We very much appreciate the opportunity to serve the City in this capacity, and hope you will be pleased with the quality and efficiency of our work. We welcome your questions about this letter, our policies, our bills and our work, so please call me directly if you ever have any questions.

In order to confirm the Firm's agreement to our representation on these terms, we ask that you sign below and return this letter to us.

Please let me know if you require any further information.

Sincerely,

/s/ Justin S. Pierce

Justin S. Pierce

JSP/maw

AGREED:

CITY OF SAN LUIS

By: _____
Title: _____
Date: _____

AGENDA ITEM REVIEW FORM

Regular City Council Meeting **7. B.**

Meeting Date: 02/11/2026

Department Head: Armando Esparza, Director of Economic Development, Economic Development

Submitted By: Humberto Arcos, Grants Coordinator, Economic Development

Action Requested: Motion

ITEM:

Discussion and possible action on any and all matters regarding the acceptance of Arizona Companion Animal Spay/Neuter Committee (AZCASNC) Spay & Neuter Grant Funding. **(Humberto Arcos, Grants Coordinator)**

SUMMARY:

On November 12, 2025, the San Luis City Council approved a services contract with the Humane Society of Yuma. As part of the contract, a grant funding contingency was included, providing for an additional $5,000 payment to the Humane Society of Yuma upon the successful award of a pending spay-and-neuter grant. The City of San Luis has since been awarded $5,000 through the Arizona Companion Animal Spay & Neuter Committee (AZCASNC) grant program. These funds will be used to support low-cost public spay and neuter services, helping reduce stray animal populations and improve community health and safety. Staff is requesting City Council approval to accept the grant award and authorize its use for eligible program expenses.

RECOMMENDATION / SUGGESTED MOTION:

I MOVE TO ACCEPT THE $5,000 ARIZONA COMPANION ANIMAL SPAY/NEUTER COMMITTEE GRANT, AUTHORIZE STAFF TO EXECUTE ALL NECESSARY DOCUMENTS, AND IMPLEMENT THE FUNDED PROGRAM ACTIVITIES.

Fiscal Impact

IS THERE FISCAL IMPACT ASSOCIATED WITH THIS ITEM:	Yes
CITY/STATE/FEDERAL FUNDS:	City
TOTAL:	$5,000
BUDGETED AMOUNT:	$16,455,860
AVAILABLE AMOUNT TO TRANSFER:	N/A
ACCT NAME & GL#/REMAINING BALANCE BEFORE PURCHASE:	Spec Rev Fund Comm Development Grants GL Acct 255-135-44000 Remaining Balance $16,415,860

FISCAL IMPACT STATEMENT (IF THIS IS A BUDGET TRANSFER, YOU MUST ATTACH THE BUDGET ADJUSTMENT FORM):

The City of San Luis will receive $5,000 in grant funding from the Arizona Companion Animal Spay & Neuter Committee. No matching funds are required. The grant will be used exclusively for eligible spay & neuter services.

Attachments

AZCASNC Award Letter

ARIZONA COMPANION ANIMAL SPAY AND NEUTER COMMITTEE
2025/26 GRANT CYCLE

October 6, 2025

City of San Luis
1090 E. Union St.
San Luis, AZ 85349

Dear Jenny:

The Arizona Companion Animal Spay/Neuter Committee has reviewed all grant applications. One hundred and eight (108) programs will benefit from the $835,465 disbursed for the 2025-2026 Grant Period.

We are happy to share that you have been selected to receive grant funds restricted to increasing spay and neuter efforts in your community in the amount of **$5,000 for your Public Spay/Neuter program. These funds must be used for spay/neuter surgeries only.**

Grant funds were made available from the support and sales of the Arizona Companion Animal Spay and Neuter Pet Friendly License Plates, voluntary contributions by Arizona residents through personal income tax returns and a special allocation of funding from the state budget thanks to Senator John Kavanagh's efforts.* As such, we ask that you promote the Spay and Neuter License Plates and AZ Personal Income Tax Return Donation option through newsletters, websites, and media events. We encourage you and your staff to purchase the plates for your vehicles, too.

Grant Terms: Funds may be utilized from the date of this approval notice thru August 15, 2026.

Report Due Dates: Reporting worksheet is attached to this email and can be found on AZPetPlates.org. Future grant opportunities do depend on the timeliness and thoroughness of your report.
Please email reports to: azpetplates@gmail.com

1. INITIAL Report – The first report of grant expenditures must be postmarked or emailed no later than **April 30, 2026** or within thirty (30) days of full expenditure, whichever comes first.

2. FINAL Report – All funds must be expended by **August 15, 2026** at which time the final report is due. Please include copies of your license plate and tax return donation option promotional materials and any copies/examples of vouchers or coupons used for this program.

Payment: In an effort to expedite grant payment, please complete the attached ACH and W-9 forms, **if they have not been provided to our committee in the last 12 months or if your bank account information has changed**. Please send forms to us at azpetplates@gmail.com.

AZPETPLATES.ORG website: The Arizona Companion Animal Spay/Neuter Committee will list your contact person's information as agreed at the time of application. If the Contact information provided on the application has changed, please contact us immediately with the new information. Your organization/agency name, website address, street address, contact person name, telephone number, and email address may also be posted on the website. Please send updates to azpetplates@gmail.com.

ARIZONA COMPANION ANIMAL SPAY AND NEUTER COMMITTEE
2025/26 GRANT CYCLE

***2025/2026 GRANT CYCLE:**

This year, the Spay and Neuter of Animals Fund received another one-time transfer of funds in the amount of $500,000. The $500,000 budget allocation, secured by Senator Kavanagh, made it possible for one hundred and eight (108) applicants to receive grant support this year. Thanks to the generous support from Senator Kavanagh, thousands of residents will be assisted and many more animals will be saved.

Please take a moment to thank Senator Kavanagh for his efforts and support in helping to alleviate the overpopulation of animals plaguing our shelter system, and for his work in keeping pets healthy and happier in their homes. We know he would appreciate hearing from recipients.

You may send Senator Kavanagh a note at - JKavanagh@azleg.gov
Subject: Thank you

Congratulations on your award!

Annette Lagunas, Chairman
Arizona Companion Animal Spay/Neuter Committee

AGENDA ITEM REVIEW FORM

Regular City Council Meeting **7. C.**

Meeting Date: 02/11/2026

Department Head: Eulogio Vera, Director of Public Works, Public Works Department

Submitted By: Jorge Perez, Assistant Director of Public Works, Public Works Department

Action Requested: Motion

ITEM:

Discussion and possible action on any and all matters regarding the acceptance and award of a construction contract to Yuma Valley Contractors, Inc., for the construction of the Lift Station 300 Influent Sewer Force Main project. **(Jorge Perez, Assistant Director of Public Works)**

SUMMARY:

The Department of Public Works is seeking Council approval to accept and award a construction contract to Yuma Valley Contractors, Inc., for the construction of the Lift Station 300 Influent Sewer Force Main project. Yuma Valley Contractors, Inc. was the lowest responsible bidder for this project, at $1,627,560.17. Public Works, in conjunction with its Wastewater Department and its consultant engineer, evaluated all bids received and recommends awarding the contract to Yuma Valley Contractors, Inc.

The Lift Station 300 Influent Sewer Force Main project represents phase 1 of the West Wastewater Treatment Plant expansion project. Phase 2 will consist of the plant expansion, followed by phase 3, which will entail constructing the new operations building.

Following a traditional design-bid-build approach, staff recommends approval of Yuma Valley Contractors, Inc.'s bid in the amount of $1,627,560.17.

RECOMMENDATION / SUGGESTED MOTION:

I MOVE TO AWARD THE CONTRACT TO YUMA VALLEY CONTRACTORS, INC. FOR THE CONSTRUCTION OF THE LIFT STATION 300 INFLUENT SEWER FORCE MAIN PROJECT IN THE AMOUNT OF $1,627,560.17, AS PRESENTED.

Fiscal Impact

IS THERE FISCAL IMPACT ASSOCIATED WITH THIS ITEM:	Yes
CITY/STATE/FEDERAL FUNDS:	Federal & City
TOTAL:	$1,627,560.17
BUDGETED AMOUNT:	$19,700,000.00
AVAILABLE AMOUNT TO TRANSFER:	N/A
ACCT NAME & GL#/REMAINING BALANCE BEFORE PURCHASE:	Wastewater Fund GL Account 310-311-90015 Capital Outlay - CIP Balance $14,150,0003.65

FISCAL IMPACT STATEMENT (IF THIS IS A BUDGET TRANSFER, YOU MUST ATTACH THE BUDGET ADJUSTMENT FORM):

This project is budgeted as part of the West Wastewater Treatment Plant Expansion. Funding for the construction contract will be paid from the WIFA loan approved in December 2025. No additional impact to the Wastewater Fund is anticipated.

Attachments

Bid Advertisement

Bid Manual

Bid Opening Tab

PACE Bid Evaluation

ADVERTISEMENT FOR BIDS
CITY OF SAN LUIS, ARIZONA
LIFT STATION 300 INFLUENT SEWER FORCE MAIN
2025-050

NOTICE IS HEREBY GIVEN THAT sealed bids will be received in the Office of the City Clerk, City Hall, 1090 E. Union Street, City of San Luis, Arizona until 3:00 P.M. Arizona Time on Tuesday, January 27, 2026, for furnishing all labor, materials, equipment, tools and performing all services required for the construction of the **City of San Luis — West Wastewater Treatment Plant (WWTP) — Lift Station 300 Influent Sewer Force Main** project and work incidental thereto. Bids will then be publicly opened and read aloud. Each Bid should be submitted on the Bid Form and be accompanied by a certified or cashiers check or bid bond in the amount of ten (10%) percent of the total amount of the bid.

The proposed work is located within the city limits of the City of San Luis, Arizona at its West Wastewater Treatment Plant site. The work consists of, but is not limited to, construction for replacement of existing force main with approximately 2,900 linear feet of new 16" C900 PVC sewer force main with ductile iron fittings with mechanical restraint joint connections, along with appurtenances and other work incidental to the project as specified in the Contract Document and Project Plans.

The project shall be complete and in place within 120 calendar days from the date of Notice to Proceed (NTP).

Bidding Documents can be downloaded at www.questcdn.com under an individual login for a non-refundable charge of $22.00. Quest CDN Project number is 9989354. Registration with Quest CDN is required to be on plan holders list and receive project communications. Please contact QuestCDN.com at (952) 233-1632 or info@questcdn.com for assistance in free membership registration, downloading, and working with this digital project information. Any questions about obtaining documents can be forwarded to Andrea Jaycox at ajaycox@pacewater.com or (602) 502-9683.

A mandatory Pre-Bid Conference will be held at the City of San Luis Pedro Julian Conference Room in City Hall on Tuesday, January 6, 2025, at 10:00 AM Arizona Time to discuss specifications and any questions Bidders may have. The Pre-bid conference may also be attended virtually via the following link:

Pre-Bid Meeting Lift Station 300 Influent Sewer Force Main - 2025-050
MS Teams Meeting ID: 241 957 936 572 43
Passcode: e6YY2c4E

All bids must be submitted in a sealed envelope and plainly marked: "CITY OF SAN LUIS — WEST WWTP — LIFT STATION 300 INFLUENT SEWER FORCE MAIN — 2025-050."

The City of San Luis reserves the right to cancel this procurement, and/or to reject any or **all bids,** and/or to waive any informality in any bid. No bidder may withdraw his bid for a period of thirty (30) days after the date set for the bid opening thereof:

City of San Luis, Arizona

Jenny Torres
Acting City Manager
Yuma Sun: 12/21/25, 12/28/25

BID MANUAL

FOR
CITY OF SAN LUIS
LIFT STATION 300 INFLUENT SEWER FORCE MAIN UPGRADES
2025-050

City of San Luis
1090 East Union Street
P.O. Box 1170
San Luis, Arizona 85349

APPROVED BY:

Acting City Manager:
Jenny Torres

Mayor:
Nieves Riedel

Vice-Mayor:
Tadeo Azael De La Hoya

Council Members:
Luis Cabrera
Maria Cecilia Cruz
Esteban C. Rosales
Lizeth Servin
Javier Vargas

PREPARED BY:

Pacific Advanced Civil Engineering (PACE)
8723 E. Via de Commercio, #A-204
Scottsdale, AZ 85258
(480) 991-3595

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City of San Luis

Lift Station 300 Influent Force Main Upgrade Project

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CITY OF SAN LUIS SUPPLEMENTAL TO THE MAG UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION AND CITY OF YUMA CONSTRUCTION STANDARD DETAIL DRAWINGS - DATED OCTOBER 2016 (Separate Publication)

ADVERTISEMENT FOR BIDS

CITY OF SAN LUIS, ARIZONA
LIFT STATION 300 INFLUENT SEWER FORCE MAIN
2025-050

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The proposed work is located within the city limits of the City of San Luis, Arizona at its West Wastewater Treatment Plant site. The work consists of, but is not limited to, construction for replacement of existing force main with approximately 2,900 linear feet of new 16" C900 PVC sewer force main with ductile iron fittings with mechanical restraint joint connections, along with appurtenances and other work incidental to the project as specified in the Contract Document and Project Plans. The project shall be complete and in place within 120 calendar days from the date of Notice to Proceed (NTP).

Bidding Documents can be downloaded at www.questcdn.com under an individual login for a non-refundable charge of $22.00. Quest CDN Project number is 9989354. Registration with Quest CDN is required to be on plan holders list and receive project communications. Please contact QuestCDN.com at (952) 233-1632 or info@questcdn.com for assistance in free membership registration, downloading, and working with this digital project information. Any questions about obtaining documents can be forwarded to Andrea Jaycox at ajaycox@pacewater.com or (602) 502-9683.

A mandatory Pre-Bid Conference will be held at the City of San Luis Pedro Julian Conference Room in City Hall on Tuesday, January 6, 2025, at 10:00 AM Arizona Time to discuss specifications and any questions Bidders may have. The Pre-bid conference may also be attended virtually via the following link:

Pre-Bid Meeting Lift Station 300 Influent Sewer Force Main - 2025-050
MS Teams Meeting ID: 241 957 936 572 43
Passcode: e6YY2c4E

All bids must be submitted in a sealed envelope and plainly marked: "CITY OF SAN LUIS — WEST WWTP — LIFT STATION 300 INFLUENT SEWER FORCE MAIN — 2025-050."

The City of San Luis reserves the right to cancel this procurement, and/or to reject any or **all bids,** and/or to waive any informality in any bid. No bidder may withdraw his bid for a period of thirty (30) days after the date set for the bid opening thereof:

City of San Luis, Arizona

Jenny Torres
Acting City Manager
Yuma Sun: 12/21/25, 12/28/25

Instructions for Bidders

City of San Luis

Project Name: City of San Luis
Lift Station 300 Influent Force Main Upgrade

To be considered, bids must be made in accordance with these Instructions to Bidders.

SECTION 1 - DEFINITIONS

1.1 All definitions set forth in the General Conditions are applicable to these Instructions to Bidders.

1.2 Bidding Documents include the Advertisement for Bids, Instructions to Bidders, Bid Form, Bid Bond Form, and the proposed Contract Documents, including any addenda issued prior to the receipt of bids.

1.3 Addenda are written or graphic instructions issued prior to the execution of the contract which modify or interpret the Bidding Documents, including Drawings, conditions of the Contract and Specifications, by additions, deletions, clarifications or corrections. Addenda will become part of the Contract Documents when the Construction Contract is executed.

1.4 The term "Owner" or "City" shall be interpreted to mean City of San Luis, Arizona.

SECTION 2 - BIDDER'S REPRESENTATION

2.1 Before submitting a bid, bidders shall carefully examine the Drawings, Bidding Requirements, Bid Document Contract Forms, General Conditions, Supplementary General conditions, Specifications, and Related Documents, visit the site of the work, and fully inform themselves as to all existing conditions and limitations and shall include in the bid a sum sufficient to cover the cost of all items included in the Contract. The Bidder, if awarded the Contract, shall not be allowed any extra compensation by reason of any matter or thing concerning the Project, which said Bidder might have fully informed himself prior to the building.

SECTION 3 - BIDDING DOCUMENTS

3.1 Bidders may obtain copies of the bidding Documents at:

Bidding Documents can be downloaded at www.questcdn.com under an individual login for a non-refundable charge of $22.00. Quest CDN Project number is 9989354. Registration with Quest CDN is required to be on plan holders list and receive project communications. Please contact QuestCDN.com at (952) 233-1632 or info@questcdn.com for assistance in free membership registration, downloading, and working with this digital project information. Any questions about obtaining documents can be forwarded to Andrea Jaycox at ajaycox@pacewater.com or (602) 502-9683.

SECTION 4 - INTERPRETATION OF BIDDING DOCUMENTS

4.1 Should a Bidder find discrepancies, inconsistencies, or obscurities in, or omissions from the bidding documents, or should he be in doubt as to their meaning, he shall, at once, notify the Engineer, who will issue a written Addendum, clarifying the intent of the documents. Any such item not brought to the Engineer's attention during the bidding period shall be done in accordance with the Engineer's interpretation for the good of the work in accordance with the intent and meaning of the Contract Documents. Neither owner nor

Engineer will be responsible for oral instruction or information. Addenda may not be issued less than 5 Working Days before the time specified for receipt of bids. Questions received less than 5 Working Days prior to the assigned bid date cannot be answered in writing. Should any discrepancies not be clarified by Addendum, the Contractor shall use the most expensive condition shown or specified in bid.

4.2 Prior to the receipt of bids, each person or firm recorded by the Engineer as having received the bidding documents will be notified of any addendum. Addenda will also be available for Inspection wherever the bidding documents are made available for that purpose.

4.3 All Addenda issued by the Engineer during the time of bidding are to be included in the bid and shall become a part of the bidding documents (bidder's responsibility to check for addendums). Acknowledge receipt of Addenda on the Bid form in space provided.

4.4 Point of Contact for questions is: Jorge R. Perez, City of San Luis, Assistant Director of Public Works, jperez@sanluisaz.gov.

SECTION 5 - SUBSTITUTIONS

5.1 When a specific manufacturer, trade name or material is specified, or indicated, it is to establish a standard of quality and shall not be construed as limiting competition. However, components of electrical systems shall be standard items and/or interchangeable with specified manufacturer to facilitate repairs and upkeep by the Owner.

5.2 It shall be the Contractor's responsibility to provide materials of equal standards to those specified. The Engineer shall be the sole judge as to whether or not the products meet the established standards. The Contractor MUST request written approval of equal materials from the Engineer prior to the bid date.

SECTION 6 - 6. BIDDING PROCEDURES

6.1 A bid is invalid if it has not been deposited at the designated location prior to the time and date for receipt of bids indicated in the Invitation to Submit Proposals, or prior to any extension thereof issued to the bidders. No bid will be acceptable unless the entire PROPOSAL PAMPHLET is submitted with the appropriate forms provided and completed. [NO SUBSTITUTE FORMS SHALL BE SUBMITTED].

6.2 All bids must be prepared on the "Bid Form" with all blank spaces filled, the signature in longhand, and without alterations or erasures. Blank spaces requiring dollar amounts must be filled in with dollar amounts. If a line unit price is left blank the price will be considered as zero [$0.00] and extended as such. The total base bid amount must be in words as well as figures. Should any difference in words and figures occur, the amount stated in words shall govern. The form must be executed in either ink or type written. Where bidder is a corporation, the Bid Form must be signed by the legal name of the corporation followed by the name of state of incorporation, date of incorporation and the legal signature of an officer authorized to bind the corporation to a contract.

6.3 Bids shall be submitted as follows:

6.3.1 Submit one (1) original and one (1) copy in a ***sealed*** envelope. This is to be put inside a shipping envelope or box that is clearly marked "City of San Luis – Lift Station 300 Influent Sewer Force" on the outside and addressed as indicated immediately below:

- If submitter is sending the proposal by US Mail, the proposal package should be sent only to:

  Sonia Cornelio

Office of City Clerk
City of San Luis
P.O. Box 1170
San Luis, AZ 85349

- If submitter is sending the proposal package via a delivery service or hand delivered, the proposal should be sent only to:

Sonia Cornelio
Office of City Clerk
City of San Luis
City Hall
1090 E. Union St.
San Luis, AZ 85349

Deadline for receipt of proposals is at 3:00 P.M. Arizona Time on Tuesday, January 27, 2026. Late proposals will be returned unopened.

FAX and Internet submissions are NOT acceptable and will be rejected.

6.3.2 The Bid envelope shall also contain the following:

- Bid Security
- Subcontractors list form

6.3.3 Bidders Contact Information - It is important that the City of San Luis keeps accurate records of potential bidders. It is the bidder's responsibility to complete registration with Quest CDN per the Advertisement for Bids to be on plan holders list, download bid package and receive project communications.

6.4 Bid Security:

6.4.1 Each bidder is required to submit, with his bid, a certified or cashier's check upon a solvent bank, or a surety bond for ten percent (10%) of the amount of the Base Bid made payable to the Owner.

6.4.1.1 If more than one proposal is submitted, only one Bid Security is required for the largest base Bid amount, however, this bond shall apply to any and/or all bids submitted.

6.4.2 The Bid Security shall be given as a guarantee that the bidder will enter into a contract to perform the work, if awarded to him, and provide a satisfactory Performance Bond, Payment Bond, and Warranty Bond as required under the provisions of Title 34, Chapter 2, Article 2, Arizona Revised Statutes. Bid Security shall be declared forfeited as liquidated damages if he refuses to enter into said contract upon request to do so by the Owner.

6.4.3 Bid Security will be returned to the unsuccessful bidders, and to the successful bidder upon the execution of a satisfactory Performance Bond, Payment Bond and Warranty Bond, and Construction Contract.

6.4.4 Bidders may withdraw their bid at any time prior to bid opening but may not resubmit them. No bid may be modified or withdrawn after the bid opening for a period of 30 days except where the award of the contract has been delayed at least 31 days.

6.5 A mandatory Pre-Bid Conference will be held at the City of San Luis Pedro Julian Conference Room in City Hall on Tuesday, January 6, 2025, at 10:00 AM Arizona Time to discuss specifications and any questions Bidders may have. The Pre-bid conference may also be attended virtually via the following link:

Pre-Bid Meeting Lift Station 300 Influent Sewer Force Main - 2025-050
MS Teams Meeting ID: 241 957 936 572 43
Passcode: e6YY2c4E

SECTION 7 - SUBCONTRACTOR LIST FORM

7.1 Complete the Subcontractor List Form, listing a single company, firm, or organization name only for each branch of the work.

7.2 If a change occurs in the list, brought about by the exercising of ANY of the alternates (if applicable) involved in the bidding, the bidder must show said changes on the list. If no name appears other than those listed under the Base Bid, adherence to those names shall be mandatory, no matter which alternate, if any, is exercised.

7.3 The competency and responsibility of bidders and their proposed subcontractors will be considered in making the award.

7.4 The Contractor shall pay the cost of all permits, changes, meters, connections, fees, etc., directly to governmental agencies having jurisdiction to comply with the law of the place of the Project in order to complete the work. The bidders' attention is directed to the fact that all applicable state laws, municipal ordinances, and the rules and regulations of all authorities having jurisdiction shall apply to the Contract.

SECTION 8 - REJECTION OF BIDS

8.1 The Bidder acknowledges the right of the Owner to reject any or all bids, to waive any informality or irregularity in any bid received, or to withhold the award for any reason he determines. In addition, the Bidder recognizes the right of the Owner to reject a bid if the Bidder failed to furnish any required Bid Security or to submit the data required by the Bidding Documents, or if the bid is in any way incomplete or irregular. Bidders shall understand that the Owner will not be responsible for any errors or omissions in the preparation of the bid.

SECTION 9 - AGREEMENT

9.1 The form of Agreement which the successful Bidder will be required to execute in four (4) original counterparts.

Progress payments will be made to the Contractor by the Owner in an amount equal to 90% of that due until substantial completion of the project. Payment of 95% of the due will be made upon substantial completion of the project. Payment of full payment due will be made upon final completion.

SECTION 10 - WARRANTY

10.1 The Contractor certifies by submitting his bid that he has familiarized himself with all specified products, materials, and systems which are proposed for inclusion in the required work, and that said materials, products, and systems are appropriate for the use(s) intended. He additionally certifies by submitting this bid that he shall, in fact, install said materials, products, and systems in the work properly and in rigid compliance with the terms and conditions of the Contract Documents, and shall issue his written warranty applicable to the work as required by the applicable Supplementary General Conditions. If the Bidder determines that the

proposed materials, products, and/or systems are not appropriate for the use(s) intended, he shall submit his written exceptions attached to the Bid Form.

The Contractor, by entering into this Contract, guarantees the Work against defective workmanship or materials for a period of two (2) years from the date established by the date of Substantial Completion.

SECTION 11 - PERFORMANCE, PAYMENT AND WARRANTY BONDS

11.1 The Contractor is hereby required to provide and pay for Performance, Payment and Warranty Bonds. Bonds shall secure the faithful performance (100%) of the Contract and the payment of all obligations (100%) arising there under, in such form as the Owner may prescribe and with such sureties that he may approve. Bonds shall be active and held by the Owner for duration of the guaranty (warranty).

SECTION 12 - CONTRACTOR LICENSE LAW, ELIGIBILITY & PREFERENCE

12.1 The Contractor shall comply with and require all subcontractors to comply with State of Arizona and City Contractor's License Laws. Contractor shall comply with the provisions of "an Act to Regulate the Business of Contracting", Title 32, Chapter 10, Arizona Revised Statutes with latest adopted revisions and 'Contractor's License Laws and Regulations" dated July, 1981, published by the Arizona State Registrar of Contractors, or the latest revision thereof adopted under the provision of AIRS title 32, chapter 10, Articles 2 and 3.

The prime Contractor shall have a State of Arizona Classification "A" Contractor's license to perform the work. A bid submitted by any Contractor not properly licensed at the time of bid opening shall be considered non-responsive and will be rejected.

SECTION 13 - NONDISCRIMINATION

13.1 In connection with the performance of work under this Contract, the Contractor agrees (as prescribed in A.R.S. Section 23-373) not to discriminate against any employee or applicant for employment because of race, sex, religion, color, or national origin. The aforesaid provision shall include, but not be limited to, the following: employment upgrading, demotion, or transfer, recruitment or recruitment advertising, layoff or termination, rates of pay or other forms of compensations and selection for training, including apprenticeship. The Contractor agrees to post hereafter in conspicuous places, available for employees and applicants for employment, notices setting forth the provisions of the nondiscrimination clauses. The contractor further agrees to insert the foregoing provision in all subcontracts hereunder, except subcontracts for standard commercial supplies or raw materials.

SECTION 14 - COPIES OF DOCUMENTS FURNISHED

14.1 The Contractor shall be furnished three (3) sets of appropriate Construction Documents free of charge at the Pre-Construction meeting.

Additional copies may be obtained from the Engineer by paying cost of reproduction of same.

SECTION 15 - INSURANCE

15.1 The contractor is required to provide and pay for insurances. He shall file, with his Performance, Payment and Warranty Bonds, all required Certificates of Insurance.

15.2 The Contractor shall not commence work under this Contract until he has obtained all the insurance required under this paragraph and such insurance has been approved by the Owner, nor shall the Contractor

allow any Subcontractor to commence work on his subcontract until the insurance require of the subcontractor has been so obtained and approved.

15.3 The Contractor shall procure and maintain during the life of this contract, Workmen's Compensation Insurance as required by applicable State or Territorial Law for all of his employees to be engaged in work at the site of the project under this contract, and in any such work sublet, the Contractor shall require the Subcontractor similarly to provide Workmen's Compensation Insurance for all of the latter's employees to be engaged in such work unless such employees are covered by the protection afforded by the Contractors Workmen's Compensation Insurance. In case any class of the employees engaged in hazardous work on the project under this contract are not protected under the Workmen's Compensation Statute, the Contractor shall provide and shall cause each subcontractor to provide adequate employer's liability insurance for the protection of such of his employees as are not otherwise protected.

15.4 The Contractor shall provide public liability insurance and show evidence of the following limits:

Bodily Injury	$1,000,000.00
Property Damage	$1,000,000.00
Auto Liability (owned non-owned. hired)	$1,000,000.00

The insurance policy shall not have more than Five Thousand dollars ($5000.00) deductible and shall name **City of San Luis as additionally insured.**

SECTION 16 - ADDITIONAL SERVICES

16.1 Contractor agrees to pay for additional testing services, additional Engineering services, and any similar related additional costs as designated in the Contract Documents.

SECTION 17 - SUMMARY OF THE WORK

17.1 Refer to the Project Overview & Scope of Work for description of the work.

SECTION 18 - SUBSTANTIAL COMPLETION

18.1 Substantial Completion will be accomplished no later than 120 days from dated letter "Notice to Proceed".

SECTION 19 - LIQUIDATED DAMAGES

19.1 The liquidated damages for this project shall be determined by the Schedule of Liquidated Damages in City of San Luis Supplemental to the MAG Uniform Standard Specifications.

SECTION 20 - EVALUATION AND AWARD

20.1 Bid opening will take place immediately after the close of the bidding.

20.2 City staff will convene in the Pedro Julian Conference Room at the San Luis City Hall, open the proposals, and read the bids into the record.

20.3 Award will be made to the lowest qualified responsive bidder.

20.4 Formal award of contract will be at a City Council meeting within 30 days of the close of bidding.

SECTION 21 - PROTESTS

21.1 All responders will receive notification via e-mail regarding their status vis-a-vis the proposed contract award. Responders not selected have 5 days from e-mail sent date to initiate protest proceedings. To do this, a dissatisfied party must lodge a protest with Eulogio Vera, Public Works Director, via receipted e-mail (evera@sanluisaz.gov) or by certified mail (Attn: Eulogio Vera/City of San Luis/P.O. Box 1170/San Luis, AZ 85349). In the absence of a successful protest, the contract will be awarded to the most responsive qualified bidder.

Project Overview & Scope of Work

City of San Luis

PROJECT NAME

The name of this project is **CITY OF SAN LUIS LIFT STATION 300 INFLUENT FORCE MAIN UPGRADES**. All correspondence and documents are to reference "CITY OF SAN LUIS LIFT STATION 300 INFLUENT FORCE MAIN UPGRADES".

OVERVIEW

This PROPOSAL PAMPHLET contains the bid documents necessary to respond to the Request for Bid for **CITY OF SAN LUIS LIFT STATION 300 INFLUENT FORCE MAIN UPGRADES**. This project is being undertaken by the City of San Luis, Arizona funds. This bid pertains to those activities described herein under the Scope of Work.

It is especially important that bidders are aware of the following:

1. This solicitation is open to general contractors and subcontractors licensed to operate in the State of Arizona.

2. Davis-Bacon wage rates **DO** apply.

SCOPE OF WORK

Scope of Work, **CITY OF SAN LUIS LIFT STATION 300 INFLUENT FORCE MAIN UPGRADES**.

The proposed work is located within the city limits of the City of San Luis, Arizona at its West Wastewater Treatment Plant site. The work consists of, but is not limited to, construction for replacement of existing force main with approximately 2,900 linear feet of new 16" C900 PVC sewer force main with ductile iron fittings with mechanical restraint joint connections, along with appurtenances and other work incidental to the project as specified in the Contract Document and Project Plans.

Bid Kit

City of San Luis

Lift Station 300 Influent Force Main Upgrades

BID FORM

TO: City of San Luis, Arizona
1090 East Union Street
P.O. Box 1170
San Luis, Arizona 85349

BIDDER:

Project Name: City of San Luis Lift Station 300 Influent Force Main Upgrades

In compliance with the ADVERTISEMENT FOR BIDS:

Having examined the CONTRACT DOCUMENTS, site of work, and being familiar with the conditions to be met, hereby submits the following BID for furnishing the material, equipment, labor and everything necessary for the completion of the work listed and agrees to execute the CONTRACT DOCUMENTS and furnish the required CONTRACT AND LABOR AND MATERIAL SURETY 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 Maricopa Association of Governments (MAG) Uniform Standard Specifications and Details for Public Works Construction as adopted by the City of San Luis, the City of Yuma Construction Standard Detail Drawings – 2019 edition [details], the City of San Luis Supplemental to the MAG Uniform Standard Specifications and Details for Public Works Construction and the City of Yuma Construction Standard Detail Drawings, except as otherwise required by the PLANS, TECHNICAL SPECIFICATIONS and GENERAL CONDITIONS;

Understands that this BID for construction of this PROJECT shall be submitted with a proposal guarantee of cash, certified check, cashier's check or BID SURETY BOND for an amount not less than 10 percent of the amount bid;

Agrees that upon receipt of NOTICE OF AWARD, from the City of San Luis, Arizona, Bidder will execute the CONTRACT DOCUMENTS within ten (10) calendar days;

Understands that the work shall commence on day 1 of the Contract Time and be completed within **120 calendar days.**

Hereby acknowledges receipt of and agrees Bidder's PROPOSAL is based on the following Addenda listed by number and date issued):

Number	Date	Number	Date

(List any additional addenda on the back of this sheet)

And hereby submits the following BID SCHEDULE of units and quantities as a part of this BID KIT:

BID SCHEDULE

TO: City of San Luis, Arizona
1090 East Union Street
P.O. Box 1170
San Luis, Arizona 85349

BIDDER:

Project Name: City of San Luis Lift Station 300 Influent Force Main

Bid Item	Description	Unit	Quantities	Unit Price	Total Cost
1	Mobilization / Demobilization	LS	1		
2	Installation of New 16" PVC C900 Influent Force Main, Valves, Fittings and Appurtenances	LS	1		
3	Installation of New 8" PVC C900 Influent Force Main, Valves, Fittings and Appurtenances	LS	1		
4	Installation of 20" and 24" PVC C900 Portion of the Influent Force Main, Valves, Fittings and Appurtenances	LS	1		
5	Installation of 12" PVC C900 Portion of the Influent Force Main, Valves, Fittings and Appurtenance	LS	1		
6	Installation of Clean-out and Manholes Structures	LS	1		
7	Base Lump Sum	LS	1		

NOTE: Detailed descriptions of bid items are on the following page.

TOTAL $ _____

5% CONTINGENCY SUBTOTAL $ _____

TOTAL BASE BID $ _____

TOTAL BASE BID AMOUNT IN WORDS

_____

Bid Item 1 - Mobilization / Demobilization

Payment shall be made for mobilization and demobilization to and from the site, for bonds and insurance. CONTRACTOR shall provide all the necessary mobilization requirements for the proper construction activities, include providing all the necessary accommodations for personnel and equipment as describe in these Specification.

Bid Item 2 - Installation of New 16" PVC C900 Influent Force Main, Valves, Fittings and Appurtenances

Payment shall be made for site work associated with the installation of the new influent FM as described in the Contract Documents. The work shall include all pipes, fitting, and associated labor and materials required for the proper trenching, installation, and backfill of the pipes. This shall also include any potholing, pavement restoration, wire tracing and surveying of the required work.

Bid Item 3 - Installation of New 8" PVC C900 Influent Force Main, Valves, Fittings and Appurtenances

Payment shall be made for site work associated with the installation of the new influent FM as described in the Contract Documents. The work shall include all pipes, fitting, and associated labor and materials required for the proper trenching, installation, and backfill of the pipes. This shall also include any potholing, pavement restoration, wire tracing and surveying of the required work.

Bid Item 4 - Installation of 20" and 24" PVC C900 Portion of the Influent Force Main, Valves, Fittings and Appurtenances

Payment shall be made for site work associated with the installation of the new influent FM as described in the Contract Documents. The work shall include all pipes, fitting, and associated labor and materials required for the proper trenching, installation, and backfill of the pipes. This shall also include any potholing, pavement restoration, wire tracing and surveying of the required work.

Bid Item 5 - Installation of 12" PVC C900 Portion of the Influent Force Main, Valves, Fittings and Appurtenance

Payment shall be made for site work associated with the installation of the new influent FM as described in the Contract Documents. The work shall include all pipes, fitting, and associated labor and materials required for the proper trenching, installation, and backfill of the pipes. This shall also include any potholing, pavement restoration, wire tracing and surveying of the required work.

Bid Item 6 - Installation of Clean-out and Manholes Structures

Payment shall be made for the work associated with the installation of the clean-outs and manholes and associated appurtenances as shown on the drawings, specified in the contract documents.

Bid Item 7 - Base Lump Sum

Payment shall be made for the work associated with the portion of the project not specifically included in the above bid schedule but required to be completed as part of the project as shown on the drawings, specified in the contract documents, and as required by the District. This includes all general conditions, civil, mechanical, structural work, including Bonding, Insurance, and Overhead & Profit.

THIS BID IS SUBMITTED BY ,

a corporation organized under the laws of the State of _____,

or a partnership consisting of _____,

or individual trading as _____;

of the City of _____(City, State) and is the holder of Arizona State

Contractor's license(s): _____(type)

Classification _____License No. _____.

The Bidder hereby certifies that as of the below date, the bond amount posted with the Arizona Registrar of Contractors is

$_____and that the Bidder's actual volume of work has not exceeded the contemplated gross volume pursuant to Arizona Administrative Code, Title 4 Chapter 9 [Authority: ARS §32-1101 et seq.]

Respectfully Submitted,

Bidder _____

Address _____

_____

City, State, ZIP _____

E-mail _____

By:

[Signature] [Date]

Name _____

Title _____

ATTEST: [If Bidder is an Individual]

Witness:

[Signature] [Date]

Name and Title _____

BID SURETY BOND

Project Name: City of San Luis Lift Station 300 Influent Force Main

For: City of San Luis, Arizona

KNOW ALL MEN BY THESE PRESENTS:

That we, _____, as Principal, (hereinafter called the Principal),

and the _____, a corporation duly organized under the laws of the State of

_____and duly licensed and possessing a certificate of authority to transact surety business in the State of Arizona, as Surety, (hereinafter called the Surety), are held and firmly bound unto City of San Luis, Arizona [hereinafter called City] as Obligee, in the sum of ten percent (10%) of the total amount of the bid of Principal, submitted by him to the City for the work described below, for the payment of which sum, well and truly to be made, the said Principal and the said Surety, bind ourselves, our heirs, executors, and administrators, successors, and assigns, jointly and severally, firmly by these presents, and in conformance with Arizona Revised Statutes [ARS].

WHEREAS, the said Principal is herewith submitting its PROPOSAL for the City of San Luis Lift Station 300 Influent Force Main

NOW, THEREFORE, if the City shall accept the PROPOSAL of the Principal and the Principal shall enter into a CONTRACT with the City in accordance with the terms of the PROPOSAL and give the Bonds and Certificates of Insurance as specified in the Standard Specifications with good and sufficient Surety for the faithful performance of the CONTRACT and for the prompt payment of labor and materials furnished in the prosecution of the CONTRACT, or in the event of the failure of the Principal to enter into the CONTRACT and give the Bonds and Certificates of Insurance, if the Principal pays to the City 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, ARS, and all liabilities on this bond shall be determined in accordance with the provisions of the section to the extent as if it were copied at length herein.

Signed and sealed this _____day of_____, 20____.

_____		_____	
Principal Firm	[Seal]	Surety Firm	[Seal]
_____		_____	
Principal Signature		Surety Signature	
_____		_____	
Name and Title		Name and Title	
		_____	
		Agency of Record	
		_____	
		Address	

{NOTE: attach current power of attorney}

NON-COLLUSION AFFIDAVIT

Project Name: City of San Luis Lift Station 300 Influent Force Main

For: City of San Luis, Arizona

That pursuant to Section 1128 of Title 23 USC, the undersigned in submitting a PROPOSAL for performing the following work by CONTRACT, being duly sworn, disposes and says that he has not, nor anyone associated with the business identified below, either 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 this CONTRACT.

Description of CONTRACT:

_____
Signature of Bidder

_____
Title

_____
Business Name

_____
Address

Subscribed and sworn to before me this _____day of _____, 20_____.

_____
Notary Public

Notary Public in and for the County of _____, State .

My Commission Expires_____, 20_____.

BIDDER'S PARTICIPATION,
SUBCONTRACTOR AND SUPPLIER LIST

Project Name: City of San Luis Lift Station 300 Influent Force Main

For: City of San Luis, Arizona
1090 East Union Street
P.O. Box 1170
San Luis, Arizona 85349

This form shall be submitted along with the BID in the same sealed envelope.

The BIDDER must list below the names and addresses of all qualified subcontractors and major suppliers to be employed on the various portions of the work indicated.

BIDDER AND ALL CONTRACTORS SHALL BE DULY LICENSED IN ACCORDANCE WITH ARIZONA REVISED STATUTES AT THE TIME OF THE BID OPENING.

	BIDDER,	
	SUB CONTRACTOR AND/OR SUPPLIER	**CURRENT AZ LICENSE [SUB CONTRACTOR]**
1.	_____	_____
2.	_____	_____
3.	_____	_____
4.	_____	_____
5.	_____	_____

Contract Kit

City of San Luis

Lift Station 300 Influent Force Main Upgrades

CONTRACT

for the Construction of

CITY OF SAN LUIS WWTP
LIFT STATION 300 INFLUENT FORCE MAIN UPGRADES

This agreement ("Contract") is made and entered into this ____ day of _____ 2026, by and between:

Contractor Name and Address. An Arizona for-profit corporation ("Contractor") and	City of San Luis 1090 East Union Street (Physical Address) P.O. Box 3750 (Mailing Address) San Luis, Arizona 85349 An Arizona municipal corporation ("City")

The Contractor and City may be referred to individually as the "Party" and collectively as the "Parties."

WHEREAS, the scope of work requires the Contractor to furnish any and all labor, materials, equipment, transportation, utilities, services, and facilities required to perform all work for the City of San Luis – West WWTP Lift Station 300 (LS300) Influent Force Main Upgrades ("Project"), per the Contractor's bid of 2025-050, ("Proposal"). and to completely and totally remove and install the materials therein for the City, in a good and workmanlike and substantial manner and to the satisfaction of the City through its engineers ("ENGINEERS"), or his properly authorized agents and strictly pursuant to and in conformity with the plans and specification prepared by the ENGINEERS, and with such modifications of the same and other documents that the OWNER may make through the ENGINEERS or his properly authorized agents, as provided herein; and

WHEREAS, San Luis City Council, at a properly noticed open meeting, awarded the Bid to the Contractor on ____ day of _____ 2026; and

WHEREAS, at the same meeting, San Luis City Council directed staff to finalize an agreement with _____, Inc.;

NOW, THEREFORE, the above recitals are incorporated into this Contract. In consideration of the City paying the sum of $_____ to the Contractor and the Contractor constructing an influent force main with appurtenances and other work incidental in the manner and at the time provided in this Contract, and in consideration of the other mutual benefits and obligations contained in this Contract the Parties agree as follows:

ARTICLE 1 - PARTICIPANTS AND PROJECT

City:	Jenny Torres, City Manager City of San Luis, Arizona Telephone: (928) 341-8520 E-mail: jtorres@sanluisaz.gov
City PROJECT MANAGER:	Jorge Perez, Assistant Director of Public Works City of San Luis Telephone: (928) 341-8577 E-mail: jperez@sanluisaz.gov
Contractor:	Contractor Representative Contractors Name. Telephone: E-mail:
Contractor MANAGER:	_____ Contractor Name. Telephone: _____ E-mail: _____
PROJECT ENGINEER / DESIGNER:	Duong Do, P.E., F.ASCE PACE Telephone: (714) 481-7223 E-mail: ddo@pacewater.com
PROJECT DESCRIPTION:	City of San Luis, West WWTP -LS300 Influent Force Main Upgrades
PROJECT LOCATION:	Force Main is from LS 300 to West WWTP on Cesar Chavez Blvd in San Luis, Arizona

ARTICLE 2 - CONTRACT DOCUMENTS

The Contract between the City and the Contractor shall consist of the following items, collectively the "Contract Documents:"

1. this Contract;
2. Change Orders (if any);
3. Performance bond and payment bond (required by A.R.S. § 41-2574, also known as contract bond and labor & materials bond), bid bond, and other bonds;
4. Project General Requirements and Technical Specifications;
5. Construction Plans;
6. General Conditions of the Contract;
7. Bid documents {including but not limited to the advertisement for bids, bid schedule, addenda (if any), additive bid items (if any)}, and the Proposal;
8. 2016 City of San Luis Supplemental to the 2015 MAG Uniform Standard Specifications and Details for Public Works Construction and City of Yuma Construction Standard Detail Drawings, MAG Uniform Standard Specifications and Details for Public Works Construction, City of Yuma Construction Standard Detail Drawings – Edition 2019; and
9. Certificates of Insurance.

By this reference, the above Contract Documents are made a part of this Contract to the same extent as if set forth in full here.

In the event of a conflict of language between the items, the documents shall govern in the order listed above. The Contract Documents shall govern in all other matters not otherwise specified by the Contract between the Parties. All previous contracts (if any) between the Contractor and City are not applicable to this Contract or other resultant contracts.

ARTICLE 3 - DESIGN PHASE SERVICES

The Contractor is not required to provide design phase services to the City in relation to this Project.

ARTICLE 4 - CONSTRUCTION SERVICES

4-1 General.

4-1.01 The Contractor agrees, at its own cost and expense, to do all Work necessary and required to fully, timely, and properly complete the construction of the Project in strict accordance with the Contract 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 Project Schedule.

4-1.02 The Contractor shall provide all the labor and materials and perform the Work in accordance with Division 01 - General Requirements of the Specifications and Section 4 of the General Conditions. Below are some but not all of the major components of the construction services and the corresponding subsections of Division 01 - General Requirements of the Specifications and Section 4 of the General Conditions.

4-1.03 At all times relevant to this Contract and performance of the Work, the Contractor shall fully comply with all laws, regulations, or legal requirements applicable to the City, the Project, and the Contract, including, without limitation, those set forth in the General Conditions.

4-1.04 The Contractor shall perform the Work under this Contract using only those firms, team members, and individuals designated by Contractor consistent with the Contractor's accepted Bid, or otherwise, approved by the City pursuant to the General Conditions. No other entities or individuals may be used without the prior written approval of the Project Manager.

4-1.05 The Contractor shall comply with all terms and conditions of the General Conditions and the requirements of the Specifications.

4-1.06 The terms of this Contract shall control in the event of a conflict between it and the General Conditions, General Requirements of the Specifications, or any exhibit to the Contract or appendix to the General Conditions.

4-1.07 For purposes of this provision, "Work Product" shall 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 in the future created. All Work Product shall 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, the Contractor, by entering into this Contract, transfers and assigns ownership of the copyright in such Work to the City. Notwithstanding anything to the contrary in this Contract, all Work Product prepared or otherwise created in connection with the performance of this Contract, including the Work, are to be and remain the property

of the City. The rights in this Section are exclusive to the City in perpetuity.

4-2 The Contractor's Pre-Contract and Pre-Work Deliverables. The Contractor shall provide the deliverables in accordance with Division 01 - General Requirements of the Specifications and Section 4.2 of the General Conditions.

4-3 Pre-Construction Conference. The Contractor shall attend the pre-construction conference in accordance with Division 01 - General Requirements of the Specifications and Section 4.3 of the General Conditions.

4-4 Performance of the Work (Including Field Measurements, Subcontractors, and Suppliers). The Contractor shall control and maintain the Project site in accordance with Section 4.4 of the General Conditions and Division 01 - General Requirements of the Specifications.

4-5 Control of the Project Site. The Contractor shall control and maintain the Project site in accordance with Division 01 - General Requirements of the Specifications and Section 4.5 of the General Conditions.

4-6 Project Safety. The Contractor shall implement and enforce Project safety in accordance with Section Division 01 - General Requirements of the Specifications and 4.6 of the General Conditions.

4-7 Materials Quality, Substitutions, and Shop Drawings. The Contractor shall provide materials testing and submit substitute materials and shop drawings in accordance with Division 01 - General Requirements of the Specifications and Section 4.7 of the General Conditions.

4-8 Project Record Documents. The Contractor shall maintain and make available the Project Record Document in accordance with Division 01 - General Requirements of the Specifications and Section 4.8 of the General Conditions.

4-9 Warranty and Correction of Defect Work. The Contractor shall provide warranties and correct defective Work in accordance with Division 01 - General Requirements of the Specifications and Section 4.9 of the General Conditions.

ARTICLE 5 - CITY'S RESPONSIBILITIES

5-1 The City shall have the responsibilities and provide the information specified in, and subject to, the conditions set forth in Section 5 of the General Conditions and Division 00 – Procurement and Contracting Requirements of the Specifications.

ARTICLE 6 - CONTRACT TIME

6-1 Contract Time.

The Contract Time shall start with the Notice to Proceed (NTP) and end with Final Acceptance, as set forth in Section 6-4 below. The Notice to Proceed cannot be issued prior to the City's approval and acceptance of the Bid.

6-1.01 The Contract Time shall be as set forth in the Project Schedule. The Contractor agrees that it will commence the performance of the Work and complete the Project within the Contract Time.

6-1.02 Time is of the essence of this Contract, for the Project, and for each phase and designated milestone of the Contract.

6-1.03 Failure on the part of the Contractor to adhere to the approved Project Schedule will be deemed a material breach and sufficient grounds for the City to terminate this Contract.

6-2 Project Schedule. The Project Schedule, as required by Division 01 - General Requirements of the Specifications and Section 6.2 of the General Conditions, shall be updated and maintained throughout the Contractor's performance under this Contract in accordance with Division 01 - General Requirements of the Specifications and Section 6.2 of the General Conditions.

6-3 Final Completion and Final Acceptance.

6-3.01 **Substantial** Completion will be obtained within the time period set forth in the Project Schedule as defined in Section 2 of the General Conditions and Division 01 - General Requirements of the Specifications.

6-3.02 Final Completion will be determined, and Final Acceptance will be issued pursuant to Division 01 - General Requirements of the Specifications and Sections 6.3 and 6.4 of the General Conditions.

6-4 Liquidated Damages.

6-4.01 The Contractor acknowledges and agrees that if the Contractor fails to obtain the Final Completion of the Work within the Contract Time, the City will sustain extensive damages and serious loss as a result of such failure. The Contractor agrees to commence Work within ten (10) Days of the date of the Notice to Proceed from the City and to achieve Substantial Completion within **one hundred and twenty (120) calendar Days after the Notice to Proceed.** The Contractor also agrees to pay liquidated damages, the sum of $1,190.00, for each consecutive calendar Day thereafter.

6-4.02 The City may deduct liquidated damages described in Subsection 6-4.01 above from any unpaid amounts then or thereafter due to the Contractor under this Contract. Any liquidated damages not so deducted from any unpaid amounts due the Contractor shall be payable to the City at the demand of the City, together with interest from the date of the demand at the highest lawful rate of interest payable by the Contractor.

6-4.03 Nothing in this Contract shall be deemed to constitute a waiver of any other remedy available to the City in the event of the Contractor's default under this Contract prior to full performance of the Work, including, as applicable, specific performance or completion of the Work on behalf of the Contractor, the cost and expense of which shall be offset against any monies then or thereafter due to Contractor (if any) and otherwise immediately reimbursed to City by the Contractor.

ARTICLE 7 - CONTRACT PRICE

7-1 Contract Price.

7-1.01 In exchange for the Contractor's full, timely, and acceptable performance and construction of the Work under this Contract, and subject to all of the terms of this Contract, the City will pay the Contractor the Contract Price, which is $_____

7-1.02 The Contract Price is all-inclusive and specifically includes all fees, costs, insurance and bond premiums, and taxes of any type necessary to fully, properly, and timely perform and construct the Work.

ARTICLE 8 - PAYMENT

Payments shall be made to the Contractor in accordance with Division 01 - General Requirements of the Specifications and Section 8 of the General Conditions.

ARTICLE 9 - CHANGES TO THE CONTRACT

Changes to the Contract may be made in strict accordance with Division 01 - General Requirements of the Specifications and Section 9 of the General Conditions.

ARTICLE 10 - TERMINATION

The Contract may be terminated in accordance with Section 10 of the General Conditions.

ARTICLE 11 - INSURANCE AND BONDS

11-1 The Contractor shall provide Insurance as provided in the Insurance Requirements and in accordance with Section 11.1 of the General Conditions. The Contractor shall provide proof of such insurance and all required endorsements in forms acceptable to the City prior to commencing any Work under this Contract.

11-2 The Contractor shall provide performance, payment and warranty bonds to the City in accordance with Section 11.2 of the General Conditions and A.R.S. § 34-222.

11-3 The Contractor's failure to provide proof of insurance and the required endorsements, or the required bonds, in forms acceptable to the City will be a material breach and grounds for termination for cause under this Contract.

ARTICLE 12 - INDEMNIFICATION

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

ARTICLE 13 - DISPUTE RESOLUTION

Any claims or disputes relating to this Contract shall be resolved according to the dispute resolution process set forth in Section 13 of the General Conditions.

ARTICLE 14 - MISCELLANEOUS PROVISIONS

The miscellaneous provisions set forth in Section 14 of the General Conditions shall apply to this Contract.

ARTICLE 15 - COUNTERPARTS

This Contract may be executed in one or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument. The signature pages from one or more counterparts may be removed from such counterparts. Such signature pages may all be attached to a single instrument so that the signatures of all Parties may be physically attached to a single document.

ARTICLE 16 - AUTHORITY

Each Party represents and warrants to the other Party: (i) that such Party is duly organized and validly existing under the laws of the State of Arizona and has full corporate power and authority to enter into this AGREEMENT and to carry out the provisions of this AGREEMENT; (ii) such Party is duly authorized to execute and deliver this AGREEMENT and to perform its obligations under this AGREEMENT; (iii) the person executing this AGREEMENT on such Party's behalf has been duly authorized to do so by all requisite corporate action, and (iv) this AGREEMENT is a legal and valid obligation binding upon the Parties and enforceable in accordance with its terms.

The Parties have executed this Contract in Yuma County, Arizona, on the day and year set forth above, which is the day the last Party signed this Contract. The original Contract will be filed with the City of San Luis Clerk.

City of San Luis

_____
Nieves Riedel, Mayor

Date: _____

Attest:

_____
Sonia Cornelio, City Clerk

Approved As to Form

_____
Kay Marion Macuil, City Attorney

Contractor

_____
Contractor Representative

Date: _____

CONTRACT PERFORMANCE SURETY BOND

STATUTORY PERFORMANCE BOND PURSUANT TO
TITLE 34, CHAPTER 2, ARTICLE 2,
OF THE ARIZONA REVISED STATUTES
(Penalty of this Bond must be 100% of the Contract amount)

Project Name: City of San Luis Lift Station 300 Influent Sewer Force Main

For: City of San Luis, Arizona

KNOW ALL MEN BY THESE PRESENTS:

That , _____, (hereinafter called the Principal), as Principal,

and _____, a corporation organized and existing under the laws of the State of

_____and duly licensed and possessing a certificate of authority to transact surety business in the State of Arizona, with its principal office in the City of _____, (hereinafter called the Surety) as Surety, are held firmly bound unto City of San Luis, Arizona (hereinafter called Obligee) in the amount of

_____Dollars ($_____) for the payment whereof, the said 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 CONTRACT with the Obligee, dated the _____day of _____20___, to construct the **City of San Luis Lift Station 300 Influent Sewer Force Main**, which CONTRACT 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 said Principal shall faithfully perform and fulfill all the undertakings, covenants, terms, conditions and agreements of the CONTRACT during the original term of CONTRACT and any extension of the CONTRACT, with or without notice to the Surety, and during the life of any guaranty required under the CONTRACT, and also performs and fulfills all the undertakings, covenants, terms, conditions, and agreements of all duly authorized modifications of the CONTRACT that may hereafter be made, notice of which modifications to the Surety being hereby waived; then the above obligation is void. Otherwise to remain in full force and effect.

PROVIDED, HOWEVER, that this bond is executed pursuant to the provisions of Title 34, Chapter 2, Article 2, of the Arizona Revised Statutes, and all liabilities on this bond shall be determined in accordance with the provisions of Title 34, Chapter 2, Article 2, Arizona Revised Statutes, to the extent as if it were copied at length herein.

The prevailing party in a suit on this bond shall be entitled to such reasonable attorney's fees as may be fixed by a judge of the Court.

Witness our hands this _____day of _____, 20____.

_____
Agency of Record

_____
Agency Address

_____	_____
Surety Firm	Principal Firm [Seal]
Surety Signature	Principal Signature
By _____	By _____
Name and Title {Attach current power of attorney}	Name and Title
_____	_____

LABOR AND MATERIALS SURETY BOND

STATUTORY PAYMENT BOND PURSUANT TO
TITLE 34, CHAPTER 2, ARTICLE 2,
OF THE ARIZONA REVISED STATUTES
(Penalty of this Bond must be 100% of the Contract amount)

Project Name: City of San Luis Lift Station 300 Influent Sewer Force Main

For: City of San Luis, Arizona

KNOWN BY ALL MEN THESE PRESENTS:

That , _____, (hereinafter called the Principal), as Principal,

and _____, a corporation organized and existing under the laws of the State of

_____and duly licensed and possessing a certificate of authority to transact surety business in the State of Arizona, with its principal office in the City of , (hereinafter called the Surety) as Surety, are held firmly bound unto the City of San Luis, Arizona (hereinafter called Obligee) in the amount of _____Dollars

($ _____) for the payment whereof, the said 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 CONTRACT with the Obligee, dated the _____day of

_____, 20___, for **City of San Luis Lift Station 300 Influent Sewer Force Main Project** which CONTRACT 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 the CONTRACT, 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, of the Arizona Revised Statutes, and all liabilities on this bond shall 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 they were copied at length in this agreement.

The prevailing party in a suit on this bond shall recover as a part of the judgment reasonable attorney fees that may be fixed by a judge of the court.

Witness our hands this_____day of _____, 20____.

_____
Agency of Record

_____
Agency Address

Surety Firm Principal Firm [Seal]

By _____By_____

Surety Signature Principal Signature

Name and Title {Attach current power of attorney} Name and Title

_____ _____

BOND NO. PREMIUM NO.

WARRANTY BOND

(City of San Luis, Arizona)

Lift Station 300 Influent Sewer Force Main

WHEREAS, the City of San Luis, Arizona (hereafter "City") and

_____(hereafter "Principal") have entered into an

agreement ("Agreement") dated _____, 20____, whereby Principal agreed to install and complete certain designated public improvements as a condition of contract, relating to the project known as Wellsite 5 – New Manganese Treatment Unit, at Principal's own expense and which Agreement is hereby referred to and made a part hereof; and

WHEREAS, Principal is required under the terms of the Agreement to furnish warranty security for the Work performed and equipment supplied and installed pursuant to the Agreement in the amount of one hundred percent percent (100%) of the amount to be paid by City to Principal to guarantee replacement and repair of the improvements as described in the Agreement for a period of two years following substantial completion of said improvements.

NOW, THEREFORE, we, Principal, and _____

("Surety"), are held and firmly bound unto City in the penal sum of _____dollars ($_____) lawful money of the United States, for the payment of which we bind ourselves, our heirs, successors, executors, and administrators, jointly and severally. The condition of this obligation is such that if Principal shall indemnify City for all loss that City may sustain by reason of any defective materials, equipment, components, or workmanship which become apparent during the period of two years from and after substantial completion of the improvements, as provided by the terms of the Agreement, then this obligation shall be null and void; otherwise, this obligation shall remain in full force and effect.

As a part of the obligation secured hereby and in addition to the face amount specified, costs and reasonable expenses and fees shall be included, including reasonable attorneys' fees incurred by City in successfully enforcing the obligation, all to be taxed as costs and included in any judgment rendered.

Surety shall provide City with thirty (30) days' written notice of Principal's default prior to Surety terminating, suspending or revoking the bond.

Witness our hands this _____ day of _____, 2024.

_____	_____
Principal Seal	Surety Seal
By: _____	By: _____
Attorney in fact	Its: _____
_____	_____
Agency of Record	Agency Address

CERTIFICATE OF INSURANCE

(City of San Luis, Arizona)

Project Name: City of San Luis Lift Station 300 Influent Sewer Force Main

The _____

Certifies that the following insurance policies have been issued on behalf of:

Name of Insured: _____

Address of Insured:_____

	Type of Insurance	Policy No.	Effective Date	Expiration Date	Amount	Limits of Liability
(1)	Workmen's Compensation					Statutory
(2)	Contractors Protective Bodily Injury				$1,000,000	Each Occurrence
(3)	Contractor's Protective Property Damage				$1,000,000 $1,000,000	Each Accident Aggregate
(3)	Contractual Bodily injury				$1,000,000	Each Occurrence
(3)	Contractual Property Damage				$1,000,000 $1,000,000	Each Accident Aggregate
(4)	Automobile Bodily Injury & Property Damage				$1,000,000	Each Occurrence

When the project includes construction of a new, or modification of an existing building [in addition to the above types]:

(0) Fire and extended coverage plus Vandalism and Malicious Mischief for the full amount of the CONTRACT, with the County of Yuma named as an additional insured.

		Policy No.	Expiration Date	Amount
(5)	Umbrella Coverage [if required within Special Provisions]			

Policy Includes coverage for:

(1) a. Damage caused by blasting
b. Damage caused by collapse or structural injury
c. Damage to underground utilities

(2) Liability assumed in construction agreements and other types of CONTRACTS or agreements in effect

in connection with insured operations.

(3) All owned, hired or non-owned automotive equipment used in connection with the insured operation.

CERTIFICATE OF INSURANCE [CONTINUED]

(City of San Luis, Arizona)

Project Name: City of San Luis Lift Station 300 Influent Sewer Force Main

It is agreed that none of these policies will be canceled or changed so as to affect this certificate until thirty (30) days written notice of such cancellation or change has been delivered to the City of San Luis, 1090 East Union Street, P.O. Box 1170, San Luis, Arizona 85349.

It is further agreed that:

(1) These policies shall not expire until all work has been completed and the PROJECT has been accepted in writing by the City of San Luis. A renewal Certificate of the required coverage must be sent to the City of San Luis not less than thirty (30) days prior to expiration date).

(2) the policy shall be endorsed to include the following additional insured language: "City of San Luis, Arizona" shall be named as an additional insured with respect to liability arising out of the activities performed by, or on behalf of the Contractor, including completed operations".

This certificate is not valid unless countersigned by an authorized representative of the Insurance Company.

Countersigned by: _____

_____
Date

_____
Signature

_____
Address

_____
Telephone Number

CONTRACTOR'S AFFIDAVIT REGARDING SETTLEMENT OF CLAIMS

(City of San Luis, Arizona)

PART 100, SECTION 109, GENERAL CONDITIONS

Project Name: City of San Luis
Lift Station 300 Influent Sewer Force Main Project

To: City of San Luis, Arizona

Whom it may concern:

This is to certify that all lawful claims for materials, rental of equipment and labor used in connection with the construction of the above PROJECT, whether by subcontractor or claimant in person, have been duly discharged.

The undersigned, for the consideration of $_____, as set out in the final pay estimate, as full and complete payment under the terms of the CONTRACT, hereby waives and relinquished 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 San Luis, Arizona against any and all liens, claims of 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 performance and materials furnished for the performance of said installations.

Signed and dated at _____, this_____day of _____20_____.

CONTRACTOR

Signed _____ Name/Title

STATE OF ARIZONA)

) SS.

COUNTY OF _____)

THE FOREGOING INSTRUMENT WAS SUBSCRIBED AND SWORN TO BEFORE ME THIS _____DAY OF

_____, 20____.

NOTARY PUBLIC _____

MY COMMISSION EXPIRES _____

GENERAL CONDITIONS OF THE CONTRACT

These terms will be the General Conditions for the Contract and are incorporated therein and shall be fully binding upon the Contractor.

SECTION 1 - SCOPE OF THESE GENERAL CONDITIONS

These General Conditions encompass provisions that apply and are incorporated into all construction contracts entered into by the City of San Luis unless otherwise specifically excluded in the executed Contract. Sections 2 through 14 of these General Conditions apply to all construction contracts, in whatever form, including without limitation, Fixed Price, Unit Price, Construction Manager at Risk (CM@Risk), Guaranteed Maximum Price (GMP) Cost-Based, and Job Order Contracts (JOC).

SECTION 2 - GENERAL DEFINITIONS

2.1 The Definitions in the Invitation for Bid (IFB), the Request for Proposals (RFP), the Request for Qualifications (RFQ), and/or the JOC Solicitation (JOC) giving rise to the Contract shall apply to these General Conditions and the Contract for the Project.

2.2 **Change Order –** A written instrument issued after execution of the Contract 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 Contract Price, the extent of the adjustment to the Contract Time, or modifications of other contract terms. Only a Change Order allows the Contract Price or the Contract Time or both to be changed.

2.3 **City –** City of San Luis, Arizona, a municipal corporation, with whom the Contractor has entered into the Contract and for whom the Services and/or Work are to be provided pursuant to the Contract(s).

2.4 **Contract -** The written agreement executed between the City and Contractor, including all of the Contract Documents**.**

2.5 **Contract Documents -** The documents which together form the Contract between City and Contractor, as identified in Article 2 of the Contract, or are otherwise incorporated into the Contract, including the Contract, the exhibits and attachments to it, 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, and any other documents so designated in the Contact.

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

2.7 **Contract Time(s) -** The number of days or the dates related to the Final Completion as stated in Contract Documents. The Contract Time is set forth in the Contract and is based upon the Project Schedule agreed to by the City in writing.

2.8 **Contractor -** The person or corporation with whom the City has entered into a contract for construction-related work or services related to the Project at issue. As used in these General Conditions, the term

Contractor includes CM@Risk and JOC under contract with the City to provide pre-construction and/or construction services.

2.9 **Contractor Payment Request** - The form that is accepted by the City and used by the Contractor in requesting progress payments or final payment and which shall include such supporting documentation as is required by the Contract Documents and/or City.

2.10 **Construction Documents** - The plans, specifications, and drawings prepared and issued by the Design Professional and approved by the City for construction, meaning the documents are sealed by the Contractor (as required), acceptable for permitting, and incorporated into the Contract by reference. All amendments and modifications to the Construction Documents must be approved in writing by the City prior to incorporation into the Contract.

2.11 **Critical Path** - The critical path is the sequence of Project network activities that add up to the longest overall duration. Once established in the Project Schedule, the Critical Path for the Project shall not be changed without prior written approval of the City.

2.12 **Day** - Calendar day(s) unless otherwise specifically stated in the Contract Documents.

2.13 **Final Acceptance** - The written notice from the City to the Contractor that Final Completion has occurred.

2.14 **Final Completion** - The point when all items of the Work, including punch list items, have been completed to the City's satisfaction as reflected in the written Final Acceptance.

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

2.16 **MAG Specifications** – The latest edition adopted by the City of the Uniform Standard Specifications for Public Works Construction published by Maricopa Association of Governments ("MAG"), or the latest revision published by MAG.

2.17 **MAG Standard Details** – The latest edition adopted by the City of the Uniform Standard Details for Public Works Construction published by Maricopa Association of Governments ("MAG"), or the latest revision published by MAG.

2.18 **Notice to Proceed (NTP)** - A written notice given by the City to the Contractor fixing the date on which the Contractor will start to perform the Contractor's obligations under the Contract. The Notice to Proceed shall not be issued until the Contract Price is approved and accepted by the City.

2.19 **Project** – The Project specified in the Contract (including the Job Order).

2.20 **Project Manager** - The Project Manager designated in Article 1 of the Contract, or any successor Project Manager the City designates. The Project Manager has the authority to act on behalf of the City, as delineated and limited by the Contract Documents and applicable law. The City shall communicate with the Contractor through the Project Manager. However, the Project Manager has no authority to bind the City or City Council in contravention of any City code, State or Federal statute or regulation, or these General Conditions.

2.21 **Project Schedule** - The schedule for the completion of the Project agreed to and/or required by the City and incorporated into the Contract.

2.22 **Project Specific Provisions** - Additional conditions that apply to the specific Project and/or Scope of Work.

2.23 **Proposal** - A Proposal submitted to the City by a Contractor in response to an Invitation for Bid (IFB), Request for Qualifications (RFQ), a Request for Proposals (RFP), or other solicitation or request by the City. Bids may be Fixed Price, Guaranteed Maximum Price (GMP), Unit Price, or other form as required or requested by the City in the Bid Schedule.

2.24 **Requests for Information (RFIs)** - Formal written request from the Contractor to the City and/or Contractor for the Project seeking clarification or additional information needed for the Contractor to properly complete the Work and/or Services under the Contract. The City may require RFI's to be submitted on a specific form or in a specified format.

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

2.26 **Scope of Work** - The scope of work agreed to and/or required by the City and incorporated into the Contract as set forth in the IFB and/or an Exhibit to the Contract.

2.27 **Subconsultant** - A person, firm, or corporation having a Contract with a Consultant/Contractor to furnish services required as its independent professional associate or consultant with respect to the Project.

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

2.29 **Supplier -** Any person or entity providing materials or property for the Project.

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

2.31 **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:

2.31.1 performing or furnishing labor;

2.31.2 furnishing and incorporating materials, resources, and equipment into the construction; and

2.31.3 performing or furnishing services and documents as required by the Contract Documents for the construction phase.

SECTION 3 - STANDARD SPECIFICATIONS AND DETAILS

3.1 The City operates under the 2016 City of San Luis Supplement to the 2015 MAG Uniform Standard Specifications for Public Works Construction.

3.2 The City also operates under the 2009 City of Yuma Construction Standard Detail Drawings.

3.3 The City also operates under the 2006 Yuma County Public Works Standards – Volume III – Storm Drainage Facilities.

3.4 The above standard specifications and details may be viewed and downloaded at the City of San Luis website: https//www.sanluisaz.gov/DocumentCenter/Index/268.

3.5 The City may require particular sections of the revisions of the MAG Specifications and Standard Details after the 2015 revision that the City adopted.

3.6 Current and Historical MAG Specifications and Standard Details may be viewed at the Maricopa Association of Governments website at https://azmag.gov/Programs/Public-Works/Specifications-and-Details.

3.7 The MAG Specifications and Standard Details and the City's amendments to them are incorporated into the Contract.

SECTION 4 - CONTRACTOR'S RESPONSIBILITIES FOR CONSTRUCTION SERVICES

4.1 General

4.1.1 The Contractor shall construct the Work in accordance with the Contract Documents and as outlined in the Contract Documents to the satisfaction of the City, exercising the degree of professional care, skill, diligence, quality, and judgment that a professional Contractor engaged, experienced, and specializing in the construction of facilities of similar scope, function, size, quality, complexity, and detail in urban areas throughout the United States comparable to the City would exercise at such time, under similar conditions. The Contractor shall, 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 The Contractor shall 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.

4.1.3 Pursuant to A.R.S. §41-4401, the Contractor warrants to the City that the Contractor and all its Subcontractors are in compliance and will comply with all Federal Immigration laws and regulations that relate to their employees and with the E-Verify Program under A.R.S. § 23-214(A). The Contractor acknowledges that a breach of this warranty by the Contractor or any of its Subcontractors is a material breach of this Contract subject to penalties up to and including termination of the Contract or any subcontract. The City retains the legal right to inspect the papers of any employee related to this statute and of the Contractor or any Subcontractor who works on this Contract to ensure compliance with this warranty. The City may conduct random verification of the Contractor's employment records and any of its Subcontractors' employment records to ensure compliance with this warranty. The City will not consider the Contractor or any of its Subcontractors in material breach of the foregoing warranty if the Contractor and its Subcontractors establish that they have complied with the employment verification provisions prescribed by 8 USCA §1324(a) and (b) of the Federal Immigration and Nationality Act and the e-verify requirements prescribed by Arizona Revised Statutes §23-214(A). The provisions of this Section must be included in any agreement the Contractor enters into with its Subcontractors who provide services under this Contract 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. Breach of this warranty shall constitute a material breach of the contract and shall subject the Contractor to penalties, including termination of the Contract at the sole discretion of the City.

4.1.4 The Contractor further understands and acknowledges the applicability of the Americans with Disabilities Act, the Immigration Reform and Control Act of 1986, and the Drug-Free Workplace Act of 1989 to the Contract. The Contractor understands and acknowledges that it must also comply with A.R.S. § 34-301, "Employment of Aliens on Public Works Prohibited," and A.R.S. § 34-302, as amended, "Residence Requirements for Employees," and A.R.S. § § 12-2701 through .12-704 "Immigration and Nationality Law Practice Act" as amended.

4.2 Contractor's Pre-Contract and Pre-Work Deliverables

4.2.1 Before beginning any Work under the Contract, the Contractor shall execute the Contract and deliver to the City the items listed in Section 4.2.2 below within seven (7) days after the award of the Contract, and the City must execute the Contract. Failure to do so will be a material breach of the Contract, entitling the City to terminate the Contract for Cause.

4.2.2 When the Contractor delivers the executed Contract to the City, the Contractor shall also deliver to the City such bonds and certificates of insurance with endorsements in such amounts (and other evidence of insurance requested by the City) required under SECTION 10 - of these General Conditions, and as the Contract requires.

4.2.3 The Contractor shall obtain all necessary permits for the Work and pay all applicable fees unless otherwise noted on the plans and in the specifications. The Contractor is specifically notified of the need to obtain traffic control permits from the Arizona Department of Transportation (ADOT) and the necessary environmental permits or file the necessary environmental and regulatory permit notices. Copies of all permits and the associated notices must be provided to the City prior to starting the permitted activity.

4.3 Pre-Construction Conference

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

4.3.2 Prior to the Pre-construction Conference, the Contractor shall provide the Project Manager with a Schedule of Values 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 shall not be greater than the Contract Price. The Schedule of Values shall be reviewed at the Pre-Construction Conference and revised in response to comments and questions from the City. Once accepted by the City in writing, the Schedule of Values for the Project will not be changed without the City's prior written approval.

4.4 Performance of the Work (Including Field Measurements, Subcontractors, and Suppliers)

4.4.1 Unless otherwise provided in the Contract Documents to be the responsibility of the City or a separate Contractor, the Contractor shall provide through itself or its 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 Contract Documents.

4.4.2 The Contractor's Superintendent shall be present at the Project site at all times that material Work under this Contract is taking place. The Contractor's Superintendent or designee shall be present at the Project site at all times any other Work under this Contract is taking place. All elements of the Work shall be under the direct supervision of a foreman or his designated representative on the Project site, who shall have the authority to take actions required to carry out that particular element of the Work properly.

4.4.3 Before ordering materials or doing work, the Contractor and each Subcontractor shall verify measurements at the Project site and shall be responsible for the correctness of such measurements. No extra charge or compensation will be allowed because of differences between the actual dimensions and the dimensions indicated on the Contract Documents, including the drawings.

4.4.4 If the Contractor observes errors, discrepancies, or omissions in the Contract Documents, it shall promptly notify the Contractor and City and request clarification. The Contractor shall be liable to the City for damages resulting from errors, inconsistencies, or omissions in the Contract Documents or for differences between field measurements or conditions in the Contract Documents. If the Contractor, with the exercise of reasonable care, should have recognized such error, inconsistency, omission, or difference and fails to report it to the City, and if the Contractor proceeds with the Work affected by such observed errors, discrepancies, or omissions, without receiving such clarifications, it does so at its own risk.

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

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

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

4.4.8 The Contractor shall not change or replace the Contractor's Project Manager or Superintendent on this Project without an explanation for the change being given to the City and receiving prior written approval of the change from the City, which approval will not be unreasonably withheld.

4.4.9 Subcontractors whose scope of work has a value greater than fifteen percent (15%) of the total Contract Price may be required to furnish performance and payment bonds to the Contractor if directed in writing by the City.

4.5 Control of the Project Site

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

4.5.1 The Contractor shall take whatever steps, procedures, or means necessary to prevent dust nuisance due to construction operations. The dust control measures shall be maintained at all times to the satisfaction of the City and in accordance with the requirements of the Yuma County dust control regulations.

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

4.6 Project Safety

4.6.1 The Contractor is responsible for the safety of the job site for the Contractor's employees as well as for members of the general public and others who may drive or walk through or be at the Project site.

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

4.6.3 The Contractor shall provide a "competent person" as required by O.S.H.A. regulations. The "competent person" shall be identified at the Pre-Construction Conference, and the City will be advised in writing of any changes.

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

4.6.5 As between the City and the Contractor, the Contractor is responsible to the City for any and all the safety issues relating to the Work on the Project. The Contractor shall administer and manage the safety program. The safety program will include, but not necessarily be limited to, reviews of the safety programs of each Subcontractor. The Contractor shall monitor the establishment and execution of compliance with all applicable regulatory and advisory agency construction safety standards.

4.6.6 The Contractor shall maintain and have sole responsibility for safety on the job site.

4.7 Materials Quality, Substitutions, and Shop Drawings

4.7.1 All construction materials to be used or incorporated in the Project are subject to inspection, quality control and quality assurance testing, and approval or rejection by the City. Any material rejected by the City shall be removed immediately and replaced in an acceptable manner to the City at no additional cost to the City. When quality control and quality assurance tests indicate noncompliance with the Contract Documents, retesting shall be performed by the same testing laboratory that performed the tests that indicated noncompliance.

4.7.2 A schedule of shop drawing submissions shall be submitted with the Project Schedule for City approval that avoids bulk submissions to the extent reasonably possible. 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. The schedule of shop drawing submissions shall include all of the items for which shop drawings are required by the Contract Documents, including the specifications.

4.7.3 Long Lead Time Items. The Contractor shall submit shop drawings, as required by the Project Engineer, on all long lead items to be furnished and installed as part of the Project within ten (10) days after execution of the Contract. In addition, the Contractor shall 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, the Contractor shall order said long lead items

within fifteen (15) days after execution of the Contract. Within two (2) days after ordering long lead items, the Contractor shall supply copies of all purchase orders, along with an accurate delivery schedule from the supplier.

4.8 Project Record Documents

The Contractor shall ensure that any and all changes or modifications done as a result of field changes are accurately reflected in red-lined markings. At the completion of construction, all red lines and markings shall be compiled to aid in the creation of “as-built” plans.

4.9 Warranty and Correction of Defect Work

4.9.1 The Contractor warrants to the City that the construction of the Work shall be of good and workmanlike quality and completed in strict conformance with all applicable laws, rules, and regulations and the plans and specifications and all other terms and conditions of the Contract Documents, including all materials and equipment furnished as part of the construction, shall be new unless otherwise specified in the Contract Documents, of good quality, in conformance with the Contract Documents and free of defects in materials and workmanship.

4.9.2 The date of Final Completion shall be the beginning of the Warranty period, regardless of early completion by some Subcontractors of their work.

4.9.3 Unless otherwise specified in the Contract Documents, the Contractor and Subcontractors shall provide to the City all of the following written warranties that apply to the Work in a form acceptable to the City.

(i) General Warranty — Two (2) years

(ii) Mechanical Contractor — Two (2) years

(iii) Plumbing Contractor — Two (2) years

(iv) Electrical Contractor — Two (2) years

(v) Caulking — One (1) year

(vi) Steel Joists, Certificate of Manufacturer

(vii) Exterior Metal Wall System — Five (5) years

(viii) Painting — One (1) year

(ix) Termite — Five (5) years

(x) Sheet Metal: Zinc coating thickness on hot-dipped galvanized Metals — One (1) year

4.9.4 Nothing in the warranties contained in the Contract Documents are intended to limit any manufacturer’s warranty, which provides the City with greater warranty rights than set forth in this Section or the Contract Documents. The Contractor will provide the City with all manufacturers’ warranties prior to Final Acceptance.

4.9.5 A progress payment, or partial or entire use or occupancy of the Project by the City, shall not constitute Acceptance of Work not in accordance with the Contract Documents.

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

SECTION 5 - CITY'S RESPONSIBILITIES

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

5.2 **Contract Services** The City may contract separately with one or more contractors to provide construction administration of the Project. The Contractor's Contract, as well as other firms hired by the City, shall be furnished to the Contractor. The contractor shall not have the right to limit, restrict, or reject any Contract modifications that are mutually acceptable to the City and the Contractor.

SECTION 6 - CONTRACT TIME

6.1 Contract Time

6.1.1 The Contract Time shall start with the Notice to Proceed ("NTP") and end with Final Acceptance, as set forth in Section 6.3 below.

6.1.2 The Contract Time shall be as set forth in the Project Schedule. The Contractor agrees that it will commence the performance of the Work and complete the Project within the Contract Time.

6.1.3 Time is of the essence of this Contract, for the Project, for the Work, and for each phase and/or designated milestone of the Project.

6.2 Project Schedule

6.2.1 The Project Schedule shall be updated and maintained throughout the Contract Time.

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

6.2.3 An updated Project Schedule shall be submitted monthly to the City as part of the Payment Request.

6.2.4 The Contractor shall provide the City with a monthly status report with each Project Schedule detailing the progress of the Work, including:

6.2.5 Acceptance of a submitted schedule by the City should in no way be construed as an affirmation or admission that the schedule is reasonable or workable by the Contractor. The responsibility for completing the Work on the Project within the Contract Time remains the obligation of the Contractor. The City's review shall not relieve the Contractor from compliance with the requirements of the Contract

Documents or be construed as relieving the Contractor of its complete and exclusive control over the means, methods, sequences, and techniques for executing the Work.

6.2.6 Critical Path Method (CPM)

6.2.6.1 Unless otherwise specified in the Contract, the Project Schedule shall include a Critical Path Method (CPM) diagram schedule showing the sequence of activities, the interdependence of each activity, and identifying the Critical Path.

6.2.6.2 The CPM diagram schedule shall 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 shall be presented in a time-scaled graphical format for the Project as a whole.

6.2.7 Float Time

6.2.7.1 The total Float time within the overall schedule is for the exclusive use of the City. However, the City may approve the Contractor's use of Float time as needed to meet contract milestones and the Project completion date.

6.2.7.2 The Contractor shall 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 or resource sequencing. No time extensions will be granted nor delay damages paid until a delay occurs which extends the Work beyond the Contract Time.

6.2.7.3 Rain-Related Delays. In preparing the Project Schedule, The Contractor is required to take into account all relevant weather conditions, including normal rainfall and distribution. No additional Compensation shall be given for any rain-related delays or impacts on the Work or the Project Schedule. The burden of documenting normal rainfall, excessive rainfall, and the impact on Critical Path activities is on the Contractor.

6.3 Final Completion and Final Acceptance

6.3.1 Unless otherwise expressly agreed to in writing by the City, Final Completion must be obtained by no later than Three hundred sixty-five (365) calendar days after the date of Notice to Proceed. Failure to timely obtain Final Completion will be a material breach of the Contract.

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

6.3.3 Final Payment under Section 8.2 below shall not be due, owing, or paid by the City until the Final Completion is obtained.

6.4 Liquidated Damages

6.4.1 Liquidated Damages. The Contractor acknowledges and agrees that if the Contractor fails to obtain Final Completion of the Work within the Contract Time, the 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, the City and the Contractor agree that if Contractor fails to achieve Final Completion of the Work within the Contract Time, the City shall be entitled to retain or recover from the Contractor, as liquidated damages and not as a penalty, the applicable dollar sum amount in Subsection 108.9 of the 2016 City of San Luis Supplement to the 2015 MAG Uniform Standard Specification for Public Works Construction per calendar day, commencing from the Completion Date required under the Contract until the actual date of the Final Completion of the Work.

6.4.2 The City may deduct liquidated damages described in this Section 6.4 from any unpaid amounts then or thereafter due Contractor under this Contract. Any liquidated damages not so deducted from any unpaid amounts due to the Contractor shall be payable to the City at the demand of the City, together with interest from the date of the demand at the highest lawful rate of interest payable by the Contractor.

6.4.3 Nothing herein shall be deemed to constitute a waiver of any other remedy available to the City in the event of Contractor's default under this Contract prior to the 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 shall be offset against any monies then or thereafter due to Contractor (if any) and otherwise immediately reimbursed to City by Contractor.

SECTION 7 - CONTRACT PRICE

7.1 **Fixed Price Contracts** The Contract Price shall be the amount set forth in the Contract.

7.2 **City Sales Tax** The Contractor is required to pay Sales Taxes on any contracting activity done for the City, and this cost shall be included in all Contract Prices.

SECTION 8 - PAYMENT

8.1 Payment for Construction Services

8.1.1 Monthly progress payments for certified work and material delivered to the Project site for the preceding month shall be paid on or before fourteen (14) business days after the estimate of the Work is certified and approved. The submittal estimate shall be deemed certified and approved for payment after seven (7) days from the date of submission unless the City's Project Manager issues a written finding setting forth items not approved for payment.

8.1.2 The City shall retain ten percent (10%) of all progress payments as insurance of proper performance of the Contract or, at the option of the Contractor, a substitute security may be provided by the Contractor in an authorized form approved by the City. The Contractor is entitled to all interest from any such substitute security.

8.1.3 When the Contract is fifty percent (50%) completed, one-half of the amount retained or securities substituted shall be paid to the Contractor upon the Contractor's request, provided the Contractor is making satisfactory progress on the Contract. There is no specific cause or claim requiring a greater amount to be retained. After the Contract is fifty percent (50%) completed, no more than five percent (5%) of the amount of any subsequent progress payments made under the Contract shall be retained, providing the Contractor is making satisfactory progress on the Project. If at any time the City determines satisfactory

progress is not being made, ten percent (10%) retention shall be reinstated for all progress payments made under the Contract subsequent to the determination.

8.1.4 . Unless the City Project Manager delivers specific written findings of deficiencies and expected cost to cure, any retention shall be paid, or substitute security shall be returned to the Contractor within sixty (60) Days after Final Completion and Acceptance of Work under the Contract. The City may withhold an amount from the progress payment sufficient to pay the expenses the City's Project Manager reasonably expects to incur in correcting the deficiency set forth in the written finding.

8.1.5 The Contractor, and all Subcontractors, shall pay to Subcontractors or material Suppliers within seven (7) days of receipt of each progress payment unless otherwise agreed in writing by the parties, the respective amounts allowed the Contractor or Subcontractor on account of the Work performed or materials delivered to the extent of each such Subcontractor's or material Supplier's interest therein. No agreement for construction may materially alter the rights of any Contractor, Subcontractor, or material Supplier to receive prompt and timely payment as provided under this Section. These monthly progress payments to Subcontractors or material Suppliers shall be passed on payments received pursuant to this Section. Any diversion by the Contractor or Subcontractor of payments received for Work performed or failure to reasonably account for the application or use of such payments constitutes grounds for disciplinary action by the Registrar of Contractors. The Subcontractor or material Supplier shall notify the Registrar of Contractors and the City in writing of any payment less than the amount or percentage approved for the class or item of work as set forth in this Section. The Subcontractor may notify the City's Project Manager in writing, requesting that the City notify the Subcontractor in writing within five (5) days from payment of each progress payment made to the Contractor. The Subcontractor's request remains in effect for the duration of the Subcontractor's work on the Project.

8.1.6 Nothing in this Section 8.1 prevents the Contractor at the time of application/certification to the City from withholding application or certification to the City for payment to the Subcontractor or material Supplier for unsatisfactory job progress, defective work, or materials not remedied, disputed work or materials, third party claims filed or reasonable evidence that claim will be filed, failure of a Subcontractor to make timely payment for labor, equipment and materials, the Subcontract.

8.2 **Final Payment** Subject to all of the City's rights to withhold or offset payment and other rights under the Contract, Final Payment, including remaining retainage, shall be paid only after:

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

(ii) necessary operating manuals, any excess materials and supplies necessary for matching materials and supplies incorporated into the Work, and complete "as-built" drawings (including the Building Information Model, if required by the Contact Documents), plans, and specifications have been delivered to City;

(iii) 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 the City;

(iv) all conditions and requirements imposed by the City or any financing entity for the corresponding disbursement have been met; and

(v) the Contractor delivers to the City a Contractor Payment Request Form requesting Final Payment.

8.3 **The City's Right to Withhold Payment** The City may withhold payment to such extent as may be necessary in the City's opinion to protect the City from loss for which the Contractor is responsible, including, without limitation:

(i) Defective Work not remedied;

(ii) Third-party claims filed or reasonable evidence indicating probable filing of such claims unless Contractor provides security acceptable to the City;

(iii) Failure of Contractor to make payments properly to Subcontractors or for labor, materials, or equipment;

(iv) Reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Price;

(v) Damage to the City or another Contractor or any third party for which the Contractor may have an obligation under Article 12 of the General Conditions;

(vi) Reasonable evidence that the Work will not be completed within the Contract Time and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay; or

(vii) Persistent failure to carry out the Work in accordance with the Contract Documents.

8.4 **Joint/Direct Checks** Payments to the Contractor may be made by checks payable jointly to the Contractor and its employees, agents, Subcontractors, and Suppliers, or any of them. When in the sole opinion of the City, it is advisable, payments may be made directly to the Contractor's Subcontractors. Any amount so paid shall be deducted from the amounts owed to the Contractor under this Contract.

8.5 **Payment Not A Waiver** No payment (nor use or occupancy of the Project by the City) shall be deemed Acceptance or approval of the Work or as a waiver of any claims, rights, or remedies of the City.

8.6 **Liens and Bond Claims** The Contractor shall make all payments, in the time required, of all labor and materials furnished to the Contractor in the course of the Work and shall promptly furnish evidence of such payments as the City may require. The Contractor shall pay when due all claims arising out of the performance of the Work covered by this Contract 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, shall 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 Contract. The 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 ten (10) days upon receiving notice or obtaining actual knowledge of the existence of such liens or claims. In addition, the Contractor agrees to defend, indemnify, and hold harmless the 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 by Contractor. The obligations under this Section 8.4 survive termination of this Contract.

8.7 Financial Record Keeping and City's Audit Right

8.7.1 Records for all Contracts between the City and the Contractor shall, upon reasonable notice, be open to inspection and subject to audit, scanning, and/or reproduction during normal business working hours. The City or its designee may conduct such audits or inspections throughout the term of this Contract and for a period of three years after Final Payment or longer if required by law.

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

SECTION 9 - CHANGES TO THE CONTRACT

9.1 Extra Work/Changes in the Work

9.1.1 The City reserves the right to make such changes in the plans and specifications for the Work as it may deem appropriate. Any such change as set forth in a written Change Order or Extra Work Order shall be deemed a part of this Contract as if originally incorporated into this Contract.

9.1.2 Not used

9.1.3 The Contractor shall not be entitled to payment for additional work unless a written Change Order or Extra Work Order, in form and content prescribed by the City, has been executed by the City prior to starting the additional work.

9.1.4 Any agreement that modifies the terms of the Contract (including Change Orders) shall be approved in writing by the Project Manager and approved by the San Luis City Council if necessary. Once properly executed by both Parties, these modifications to the Contract shall have the same effect as if they had been included in the original Contract.

9.2 **Accuracy of Change Order Pricing Information** Signature by the contracting Parties shall constitute full accord and satisfaction between the City and the 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 or other modification of the Contract, the Parties agreed to in writing.

SECTION 10 - TERMINATION

10.1 Termination by the City for Cause

10.1.1 If, for any reason, the Contractor fails to fulfill in a timely and proper manner its obligations under the Contract Documents, or if the Contractor violates any of the covenants, agreements, or stipulations of this Contract, the City shall thereupon have the right to terminate the Contract by giving written notice to the Contractor of such termination and specifying the effective date of the termination. In such event, all finished or unfinished site or structural improvements, as well as all materials or equipment acquired or stored by the Contractor under this Contract, shall, at the option of the City, become the City's property. The Contractor shall be entitled to receive just and equitable compensation for any Work satisfactorily completed under this Contract.

10.1.2 Notwithstanding Section 10.1.1, the Contractor shall not be relieved of liability to the City for damages sustained by the City by virtue of any breach of this Contract by the Contractor, and the City may withhold any payments to the Contractor for the purpose of set-off until such time as the exact amount of damages due the City from the Contractor is determined.

10.2 **Termination by the City for Convenience** The City may also terminate the Contract at any time for its convenience upon seven (7) business days' written notice to the Contractor specifying the termination date. In the event of termination, which is not the fault, in whole or in part, of the Contractor, the City shall pay to the 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 Contract, no further payments shall be due from the City to the Contractor.

10.3 **A.R.S. § 38-511 and Other Statutory Requirements** This Contract is subject to and may be terminated by the City in accordance with the conflict provisions of A.R.S. § 38-511. The Contractor certifies, to the extent permitted by law, that it is not currently engaged in and agrees that for the duration of this Contract, it will not engage in a boycott of Israel, as that term is defined in A.R.S. § 35- 393. The Contractor certifies, to the extent permitted by law, that it does not currently, and agrees for the duration of this Contract, it will not use the forced labor of the ethnic Uyghurs in the People's Republic of China, nor use any goods or services produced by them, nor use any contractors, Subcontractors, or Suppliers that use them. If the Contractor becomes aware during the term of this Contract that the Contractor is not in compliance with this certification, it shall follow the notice procedures in A.R.S. § 35- 393.

10.4 **Non-Appropriation** The City is a government agency that relies upon the appropriation of funds by its governing body to satisfy its obligations. If the City determines that it does not have funds to meet its obligations under the Contract, the City shall have the right to terminate the Contract without penalty on the last day of the fiscal period for which funds were legally available for the Project.

10.5 **Limited Liability** Under no circumstances shall the City have any liability for any costs, expenses, overhead, or profits in relation to any work not actually performed or for any future or anticipated profits, recovery, damages, expenses, or losses.

SECTION 11 - INSURANCE AND BONDS

11.1 Insurance Requirements

11.1.1 The Contractor shall obtain, maintain, and provide verification of insurance coverage set forth in the City's Insurance Requirements set forth on Attachment 1 of the Contract.

11.1.2 In the Contract Documents, the City may designate additional insured(s) along with the City (and their respective employees, members, representatives, agents, and affiliates) on all required insurance policies and all coverage applicable to the City under this Section 11.1 and the Insurance Requirements shall apply to such designated additional insured(s) as well.

11.1.3 Failure to maintain the insurance policies as required by this Contract or to provide evidence of renewal is a material breach of this Contract.

11.1.4 Subcontractors. The Contractor's certificate(s) of insurance and policy endorsements shall include all Subcontractors as additional insureds under its policies, or the Contractor shall furnish to the City separate certificates and endorsements for each Subcontractor. All coverages for Subcontractors shall be subject to the minimum requirements set forth in the Contract Documents, including the City Insurance Requirements.

11.2 Bonds and Other Performance Security

11.2.1 Prior to the execution of the Contract, the Contractor shall provide a Performance Bond and a Payment Bond, each in an amount equal to the full amount of the Contract Price.

11.2.2 Each such bond shall 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. A copy of the Certificate of Authority shall accompany the bonds.

11.2.3 The bonds shall be made payable and be acceptable to the City. The bond forms for the performance and payment bonds shall be in the forms required under A.R.S. § 34-221, et seq.

11.2.4 All bonds submitted for this Project shall be provided by a company that has been rated AM Best rating of B++6 or better for the prior four (4) quarters by the latest edition of the *Results Best's Key Rating Guide (Property/Casualty)*" published by the A.M. Best Company.

11.2.5 Personal or individual bonds are not acceptable.

SECTION 12 - INDEMNIFICATION

12.1 To the fullest extent permitted by law, the Contractor, its successors, and assigns shall defend, indemnify, and hold harmless the City and its agents, representatives, officers, elected officials, and employees from all demands, proceedings, suits, actions, claims, damages, or losses relating to, arising out of, resulting from or alleged to have resulted from the performance of the Work or failure to comply with Contractor's obligations under the Contract Documents or any laws, regulations, or legal requirements. The Contractors' duty to defend, indemnify, and hold harmless the City and its agents, representatives, officers, elected officials, and employees shall arise in connection with all demands, proceedings, suits, actions, claims, workers' compensation claims, unemployment claims, damages, losses or expenses (including but not limited to attorney's fees, expert fees, court costs, and the cost of appellate proceedings) that are attributable to personal or bodily injury, sickness, disease, death or injury to, impairment or destruction of property including loss of use resulting therefrom, caused by any act or omission of Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable.

12.2 The Contractor shall also defend, indemnify, and hold harmless the City, any jurisdiction or agency issuing permits for any work involved in the Project and their consultants and each of their officers, officials, employees, representatives, directors, and agents from and against all losses, expenses, damages (including damages to the Work itself), attorney's fees and other costs including costs of defense, which any of them may incur with respect to the failure, neglect, or refusal of Contractor to faithfully perform the Work and all of the Work and all of Contractor's obligations under the Contract. Such costs, expenses, and damages shall include all costs, including attorney's fees, incurred by the indemnified parties in any lawsuit to which they are a party.

12.3 The indemnified party shall have the right to approve the legal counsel selected by the Contractor or the insurer of the liability, which approval shall not be unreasonably withheld.

12.4 The defense, indemnification, hold harmless provisions, and City's Liability Insurance set forth herein shall survive any termination of the Contract.

SECTION 13 - DISPUTE RESOLUTION

13.1 **Informal Dispute Resolution** The Parties to the Contract agree that time is of the essence in relation to the performance of the Contract and completion of the Project. Therefore, any and all disputes in relation to the Contract will initially be referred to the City Project Manager and Contractor Project Manager, 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.

13.2 Dispute Resolution Representative (DRR) Process

13.2.1 The Parties under the Contract agree that all claims and disputes in relation to the Project that are not resolved in the ordinary course of the Project ("Claim or Claims") shall, 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").

13.2.2 The DRR Process shall be initiated through the service of a DRR Notice as set forth below:

(i) For claims by the Contractor, the DRR Process shall be initiated by the party asserting the claim serving written notice on the City setting forth in detail:

(a) the basis for the claim;

(b) the effect of the Claim upon the construction of, and/or Project Schedule for, the Project;

(c) the specific relief requested, the amount thereof, and how such was calculated;

(d) the parties involved in the Claim and how they are involved;

(e) the specific contract provisions in the Contract Documents (including, if applicable, drawings and specifications) which apply; and

(f) efforts made to date to resolve the Claim.

(ii) 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 Contract Documents that apply, and the relief requested.

(iii) The DRR Notice shall be hand-delivered and e-mailed to the other parties' designated Dispute Resolution Representatives.

13.2.3 The other parties shall 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 shall be hand-delivered and e-mailed to the other parties' Dispute Resolution Representatives.

13.2.4 The designated Dispute Resolution Representatives for the parties to the claim shall 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.

13.2.5 At any time after the first meeting required above, either party may terminate the DRR Process by written notice to the other party.

13.2.6 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.

13.2.7 Unless otherwise designated in a written notice to the other parties, the Project Manager, the representatives of the Contractor, and of the Design Professional shall act as the parties' designated Dispute Resolution Representatives.

13.2.8 If a resolution of the Claim is reached, that resolution shall be set forth in writing. The resolution shall be signed by the Parties' designated Dispute Resolution Representatives. If the resolution involves a change in any Contract Documents, the Contract Price, the Project Schedule, or any other change requiring a written Change Order or Amendment, the parties shall execute an appropriate written Change Order or Amendment pursuant to the terms of the Contract Documents.

13.3 Mediation

13.3.1 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 13.2.4 or after the DRR is terminated pursuant to 13.2.5 above, whichever is earlier, shall be submitted to mediation as a condition precedent to litigation by either party.

13.3.2 The mediation shall 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 Yuma County Superior Court to appoint a mediator. The mediation shall occur within forty (40) calendar Days of the written demand for mediation unless the parties agree, in writing, to a longer period of time.

13.3.3 The qualifications for the mediator shall be that the mediator be:

(i) an experienced mediator, arbitrator, or litigator of construction disputes; and

(ii) having engaged a significant portion of their time involving and/or resolving construction disputes for at least the past five (5) years.

13.3.4 Each party shall provide to the other party and the mediator all of the information and documentation required under 13.2.2 and 13.2.3 above, together with any additional information and documentation that the party believes relevant. In addition, the parties shall 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.

13.3.5 The parties shall share the mediator's fee and any filing fees equally. The mediation shall be held in San Luis, Arizona unless another location is mutually agreed upon. Agreements reached in mediation shall be specifically enforceable in any court having jurisdiction over the dispute.

13.4 Arbitration

13.4.1 If the mediation is unsuccessful, the parties shall submit the dispute and/or claim to be resolved through binding arbitration conducted according to the then-current Construction Industry Arbitration Rules of the American Arbitration Association ("AAA") but not administrated or conducted by the AAA. The arbitration shall be held in Yuma County, Arizona, utilizing a single arbitrator selected by the parties unless the parties agree, in writing, to an alternative arbitration procedure.

13.4.2 If: (a) the parties cannot agree on a single arbitrator within two (2) weeks of the demand for arbitration; or (b) the parties at any time prior to the arbitrator being appointed or before the arbitrator has accepted the appointment, cannot agree upon any significant aspect of the arbitration, not already addressed herein, either party may submit the Claim directly to the AAA to select the arbitrator, and thereafter the arbitration shall be administered by the AAA.

13.4.3 The arbitrator shall be an attorney with at least fifteen (15) years of experience in construction-related practice and whose practice, for at least the last five (5) years, consists of at least 50% construction law.

13.4.4 At the request of either party, the arbitration may include as parties, through joinder, consolidation, or otherwise, additional persons or entities involved in the Project, involving claims and/or disputes with common issues and/or facts. The arbitrator shall promptly rule upon any request for joinder or consolidation.

13.4.5 In relation to claims in which the amount in controversy is less than $250,000, no discovery other than the exchange of documents, designation of witnesses, and detailed disclosure of claims and defenses (including specifically a detailed basis for calculating all claims) and no more than three (3) depositions and one (1) expert per issue per side, shall be allowed, subject to disclosure of such other information as approved by the arbitrator. Otherwise, discovery shall be allowed and/or limited as decided by the arbitrator.

13.4.6 The prevailing party in any arbitration or court proceeding under this Contract shall be entitled to an award of its attorneys' fees, costs, and expenses (including expert witness fees) incurred.

13.4.7 A demand for arbitration shall be made within the time limits specified in the Contract Documents as applicable, and in other cases within a reasonable time after the Claim has arisen, and in no event shall it be made after the date when the applicable statute of limitations would bar institution of legal or equitable proceedings based on such Claim.

13.4.8 The Parties agree to participate as a party, by joinder and/or consolidation, in any arbitration, litigation, or other dispute resolution involving as an issue, claim, or defense, any action, inaction, or service provided under this Contract or in relation to the Project or the Work, or any defect or deficiency in the Work.

13.4.9 The party filing a notice of demand for arbitration, or a counterclaim, must assert in the demand or counterclaim all Claims then known to that party on which arbitration is permitted to be demanded.

13.4.10 Any award by the arbitrator shall not include any consequential or punitive damages.

13.4.11 The award entered by the arbitrator shall be a reasoned award.

13.4.12 The award entered by the arbitrator shall be final, and judgment may be entered upon the award in the Arizona Superior Court.

SECTION 14 - MISCELLANEOUS PROVISIONS

14.1 **Assignment** Neither the Contractor nor the City shall, without the written consent of the other, assign, transfer, or sublet any portion of this Contract or part of the Work or the obligations required by the Contract

Documents. Any such assignment will be void, will transfer no rights to the purported assignee, and would be a material breach of the Contract.

14.2 **Governing Law and Venue.** In the performance of the Contract, Contractor shall abide by and conform to any and all laws of the United States, State of Arizona, Yuma County, and the City, including but not limited to federal and state executive orders providing for equal opportunities, the Federal Occupational Safety and Health Act and any other federal, state, county, or local laws applicable to the Contract. This Contract shall be governed by and construed in accordance with the substantive and procedural laws of the State of Arizona, including choice of law and conflict of laws and principles. Exclusive jurisdiction and venue for any action brought to enforce or construe any provision of this Contract shall be proper in the Superior Court of Yuma County, Arizona. Both Parties consent to jurisdiction and venue in such court for such purposes. The Party prevailing in any such action or other proceeding to resolve a dispute shall be paid all reasonable costs, reasonable expert services fees, and reasonable attorney's fees by the other Party. In the event any judgment is secured by said prevailing Party, all such costs, expert fees, and attorney's fees shall be included in the judgment, such fees to be set by the court and not by jury.

14.3 **San Luis Business License** The Contractor shall obtain a San Luis Business License before commencing Work.

14.4 **Survival** All warranties, representations, and indemnifications by Contractor shall survive the completion or termination of this Contract.

14.5 **No Waiver** The failure of either Party to enforce any of the provisions of the Contract Documents or to require the performance of the other Party of any of the provisions under this Contract shall not be construed to be a waiver of such provisions, nor shall it affect the validity of the Contract Documents or any part them, or the right of either Party to thereafter enforce each and every provision. Unless otherwise specifically agreed to in writing by both Parties, any consent to delay in the Contractor's performance of its obligation is applicable only to the particular transaction to which it relates and is not applicable to any other obligation or transaction.

14.6 Project Communications

14.6.1 All communications concerning the performance of the Work or the Project shall be provided to the designated Project Manager and Contractor's Representative set forth in Article 1 of the Contract.

14.6.2 Project communications may be exchanged by e-mail upon the written agreement of the Project Manager and Contractor Representative. However, e-mail communications are not binding upon the City. E-mail communications cannot change the terms of the Contract or the scope of work or effectuate any change that requires a written change order. The use of e-mails is for information only, and e-mails will have no legal or binding effect.

14.7 **Independent Contractor** The parties intend that this Contract will create an independent contractor relationship and not an employer-employee relationship. The City is interested only in the results to be achieved, and the conduct and control of the performance of the services contemplated under this Contract will be solely with the Contractor. Contractor's employees, agents, and Subcontractors shall not be considered to be employees or agents of the City for any purpose. They shall not be entitled to any of the benefits the City provides for its employees. The Contractor shall furnish at its own expense all materials and equipment necessary to carry out the terms of this Contract.

14.8 **No Partnership** Nothing in this Contract constitutes a partnership, joint venture or similar arrangement between the Parties. Neither Party is the principal or agent of the other.

14.9 **No Third-Party Beneficiaries** There are no third-party beneficiaries to this Contract and no person or entity, not a Party, shall have any right or cause of action under this Contract.

14.10 ***Force Majeure*** If the Contractor or the City or both are prevented or materially restricted from performing any of their obligations under this Contract by an event of *force majeure*, then the obligations of each Party shall be suspended or reduced to the extent made necessary by the event. As used in this section, "*force majeure*" means any act or cause not reasonably within the control of the Party whose ability to perform is impaired and which that Party could not have prevented by the exercise of reasonable diligence. *Force majeure* events include but are not limited to natural disasters, fire, flood, explosions, strikes (or labor disputes) over which the affected Party has no control, sabotage, riots, civil commotion, acts of civil or military authority, wars, public health emergencies, or material changes in applicable business laws (including but not limited to through statutes, regulations, executive orders, or. emergency declarations and proclamations).

14.11 **Notices** The notices under this Contract shall be validly given and fully received when in compliance with all of the following:

(i) In writing,

(ii) Delivered or refused delivery,

(iii) By personal delivery, or by major commercial delivery courier service which requires a signature of the recipient, or by registered or certified United States Postal Service mail, return receipt requested with the signature of the recipient, postage prepaid to the addresses in the first paragraph of this Contract.

14.11.2 Either Party may designate in writing and deliver notice of a different address in the same way as above. Any such change of address notice shall be delivered at least ten (10) Days before the date on which the change is to become effective.

14.11.3 Notices for delivery to the City shall be to the attention of the Public Works Director, copies to the City Manager, City Attorney, and City Clerk.

14.12 **Severability** If any terms, parts, or provisions of this Contract are for any reason invalid or unenforceable, the remaining terms, parts, or provisions are nevertheless valid and enforceable.

14.13 **Entire Agreement** This Contract (including the incorporated documents) contains the entire agreement between the Parties, and no oral or written statement, promise, or inducement made by either Party or its agents not contained or specifically referred to in this Contract is valid or binding. All modifications to this Contract must be in writing, signed, and endorsed by the Parties.

14.14 **Headings** The headings of this Contract are solely for the convenience of the Parties and shall not be used to explain, modify, simplify, or aid in the interpretation of the provisions of this Contract.

14.15 **Further Acts** Each of the Parties shall execute and deliver all such documents and perform all such acts as reasonably necessary, from time to time, to carry out the matters contemplated by this Contract.

Katie Hobbs, Governor
Chuck Podolak, Director

Contract Packet

Governmental

Includes:

1. Contract Packet
2. AIS Sample Certification Letters
3. AIS and De Minimis Worksheet
4. Project Wage Rate Worksheet
5. Request for Authorization of Additional Classification and Rate (Wage Determination Request) form (SF1444) and instructions
6. Davis-Bacon poster (WH-1321) – English and Spanish versions
7. Payroll certification form (WH-347)
8. Employee Interview form and instructions

A digital version of this packet is available for download at: https://www.azwifa.gov/contract-packet/

Water Infrastructure Finance Authority of Arizona
Clean Water Revolving Fund
Drinking Water Revolving Fund

CONTRACT PACKET for Governmental Borrowers

This packet lists required contract conditions that apply to all Clean Water and Drinking Water Revolving Fund projects and contains forms that must be used in the procurement process. Please review this packet prior to bidding.

PLEASE NOTE

- **This packet, in its entirety, must be physically included in all bidding, solicitation and contract documents.**
- Use of American Iron and Steel (AIS) applies to this project.:
    - AIS includes the following products made primarily of iron or steel: lined or unlined pipes and fittings, manhole covers and other municipal castings, hydrants, tanks, flanges, pipe clamps and restraints, valves, structural steel, reinforced precast concrete, and construction materials.
- Federal Davis-Bacon prevailing wages apply to this project.
    - Payment of the wages, fringe benefits and overtime rates is required.
    - The appropriate Federal (Davis-Bacon) Prevailing Wage Decision must be physically incorporated into the bidding and contract documents.
    - The construction category of Heavy (excluding dam construction) should typically be applied to all projects funded by WIFA. If you believe that a different category of wages, such as Building, should be applied to your project or portions of your project, please contact WIFA in advance.
    - Weekly certified payroll submittal is required under the Federal Davis-Bacon laws.
- Compliance with the Civil Rights Act and Equal Employment Opportunity is required.
- Promotion of Small, Minority and Women-owned Businesses and participation in EPA's Disadvantaged Business Enterprise (DBE) Program is required.
- Prohibition on Certain Telecommunication and Video Surveillance Services or Equipment.

Water Infrastructure Finance Authority of Arizona
Clean Water Revolving Fund
Drinking Water Revolving Fund

Required Contract Conditions

This project is being financed in whole or in part by the Water Infrastructure Finance Authority of Arizona through the Clean Water or Drinking Water Revolving Fund. The loan recipient is required to comply with the following federal and state laws, rules and regulations and must ensure that their contractor(s) also comply(ies) with these regulations, laws and rules.

1. (i) Title VI of the Civil Rights Act of 1964 (Pub. L. 88-352, 42 U.S.C. Sec. 2000d), (ii) the Rehabilitation Act of 1973 (Pub. L. 93-1123, 87 Stat. 355, 29 U.S.C. Sec. 794), (iii) the Age Discrimination Act of 1975 (Pub. L. 94-135 Sec. 303, 89 Stat. 713, 728, 42 U.S.C. Sec. 6102), (iv) Section 13 of the Federal Water Pollution Control Act (Pub. L. 92-500, 33 U.S.C. Sec. 1251), and subsequent regulations, ensures access to facilities or programs regardless of race, color, national origin, sex, age or handicap.

2. Equal Employment Opportunity (Executive Order 11246, as amended by Executive Orders 11375 and 12086 and subsequent regulations). Prohibits employment discrimination on the basis of race, color, religion, sex or national origin. Inclusion of the seven clauses in Section 202 of Executive Order 11246 as amended by Executive Orders 11375 and 12086 are required in all project related contracts and subcontracts over $10,000.

3. (i) Promoting the use of Small, Minority, and Women-owned Businesses (Executive Orders 11625, 12138 and 12432), (ii) Small Businesses Reauthorization & Amendment Act of 1988 (Section 129 of Pub. L. 100-590), (iii) Department of Veterans Affairs and Housing and Urban Development, and Independent Agencies Appropriations Act, 1993 (Pub. L. 102-389, 42 U.S.C. Sec. 437d), and (iv) Title X of the Clean Air Acts Amendments of 1990 (Pub. L. 101-549, 42 U.S.C. Sec. 7601 note) ("EPA's 10% statute"). Encourages recipients to award construction, supply and professional service contracts to minority and women's business enterprises (MBE/WBE) and small businesses and requires recipients to utilize affirmative steps in procurement.

4. Participation by Disadvantaged Business Enterprises in Procurement under Environmental Protection Agency (EPA) Financial Assistance Agreements (40 C.F.R. Part 33).

5. Debarment and Suspension (Executive Order 12549). Prohibits entering into contracts or sub-contracts with individuals or businesses who are debarred or suspended. Borrowers are required to check the status of all contractors (construction and professional services) and must require contractors to check the status of subcontractors for contracts expected to be equal to or over $25,000 via this Internet address: https://www.sam.gov/SAM/.

6. E-Verify (A.R.S. § 41-4401). A governmental entity shall not award a contract to any contractor or subcontractor that fails to comply with A.R.S. § 23-214(A). Every government entity shall (i) ensure that every government entity contractor and subcontractor complies with the federal immigration laws and regulations that relate to their employees and A.R.S. § 23-214(A); (ii) require that every government entity contract include the required provisions listed under A.R.S. § 41-4401(A); and (iii) establish procedures to conduct random verification of the employment records of government entity contractors and subcontractors.

Water Infrastructure Finance Authority of Arizona
Clean Water Revolving Fund
Drinking Water Revolving Fund

Use of American Iron and Steel

Public Law 113-76, enacted January 17, 2014

SEC. 436. (a)(1) None of the funds made available by a State water pollution control revolving fund as authorized by title VI of the Federal Water Pollution Control Act (33 U.S.C. 1381 et seq.) or made available by a drinking water treatment revolving loan fund as authorized by section 1452 of the Safe Drinking Water Act (42 U.S.C. 300j–12) shall be used for a project for the construction, alteration, maintenance, or repair of a public water system or treatment works unless all of the iron and steel products used in the project are produced in the United States.

(2) In this section, the term ''iron and steel products'' means the following products made primarily of iron or steel: lined or unlined pipes and fittings, manhole covers and other municipal castings, hydrants, tanks, flanges, pipe clamps and restraints, valves, structural steel, reinforced precast concrete, and construction materials.

(b) Subsection (a) shall not apply in any case or category of cases in which the Administrator of the Environmental Protection Agency (in this section referred to as the ''Administrator'') finds that—

(1) applying subsection (a) would be inconsistent with the public interest;

(2) iron and steel products are not produced in the United States in sufficient and reasonably available quantities and of a satisfactory quality; or

(3) inclusion of iron and steel products produced in the United States will increase the cost of the overall project by more than 25 percent.

(c) If the Administrator receives a request for a waiver under this section, the Administrator shall make available to the public on an informal basis a copy of the request and information available to the Administrator concerning the request, and shall allow for informal public input on the request for at least 15 days prior to making a finding based on the request. The Administrator shall make the request and accompanying information available by electronic means, including on the official public Internet Web site of the Environmental Protection Agency.

(d) This section shall be applied in a manner consistent with United States obligations under international agreements.

(e) The Administrator may retain up to 0.25 percent of the funds appropriated in this Act for the Clean and Drinking Water State Revolving Funds (CWSRF and DWSRF) for carrying out the provisions described in subsection (a)(1) for management and oversight of the requirements of this section.

(f) This section does not apply with respect to a project if a State agency approves the engineering plans and specifications for the project, in that agency's capacity to approve such plans and specifications prior to a project requesting bids, prior to the date of the enactment of this Act.

Highlights from EPA Guidance on Use of American Iron and Steel

Complete document available at http://water.epa.gov/grants_funding/aisrequirement.cfm

What is considered American Iron and Steel?

What is an iron or steel product?

For purposes of the CWSRF and DWSRF projects that must comply with the AIS requirement, an iron or steel product is one of the following made primarily of iron or steel that is permanently incorporated into the public water system or treatment works: lined or unlined pipes and fittings, manhole covers and other municipal castings, hydrants, tanks, flanges, pipe clamps and restraints, valves, structural steel, reinforced precast concrete, and construction materials.

What is a 'construction material' for purposes of the AIS requirement?

Construction materials are those articles, materials, or supplies made primarily of iron and steel, that are permanently incorporated into the project, not including mechanical and/or electrical components, equipment and systems. Some of these products may overlap with what is also considered "structural steel". This includes, but is not limited to, the following products: wire rod, bar, angles, concrete reinforcing bar, wire, wire cloth, wire rope and cables, tubing, framing, joists, trusses, fasteners (i.e., nuts and bolts), welding rods, decking, grating, railings, stairs, access ramps, fire escapes, ladders, wall panels, dome structures, roofing, ductwork, surface drains, cable hanging systems, manhole steps, fencing and fence tubing, guardrails, doors, and stationary screens.

What is NOT considered American Iron and Steel?

What is NOT considered a 'construction material' for purposes of the AIS requirement?

Mechanical and electrical components, equipment and systems are NOT considered construction materials. Mechanical equipment is typically that which has motorized parts and/or is powered by a motor. Electrical equipment is typically any machine powered by electricity and includes components that are part of the electrical distribution system. The following examples (including their appurtenances necessary for their intended use and operation) are NOT considered construction materials: pumps, motors, gear reducers, drives (including variable frequency drives (VFDs)), electric/pneumatic/manual accessories used to operate valves (such as electric valve actuators), mixers, gates, motorized screens (such as traveling screens), blowers/aeration equipment, compressors, meters, sensors, controls and switches, supervisory control and data acquisition (SCADA), membrane bioreactor systems, membrane filtration systems, filters, clarifiers and clarifier mechanisms, rakes, grinders, disinfection systems, presses (including belt presses), conveyors, cranes, HVAC (excluding ductwork), water heaters, heat exchangers, generators, cabinetry and housings (such as electrical boxes/enclosures), lighting fixtures, electrical conduit, emergency life systems, metal office furniture, shelving, laboratory equipment, analytical instrumentation, and dewatering equipment.

Water Infrastructure Finance Authority of Arizona
Clean Water Revolving Fund
Drinking Water Revolving Fund

Use of American Iron and Steel - De Minimis Waiver

Every water infrastructure project involves the use of thousands of miscellaneous, generally low-cost components that are essential for, but incidental to, the construction and are incorporated into the physical structure of the project. For many of these incidental components, the country of manufacture and the availability of alternatives is not always readily or reasonably identifiable prior to procurement in the normal course of business; for other incidental components, the county of manufacture may be known but the miscellaneous character in conjunction with the low cost, individually and (in total) as typically procured in bulk, mark them as properly incidental.

Examples of incidental components could include small washers, screws, fasteners (i.e., nuts and bolts), miscellaneous wire, corner bead, ancillary tube, etc.

Example of items that are clearly not incidental include significant process fittings (i.e., tees, elbows, flanges, and brackets), distribution system fittings and valves, force main valves, pipes for sewer collection and/or water distribution, treatment and storage tanks, large structural support structures, etc.

EPA has established a public interest waiver for de minimis incidental components. This action permits the use of products when they occur in de minimis incidental components of such projects.

- Funds used for such de minimis incidental components cumulatively may comprise no more than a total of 5% of the total cost of the materials used in and incorporated into a project.
- The cost of an individual item may not exceed 1% of the total cost of the materials used in and incorporated into a project.

Assistance recipients who wish to use this waiver should in consultation with their contractors determine the items to be covered by this waiver and must retain relevant documentation (i.e., invoices) as to those items in their project files.

Water Infrastructure Finance Authority of Arizona
Clean Water Revolving Fund
Drinking Water Revolving Fund

Davis-Bacon Contract Conditions (Federal Prevailing Wages)

PLEASE NOTE: Federal Davis-Bacon prevailing wages apply to this project. Payment of the wages, fringe benefits and overtime rates is required.

The "subrecipient" referred to throughout the Davis-Bacon contract conditions is the WIFA Borrower.

"WIFA" is the Water Infrastructure Finance Authority of Arizona, State Capitalization Grant recipient, recipient, or the Authority.

Wage Rate Requirements
(Also referred to as Attachment 6)

Preamble

With respect to the Clean Water and Drinking Water State Revolving Funds, EPA provides capitalization grants to each State which in turn provides subgrants or loans to eligible entities within the State. Although EPA and the State remain responsible for ensuring subrecipients' compliance with the wage rate requirements set forth herein, those subrecipients shall have the primary responsibility to maintain payroll records as described in Section 3(3)(ii)(A) below and for compliance as described in Section 5.

Requirements for Subrecipients That Are Governmental Entities:
The following terms and conditions specify how recipients will assist EPA in meeting its Davis-Bacon (DB) responsibilities with respect to State recipients and subrecipients that are governmental entities. If a subrecipient has questions regarding when DB applies, obtaining the correct DB wage determinations, DB provisions, or compliance monitoring, it may contact the State recipient. If a State recipient needs guidance, the recipient will contact EPA. The recipient or subrecipient may also obtain additional guidance from DOL's web site at https://www.dol.gov/agencies/whd/government-contracts/construction.

1. Applicability of the Davis-Bacon prevailing wage requirements.
Davis-Bacon prevailing wage requirements apply to the construction, alteration, and repair of treatment works carried out in whole or in part with assistance made available by a Clean Water Revolving Fund and to any construction project carried out in whole or in part by assistance made available by a Drinking Water Revolving Fund. If a subrecipient encounters a unique situation at a site that presents uncertainties regarding DB applicability, the subrecipient must discuss the situation with the State recipient before authorizing work on that site.

2. Obtaining Wage Determinations.

(a) Subrecipients shall obtain the wage determination for the locality in which a covered activity subject to DB will take place prior to issuing requests for bids, proposals, quotes or other methods for soliciting contracts (solicitation) for activities subject to DB. These wage determinations shall be incorporated into solicitations and any subsequent contracts. Prime contracts must contain a provision requiring that subcontractors follow the wage determination incorporated into the prime contract.

(i) While the solicitation remains open, the subrecipient shall monitor https://beta.sam.gov/ weekly to ensure that the wage determination contained in the solicitation remains current. The subrecipient shall amend the solicitation if DOL issues a modification more than 10 days prior to the closing date (i.e. bid opening) for the solicitation. If DOL modifies or supersedes the applicable wage determination 10 days or less prior to the closing date, the subrecipient may request a finding from the State recipient that there is not a reasonable time to notify interested contractors of the modification of the wage determination. The State recipient will provide a report of its findings to the subrecipient.

(ii) If the subrecipient does not award the contract within 90 days of the closure of the solicitation, any modifications or supersedes DOL makes to the wage

determination contained in the solicitation shall be effective unless the State recipient, at the request of the subrecipient, obtains an extension of the 90 day period from DOL pursuant to 29 CFR 1.6(c)(3)(iv). The subrecipient shall monitor https://beta.sam.gov/ on a weekly basis if it does not award the contract within 90 days of closure of the solicitation to ensure that wage determinations contained in the solicitation remain current.

(b) If the subrecipient carries out activity subject to DB by issuing a task order, work assignment or similar instrument to an existing contractor (ordering instrument) rather than by publishing a solicitation, the subrecipient shall insert the appropriate DOL wage determination from https://beta.sam.gov/ into the ordering instrument. Typically, the appropriate wage determination would be the one in effect on the date the task order, work assignment or similar instrument is awarded.

(c) Subrecipients shall review all subcontracts subject to DB entered into by prime contractors to verify that the prime contractor has required its subcontractors to include the applicable wage determinations.

(d) As provided in 29 CFR 1.6(f), DOL may issue a revised wage determination applicable to a subrecipient's contract after the award of a contract or the issuance of an ordering instrument if DOL determines that the subrecipient has failed to incorporate a wage determination or has used a wage determination that clearly does not apply to the contract or ordering instrument. If this occurs, the subrecipient shall either terminate the contract or ordering instrument and issue a revised solicitation or ordering instrument or incorporate DOL's wage determination retroactive to the beginning of the contract or ordering instrument by change order. The subrecipient's contractor must be compensated for any increases in wages resulting from the use of DOL's revised wage determination.

3. Contract and Subcontract provisions.

The recipient shall insure that the subrecipient(s) shall insert in full in any contract in excess of $2,000 which is entered into for the actual construction, alteration and/or repair, including painting and decorating, of a treatment work under the CWSRF or a construction project under the DWSRF financed in whole or in part from Federal funds or in accordance with guarantees of a Federal agency or financed from funds obtained by pledge of any contract of a Federal agency to make a loan, grant or annual contribution (except where a different meaning is expressly indicated), and which is subject to the labor standards provisions of any of the acts listed in 29 CFR § 5.1, the following clauses:

(1) Minimum wages.

(i) All laborers and mechanics employed or working upon the site of the work will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph (a)(1)(iv) of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR § 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: provided that the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph (a)(1)(ii) of this section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

Subrecipients may obtain wage determinations from the U.S. Department of Labor's web site, https://beta.sam.gov/.

(ii)(A) The subrecipient(s), on behalf of EPA, shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The State award official shall approve a request for an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(1) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(2) The classification is utilized in the area by the construction industry; and

(3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(B) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the subrecipient(s) agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), documentation of the action taken and the request, including the local wage determination shall be sent by the subrecipient(s) to the State award official. The State award official will transmit the request, to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210 and to the EPA DB Regional Coordinator concurrently. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification request within 30 days of receipt and so advise the State award official or will notify the State award official within the 30-day period that additional time is necessary.

(C) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the subrecipient(s) do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the award official shall refer the request and the local wage determination, including the views of

all interested parties and the recommendation of the State award official, to the Administrator for determination. The request shall be sent to the EPA DB Regional Coordinator concurrently. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt of the request and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(D) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs (a)(1)(ii)(B) or (C) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(iii) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(iv) If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, provided that the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

(2) Withholding. The subrecipient(s), shall upon written request of the EPA Award Official or an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor under this contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the recipient may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

(3) Payrolls and basic records.

(i) Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the

contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

(ii)(A) The contractor shall submit weekly, for each week in which any contract work is performed, a copy of all payrolls to the subrecipient, that is, the entity that receives the sub-grant or loan from the State capitalization grant recipient. Such documentation shall be available on request of the State recipient or EPA. As to each payroll copy received, the subrecipient shall provide written confirmation in a form satisfactory to the State indicating whether or not the project is in compliance with the requirements of 29 CFR 5.5(a)(1) based on the most recent payroll copies for the specified week. The payrolls shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on the weekly payrolls. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at www.dol.gov/whd/forms/wh347instr.htm or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the subrecipient(s) for transmission to the State or EPA if requested by EPA, the State, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the subrecipient(s).

(B) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(1) That the payroll for the payroll period contains the information required to be provided under § 5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under § 5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;

(2) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;

(3) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(C) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph (a)(3)(ii)(B) of this section.

(D) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

(iii) The contractor or subcontractor shall make the records required under paragraph (a)(3)(i) of this section available for inspection, copying, or transcription by authorized representatives of the State, EPA or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the Federal agency or State may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

(4) Apprentices and trainees -

(i) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the Apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency

recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(ii) Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(iii) Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

(5) Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

(6) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses contained in 29 CFR 5.5(a)(1) through (10) and such other clauses as the EPA determines may by appropriate, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

(7) Contract termination; debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

(8) Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

(9) Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and subrecipient(s), the State recipient, EPA, the U.S. Department of Labor, or the employees or their representatives.

(10) Certification of eligibility.

(i) By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(ii) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(iii) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

4. Contract Provision for Contracts in Excess of $100,000.

(a) Contract Work Hours and Safety Standards Act. The subrecipient shall insert the following clauses set forth in paragraphs (a)(1), (2), (3), and (4) of this section in full in any contract in an amount in excess of $100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by Item 3 above or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

(1) Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of 40 hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of 40 hours in such workweek.

(2) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (a)(1) of this section the contractor and any subcontractor responsible therefore shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (a)(1) of this section, in the sum of $10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of 40 hours without payment of the overtime wages required by the clause set forth in paragraph (a)(1) of this section.

(3) Withholding for unpaid wages and liquidated damages. The subrecipient**,** upon written request of the EPA Award Official or an authorized representative of the Department of Labor, shall withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (b)(2) of this section.

(4) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (a)(1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (a)(1) through (4) of this section.

(b) In addition to the clauses contained in Item 3 above, in any contract subject only to the Contract Work Hours and Safety Standards Act and not to any of the other statutes cited in 29 CFR 5.1, the subrecipient shall insert a clause requiring that the contractor or subcontractor shall maintain payrolls and basic payroll records during the course of the work and shall preserve them for a period of three years from the completion of the contract for all laborers and mechanics, including guards and watchmen, working on the contract. Such records shall contain the name and address of each such employee, social security number, correct classifications, hourly rates of wages paid, daily and weekly number of hours worked, deductions made, and actual wages paid. Further, the subrecipient shall insert in any such contract a clause providing that the records to be maintained under this paragraph shall be made available by the contractor or subcontractor for inspection, copying, or transcription by authorized representatives of the recipient and the Department of Labor, and the contractor or subcontractor will permit such representatives to interview employees during working hours on the job.

5. Compliance Verification

(a) The subrecipient shall periodically interview a sufficient number of employees entitled to DB prevailing wages (covered employees) to verify that contractors or subcontractors are paying the appropriate wage rates. As provided in 29 CFR 5.6(a)(6), all interviews must be conducted in confidence. The subrecipient must use WIFA's interview form, Department of Labor's Standard Form 1445, or equivalent documentation to memorialize the interviews. WIFA's interview form and instructions are included with this packet.

(b) The subrecipient shall establish and follow an interview schedule based on its assessment of the risks of noncompliance with DB posed by contractors or subcontractors and the duration of the contract or subcontract. Subrecipients must conduct more frequent interviews if the initial interviews or other information indicated that there is a risk that the contractor or subcontractor is not complying with DB. Subrecipients shall immediately conduct interviews in response to an alleged violation of the prevailing wage requirements. All interviews shall be conducted in confidence.

(c) The subrecipient shall periodically conduct spot checks of a representative sample of weekly payroll data to verify that contractors or subcontractors are paying the appropriate

wage rates. The subrecipient shall establish and follow a spot check schedule based on its assessment of the risks of noncompliance with DB posed by contractors or subcontractors and the duration of the contract or subcontract. At a minimum, if practicable, the subrecipient should spot check payroll data within two weeks of each contractor or subcontractor's submission of its initial payroll data and two weeks prior to the completion date the contract or subcontract. Subrecipients must conduct more frequent spot checks if the initial spot check or other information indicates that there is a risk that the contractor or subcontractor is not complying with DB. In addition, during the examinations the subrecipient shall verify evidence of fringe benefit plans and payments thereunder by contractors and subcontractors who claim credit for fringe benefit contributions.

(d) The subrecipient shall periodically review contractors and subcontractors use of apprentices and trainees to verify registration and certification with respect to apprenticeship and training programs approved by either the U.S Department of Labor or a state, as appropriate, and that contractors and subcontractors are not using disproportionate numbers of laborers, trainees and apprentices. These reviews shall be conducted in accordance with the schedules for spot checks and interviews described in Item 5(b) and (c) above.

(e) Subrecipients must immediately report potential violations of the DB prevailing wage requirements to the EPA DB contact listed below and to the appropriate DOL Wage and Hour District Office listed at www.dol.gov/whd.

Joe Ochab, EPA Region 9, 75 Hawthorne St. (P-22), San Francisco, CA 94105

Clean Water Revolving Fund
Drinking Water Revolving Fund

Equal Employment

Inclusion of these seven clauses (excerpt from Executive Order No. 11246, Section 202 as amended by Executive Order 11375 and 12086) is required in all CWRF and DWRF project related contracts and subcontracts over $10,000:

During the performance of this contract, the contractor agrees as follows:

(1) The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, or national origin. Such action shall include, but not be limited to the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the contracting officer setting forth the provisions of this nondiscrimination clause.

(2) The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.

(3) The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice, to be provided by the agency contracting officer, advising the labor union or worker's representative of the contractor's commitments under Section 202 of Executive Order No. 11246 of September 24, 1965, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

(4) The contractor will comply with all provisions of Executive Order No. 11246 of Sept. 24, 1965, and all of the rules, regulations, and relevant orders of the Secretary of Labor.

(5) The contractor will furnish all information and reports required by Executive Order No. 11246 of Sept. 24, 1965, and by the rules, regulations and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the contracting agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

(6) In the event of the contractor's noncompliance with the nondiscrimination clauses of this contract or with any of such rules, regulations, or orders, this contract may be cancelled, terminated or suspended in whole or in part and the contractor may be declared ineligible for further Government contracts in accordance with procedures authorized in

Executive Order No. 11246 of Sept. 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order No. 11246 of Sept. 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

(7) The contractor will include the provisions of paragraphs (1) through (7) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to Section 204 of Executive Order No. 11246 of Sept. 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as may be directed by the Secretary of Labor as a means of enforcing such provisions including sanctions for noncompliance: provided, however, that in the event the contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction, the contractor may request the United States to enter into such litigation to protect the interests of the United States.

Water Infrastructure Finance Authority of Arizona
Clean Water Revolving Fund
Drinking Water Revolving Fund

Disadvantaged Business Enterprises (DBE)

Good Faith Efforts

Borrowers and their prime contractors must follow, document, and maintain documentation of their good faith efforts as listed below to ensure that Certified Disadvantaged Business Enterprises* (DBEs) have the opportunity to participate in the project by increasing DBE awareness of procurement efforts and outreach.

1. Ensure DBEs are made aware of contracting opportunities to the fullest extent practicable through outreach and recruitment activities; including placing DBEs on solicitation lists and soliciting them whenever they are potential sources.
2. Make information on forthcoming opportunities available to DBEs and arrange time frames for contracts and establish delivery schedules, where the requirements permit, in a way that encourages and facilitates participation by DBEs in the competitive process. This includes, whenever possible, posting solicitation for bids or proposals for a minimum of 30 calendar days before the bid or proposal closing date.
3. Consider in the contracting process whether firms competing for large contracts could be subcontracted with DBEs. This will include dividing total requirements when economically feasible into smaller tasks or quantities to permit maximum participation by DBEs in the competitive process.
4. Encourage contracting with a consortium of DBEs when a contract is too large for one of these firms to handle individually.
5. Use the services and assistance of the Small Business Administration and the Minority Business Development Agency of the U. S. Department of Commerce.
6. If the prime contractor awards subcontracts, require the prime contractor to take the steps in numbers 1 through 5 above.

Required Contract Conditions

These conditions must be included in all procurement contracts entered into by the Borrower for all DWRF and CWRF projects:

1. The prime contractor must pay its subcontractor for satisfactory performance no more than 30 days from the prime contractor's receipt of payment from the owner.
2. The prime contractor must notify the owner in writing prior to the termination of any Disadvantaged Business Enterprise subcontractor for convenience by the prime contractor.
3. If a Disadvantaged Business Enterprise contractor fails to complete work under the subcontract for any reason, the prime contractor must employ the six good faith efforts if soliciting a replacement contractor.
4. The prime contractor must continue to employ the six good faith efforts even if the prime contractor has achieved its fair share objectives.

5. A Borrower must ensure that each procurement contract it awards contains the following terms and conditions:

> The contractor shall not discriminate on the basis of race, color, national origin or sex in the performance of this contract. The contractor shall carry out applicable requirements of 40 CFR Part 33 in the award and administration of contracts awarded under EPA financial assistance agreements. Failure by the contractor to carry out these requirements is a material breach of this contract which may result in the termination of this contract or other legally available remedies.

** A DBE is a Disadvantaged, Minority, or Woman Business Enterprise that has been certified by an entity from which EPA accepts certifications as described in 40 CFR 33.204-33.205 or certified by EPA. EPA accepts certifications from entities that meet or exceed EPA certification standards as described in 40 CFR 33.202.*

*** More information about DBE requirements can be found at https://www.epa.gov/grants/frequently-asked-questions-disadvantaged-business-enterprises*

Water Infrastructure Finance Authority of Arizona
Clean Water Revolving Fund
Drinking Water Revolving Fund

Prohibition on Certain Telecommunication and Video Surveillance Equipment

Public Law 115-232, enacted August 13, 2020

WIFA borrowers must comply with regulations at 2 CFR 200.216, *Prohibition on certain telecommunication and video surveillance services or equipment*, implementing section 889 of Public Law 115-232. The regulation prohibits the use of Federal funds to procure (enter into, extend, or renew contracts) or obtain equipment, systems, or services that use "covered telecommunications equipment or services" identified in the regulation as a substantial or essential component of any system, or as critical technology as part of any system. Prohibitions extend to the use of Federal funds by recipients and subrecipients to enter into a contract with an entity that "uses any equipment, system, or service that uses covered telecommunications equipment or services" as a substantial or essential component of any system, or as critical technology as part of any system. Certain equipment, systems, or services, including equipment, systems, or services produced or provided by entities subject to the prohibition are recorded in the System for Award Management exclusion list (*https://sam.gov/SAM/*).

As described in section 889 of Public Law 115-232, covered telecommunications equipment or services includes:

- **Telecommunications equipment produced by Huawei Technologies Company or ZTE Corporation (or any subsidiary or affiliate of such entities).**
- For the purpose of public safety, security of government facilities, physical security surveillance of critical infrastructure, and other security purposes, **video surveillance and telecommunications equipment produced by Hytera Communications Corporation, Hangzhou Hikvision Digital Technology Company, or Dahua Technology Company (or any subsidiary or affiliate of such entities).**
- Telecommunications or video surveillance services provided by such entities or using such equipment.
- Telecommunications or video surveillance equipment or services produced or provided by an entity that the Secretary of Defense, in consultation with the Director of the National Intelligence or the Director of the Federal Bureau of Investigation, reasonably believes to be an entity owned or controlled by, or otherwise connected to, the government of a covered foreign country.

There is no exhaustive list of components and services that fall under the prohibition. Borrowers and contractors should be particularly mindful of project components with internet or cellular connections. For example, automatic meter reading (AMR) technology and advanced metering infrastructure (AMI), instrumentation control systems (e.g. process control systems, distributed control systems and programmable logic controls), and security cameras and other electronic security measures. Items included in the prohibition are not eligible costs, and WIFA cannot reimburse borrowers for these costs.

SAMPLE Step Certification Letter (Processed/Manufactured)
Use of American Iron and Steel
Water Infrastructure Finance Authority of Arizona
CWSRF and DWSRF Funded Projects

The following information is provided as a sample letter of certification for AIS compliance (From March 20, 2014 EPA Memorandum American Iron and Steel Requirement Guidance).

Documentation must be provided on company letterhead.

Documentation should include the following five items:

- *Project name*
- *Product identification*
- *City and state where process took place*
- *Reference to American Iron and Steel Requirements as mandated by the EPA State Revolving Fund Programs.*
- *Signature*

Date

Company Name

Company Address

City, State Zip

Subject: American Iron and Steel Step Certification for Project (XXXXX)

I, (company representative), certify that the (melting, bending, coating, galvanizing, cutting, etc.) process for (manufacturing or fabricating) the following products and/or materials shipped or provided for the subject project is in full compliance with the American Iron and Steel requirement as mandated in EPA's State Revolving Fund Programs.

Item, Products and/or Materials:

1. XXXX
2. XXXX
3. XXXX

Such process took place at the following location: _CITY AND STATE_____

If any of the above compliance statements change while providing material to this project we will immediately notify the prime contractor and the engineer.

Signed by company representative

SAMPLE Step Certification Letter (Shipped/Provided)
Use of American Iron and Steel
Water Infrastructure Finance Authority of Arizona
CWSRF and DWSRF Funded Projects

The following information is provided as a sample letter of certification for AIS compliance (From March 20, 2014 EPA Memorandum American Iron and Steel Requirement Guidance).

Documentation must be provided on company letterhead.

Documentation should include the following five items:

- *Project name*
- *Product identification*
- *City and state where process took place*
- *Reference to American Iron and Steel Requirements as mandated by the EPA State Revolving Fund Programs.*
- *Signature*

Date

Company Name

Company Address

City, State Zip

Subject: American Iron and Steel Certification for Project (XXXXX)

I, (company representative), certify that the following products and/or materials shipped/provided to the subject project are in full compliance with the American Iron and Steel requirement as mandated in EPA's State Revolving Fund Programs.

Item, Products and/or Materials:
1. XXXX
2. XXXX
3. XXXX

Such process took place at the following location: _CITY AND STATE_____

If any of the above compliance statements change while providing material to this project we will immediately notify the prime contractor and the engineer.

Signed by company representative

American Iron and Steel Materials and De Minimis Worksheet

Rev: 03/2020

Water Infrastructure Finance Authority of Arizona

CWSRF and DWSRF Funded Projects

Visit EPA's Guidance Document for more information on American Iron and Steel Covered Products and De Minimis items.

Project:	
Total Materials Cost:	**$0.00**
Total Amount Covered Under De Minimis Waiver (incidental items):	**$0.00**
Percent (must be 5% or less of total materials cost):	**#DIV/0!**

Covered products include: Lined or unlined pipes or fittings; manhole covers; municipal castings; pipe clamps and restraints; valves; structural steel; hydrants, tanks; flanges; reinforced precast concrete; construction materials.

Products not subject to American Iron and Steel include mechanical and electrical equipment and related appurtances.

Incidental items are miscellaneous, generally low-cost items, often procured in bulk, such as washers, screws, fasteners, small amounts of wire, etc.

Product Classification ***(select from drop-down)***	**Product Description**	**Dollar Amount**	**Date Purchased**	**Supplier**	**AIS Documentation Received (covered products only)**

WIFA PROJECT WAGE RATE WORKSHEET

The construction category of Heavy (excluding dam construction) should typically be applied to all projects funded by WIFA. If you believe that a different category of wages, such as Building, should be applied to your project or portions of your project, please contact WIFA in advance.

PROJECT NAME:	WAGE DECISION NUMBER AND DATE:
WIFA PROJECT NUMBER:	PROJECT COUNTY:

WORK CLASSIFICATION	BASIC HOURLY RATE	FRINGE BENEFITS	TOTAL HOURLY WAGE RATE

ADDITIONAL CLASSIFICATIONS NEEDED (DOL FORM SF-1444)

WORK CLASSIFICATION	BASIC HOURLY RATE	FRINGE BENEFITS	TOTAL HOURLY WAGE RATE	DATE OF WIFA SUBMISSION TO DOL	DATE OF DOL APPROVAL

SF 1444 Instructions
Request for Additional Classification and Wage Rate Form

Attached is a copy of the federal standard form 1444, Request for Authorization of Additional Classification and Wage Rate. This form must be submitted when a wage classification is not listed on the applicable wage decision. The classification and wage rate submitted on the form should bear a reasonable likeness to similar skill classifications listed in the federal wage determination.

The prime contractor is responsible for the completion and submission of this form. The following are the procedures for the completion and submission of the form:

1. Check "Construction Contract" in the upper right-hand corner.

Box 2. Insert the following information:
Water Infrastructure Finance Authority of Arizona
(WIFA) 100 N. 7th Ave., Ste. 130
Phoenix, AZ 85007

Box 3. Prime contractor's name.

Box 4. Date the prime contractor submitted the form to WIFA.

Box 5. Contract number.

Box 6. Date the bid was opened, if applicable.

Box 7. Date the contract was awarded.

Box 8. Actual date the contractor will be starting or started work.

Box 9. (This box is not applicable.)

Box 10. List all subcontractors that will utilize the labor classification listed in box 13a. If none, enter "N/A."

Box 11. Project title and a brief description of the project.

Box 12. Include both the city and county, as well as Arizona.

Box 13. Federal "General Decision Number" (e.g. AZ00009) and the date.

Box 13a. List all classifications not covered by the federal wage determination, which are utilized by either the prime or the subcontractor(s).

Box13b. The wage rate should bear a reasonable likeness to the category classification wage rates (equipment operators, laborers, truck drivers, etc.) listed in the federal wage determination.

Box 13c. The fringe rate should bear a reasonable likeness to the category classification fringe rates (equipment operators, laborers, truck drivers, etc.) listed in the federal wage determination.

Box 14. If there is a subcontractor listed on line 10, its representative signs on this line.

Box 15. The prime contractor's representative must sign on this line.

Box 16. If the contractor has a specific employee who will be performing the labor classification(s) listed in box 13a, or if the employees' have legal representation (union, etc.), they should sign this line and include their title. If no specific employee is identified to perform work under the listed classification(s), then write "unknown" in the box. The "Agree" or "Disagree" boxes are checked by anyone signing in boxes 14, 15, and 16.

The contractor will make a copy of the completed signed form and submit the original to WIFA (not required to be in quadruplicate).

WIFA will complete the section below the heavy line TO BE COMPLETED BY CONTRACTING OFFICER and submit it to DOL and EPA. Typically DOL responds in 30 days. WIFA will send the borrower a copy of the approved wage classification.

REQUEST FOR AUTHORIZATION OF ADDITIONAL CLASSIFICATION AND RATE

CHECK APPROPRIATE BOX
☐ SERVICE CONTRACT
☐ CONSTRUCTION CONTRACT

OMB Control Number: 9000-0066
Expiration Date: 4/30/2022

Paperwork Reduction Act Statement - This information collection meets the requirements of 44 U.S.C. § 3507, as amended by section 2 of the Paperwork Reduction Act of 1995. You do not need to answer these questions unless we display a valid Office of Management and Budget (OMB) control number. The OMB control number for this collection is 9000-0066. We estimate that it will take .5 hours to read the instructions, gather the facts, and answer the questions. Send only comments relating to our time estimate, including suggestions for reducing this burden, or any other aspects of this collection of information to: U.S. General Services Administration, Regulatory Secretariat Division (M1V1CB), 1800 F Street, NW, Washington, DC 20405.

INSTRUCTIONS: THE CONTRACTOR SHALL COMPLETE ITEMS 3 THROUGH 16, KEEP A PENDING COPY, AND SUBMIT THE REQUEST, IN QUADRUPLICATE, TO THE CONTRACTING OFFICER.

1. **TO:** ADMINISTRATOR, WAGE AND HOUR DIVISION U.S. DEPARTMENT OF LABOR WASHINGTON, DC 20210	2. **FROM:** *(REPORTING OFFICE)*
3. CONTRACTOR	4. DATE OF REQUEST

5. CONTRACT NUMBER	6. DATE BID OPENED *(SEALED BIDDING)*	7. DATE OF AWARD	8. DATE CONTRACT WORK STARTED	9. DATE OPTION EXERCISED (If *APPLICABLE) (SERVICE CONTRACT ONLY)*

10. SUBCONTRACTOR *(IF ANY)*

11. PROJECT AND DESCRIPTION OF WORK *(ATTACH ADDITIONAL SHEET IF NEEDED)*

12. LOCATION (*CITY, COUNTY, AND STATE)*

13. IN ORDER TO COMPLETE THE WORK PROVIDED FOR UNDER THE ABOVE CONTRACT, IT IS NECESSARY TO ESTABLISH THE FOLLOWING RATE(S) FOR THE INDICATED CLASSIFICATION(S) NOT INCLUDED IN THE DEPARTMENT OF LABOR DETERMINATION

NUMBER: _____ DATED: _____

a. LIST IN ORDER: PROPOSED CLASSIFICATION TITLE(S); JOB DESCRIPTION(S); DUTIES; AND RATIONALE FOR PROPOSED CLASSIFICATIONS *(Service contracts only)*	b. WAGE RATE(S)	c. FRINGE BENEFITS PAYMENTS
(Use reverse or attach additional sheets, if necessary)		

14. SIGNATURE AND TITLE OF SUBCONTRACTOR REPRESENTATIVE *(IF ANY)*	15. SIGNATURE AND TITLE OF PRIME CONTRACTOR REPRESENTATIVE	
16. SIGNATURE OF EMPLOYEE OR REPRESENTATIVE	TITLE	CHECK APPROPRIATE BOX-REFERENCING BLOCK 13. ☐ **AGREE** ☐ **DISAGREE**

TO BE COMPLETED BY CONTRACTING OFFICER *(CHECK AS APPROPRIATE - SEE FAR 22.1019 (SERVICE CONTRACT LABOR STANDARDS) OR FAR 22.406-3 (CONSTRUCTION WAGE RATE REQUIREMENTS))*

☐ THE INTERESTED PARTIES AGREE AND THE CONTRACTING OFFICER RECOMMENDS APPROVAL BY THE WAGE AND HOUR DIVISION. AVAILABLE INFORMATION AND RECOMMENDATIONS ARE ATTACHED.

☐ THE INTERESTED PARTIES CANNOT AGREE ON THE PROPOSED CLASSIFICATION AND WAGE RATE. A DETERMINATION OF THE QUESTION BY THE WAGE AND HOUR DIVISION IS THEREFORE REQUESTED. AVAILABLE INFORMATION AND RECOMMENDATIONS ARE ATTACHED.

(Send 3 copies to the Department of Labor)

SIGNATURE OF CONTRACTING OFFICER OR REPRESENTATIVE	TITLE AND COMMERCIAL TELEPHONE NUMBER	DATE SUBMITTED

EMPLOYEE RIGHTS

UNDER THE DAVIS-BACON ACT

FOR LABORERS AND MECHANICS EMPLOYED ON FEDERAL OR FEDERALLY ASSISTED CONSTRUCTION PROJECTS

PREVAILING WAGES

You must be paid not less than the wage rate listed in the Davis-Bacon Wage Decision posted with this Notice for the work you perform.

OVERTIME

You must be paid not less than one and one-half times your basic rate of pay for all hours worked over 40 in a work week. There are few exceptions.

ENFORCEMENT

Contract payments can be withheld to ensure workers receive wages and overtime pay due, and liquidated damages may apply if overtime pay requirements are not met. Davis-Bacon contract clauses allow contract termination and debarment of contractors from future federal contracts for up to three years. A contractor who falsifies certified payroll records or induces wage kickbacks may be subject to civil or criminal prosecution, fines and/or imprisonment.

APPRENTICES

Apprentice rates apply only to apprentices properly registered under approved Federal or State apprenticeship programs.

PROPER PAY

If you do not receive proper pay, or require further information on the applicable wages, contact the Contracting Officer listed below:

Water Infrastructure Finance Authority of Arizona
100 N. 7th Ave. Suite 130
Phoenix, AZ 85007

Tel: (602) 364-1310
Fax: (602) 364-1327

or contact the U.S. Department of Labor's Wage and Hour Division.

WAGE AND HOUR DIVISION
UNITED STATES DEPARTMENT OF LABOR

1-866-487-9243
TTY: 1-877-889-5627
www.dol.gov/whd

WH1321 REV 10/17

DERECHOS DEL EMPLEADO
BAJO LA LEY DAVIS-BACON

PARA OBREROS Y MECÁNICOS EMPLEADOS EN PROYECTOS DE CONSTRUCCIÓN FEDERAL O CON ASISTENCIA FEDERAL

SALARIOS PREVALECIENTES

No se le puede pagar menos de la tasa de pago indicada en la Decisión de Salarios Davis-Bacon fijada con este Aviso para el trabajo que Ud. desempeña.

SOBRETIEMPO

Se le ha de pagar no menos de tiempo y medio de su tasa básica de pago por todas las horas trabajadas en exceso de 40 en una semana laboral. Existen pocas excepciones.

CUMPLIMIENTO

Se pueden retener pagos por contratos para asegurarse que los obreros reciban los salarios y el pago de sobretiempo debidos, y se podría aplicar daños y perjuicios si no se cumple con las exigencias del pago de sobretiempo. Las cláusulas contractuales de Davis-Bacon permiten la terminación y exclusión de contratistas para efectuar futuros contratos federales hasta tres años. El contratista que falsifique los registros certificados de las nóminas de pago o induzca devoluciones de salarios puede ser sujeto a procesamiento civil o criminal, multas y/o encarcelamiento.

APRENDICES

Las tasas de aprendices sólo se aplican a aprendices correctamente inscritos bajo programas federales o estatales aprobados.

PAGO APROPIADO

Si Ud. no recibe el pago apropiado, o precisa de información adicional sobre los salarios aplicables, póngase en contacto con el Contratista Oficial que aparece abajo:

Water Infrastructure Finance Authority of Arizona
100 N. 7th Ave. Suite 130
Phoenix, AZ 85007

Tel: (602) 364-1310
Fax: (602) 364-1327

o póngase en contacto con la División de Horas y Salarios del Departamento de Trabajo de los EE.UU.

DIVISIÓN DE HORAS Y SALARIOS
DEPARTAMENTO DE TRABAJO DE LOS EE.UU.

1-866-487-9243
TTY: 1-877-889-5627
www.dol.gov/whd

WH1321 SPA REV 10/17

U.S. Department of Labor
Wage and Hour Division

PAYROLL

(For Contractor's Optional Use; See Instructions at www.dol.gov/whd/forms/wh347instr.htm)

Persons are not required to respond to the collection of information unless it displays a currently valid OMB control number.

U.S. Wage and Hour Division

Rev. Dec. 2008

OMB No.:1235-0008
Expires: 04/30/2021

NAME OF CONTRACTOR ☐ OR SUBCONTRACTOR ☐	ADDRESS	
PAYROLL NO.	FOR WEEK ENDING	PROJECT AND LOCATION / PROJECT OR CONTRACT NO.

(1) NAME AND INDIVIDUAL IDENTIFYING NUMBER (e.g., LAST FOUR DIGITS OF SOCIAL SECURITY NUMBER) OF WORKER	(2) NO. OF WITHHOLDING EXEMPTIONS	(3) WORK CLASSIFICATION	OT. OR ST.	(4) DAY AND DATE — HOURS WORKED EACH DAY	(5) TOTAL HOURS	(6) RATE OF PAY	(7) GROSS AMOUNT EARNED	(8) DEDUCTIONS: FICA	WITH-HOLDING TAX			OTHER	TOTAL DEDUCTIONS	(9) NET WAGES PAID FOR WEEK
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While completion of Form WH-347 is optional, it is mandatory for covered contractors and subcontractors performing work on Federally financed or assisted construction contracts to respond to the information collection contained in 29 C.F.R. §§ 3.3, 5.5(a). The Copeland Act (40 U.S.C. § 3145) contractors and subcontractors performing work on Federally financed or assisted construction contracts to "furnish weekly a statement with respect to the wages paid each employee during the preceding week." U.S. Department of Labor (DOL) regulations at 29 C.F.R. § 5.5(a)(3)(ii) require contractors to submit weekly a copy of all payrolls to the Federal agency contracting for or financing the construction project, accompanied by a signed "Statement of Compliance" indicating that the payrolls are correct and complete and that each laborer or mechanic has been paid not less than the proper Davis-Bacon prevailing wage rate for the work performed. DOL and federal contracting agencies receiving this information review the information to determine that employees have received legally required wages and fringe benefits.

Public Burden Statement

We estimate that is will take an average of 55 minutes to complete this collection, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. If you have any comments regarding these estimates or any other aspect of this collection, including suggestions for reducing this burden, send them to the Administrator, Wage and Hour Division, U.S. Department of Labor, Room S3502, 200 Constitution Avenue, N.W. Washington, D.C. 20210

(over)

Date _____

I, _____ _____
(Name of Signatory Party) (Title)

do hereby state:

(1) That I pay or supervise the payment of the persons employed by

_____ on the
(Contractor or Subcontractor)

_____; that during the payroll period commencing on the
(Building or Work)

_____ day of _____, _____, and ending the _____ day of _____, _____,

all persons employed on said project have been paid the full weekly wages earned, that no rebates have been or will be made either directly or indirectly to or on behalf of said

_____ from the full
(Contractor or Subcontractor)

weekly wages earned by any person and that no deductions have been made either directly or indirectly from the full wages earned by any person, other than permissible deductions as defined in Regulations, Part 3 (29 C.F.R. Subtitle A), issued by the Secretary of Labor under the Copeland Act, as amended (48 Stat. 948, 63 Stat. 108, 72 Stat. 967; 76 Stat. 357; 40 U.S.C. § 3145), and described below:

_____

_____

_____

_____

(2) That any payrolls otherwise under this contract required to be submitted for the above period are correct and complete; that the wage rates for laborers or mechanics contained therein are not less than the applicable wage rates contained in any wage determination incorporated into the contract; that the classifications set forth therein for each laborer or mechanic conform with the work he performed.

(3) That any apprentices employed in the above period are duly registered in a bona fide apprenticeship program registered with a State apprenticeship agency recognized by the Bureau of Apprenticeship and Training, United States Department of Labor, or if no such recognized agency exists in a State, are registered with the Bureau of Apprenticeship and Training, United States Department of Labor.

(4) That:

(a) WHERE FRINGE BENEFITS ARE PAID TO APPROVED PLANS, FUNDS, OR PROGRAMS

☐ – in addition to the basic hourly wage rates paid to each laborer or mechanic listed in the above referenced payroll, payments of fringe benefits as listed in the contract have been or will be made to appropriate programs for the benefit of such employees, except as noted in section 4(c) below.

(b) WHERE FRINGE BENEFITS ARE PAID IN CASH

☐ – Each laborer or mechanic listed in the above referenced payroll has been paid, as indicated on the payroll, an amount not less than the sum of the applicable basic hourly wage rate plus the amount of the required fringe benefits as listed in the contract, except as noted in section 4(c) below.

(c) EXCEPTIONS

EXCEPTION (CRAFT)	EXPLANATION

REMARKS:

NAME AND TITLE	SIGNATURE

THE WILLFUL FALSIFICATION OF ANY OF THE ABOVE STATEMENTS MAY SUBJECT THE CONTRACTOR OR SUBCONTRACTOR TO CIVIL OR CRIMINAL PROSECUTION. SEE SECTION 1001 OF TITLE 18 AND SECTION 231 OF TITLE 31 OF THE UNITED STATES CODE.

WATER INFRASTRUCTURE FINANCE AUTHORITY OF ARIZONA

EMPLOYEE INTERVIEW FOR DAVIS-BACON LABOR STANDARDS INSTRUCTIONS

The Davis-Bacon Act requires interviews to determine if the contractor is complying with the Federal Davis-Bacon prevailing wages. Interviewers must use WIFA's interview form, Department of Labor's Standard Form 1445, or equivalent documentation. WIFA's form may be downloaded from WIFA's website: www.azwifa.gov/resources/contract-packet. See Section 5: Compliance Verification of the WIFA Contract Packet for the interview requirements.

Interviews should be conducted in the following manner:

Interviewer: Each borrower is required to conduct interviews. The interviewer must be someone unaffiliated with the contractors and on site regularly (i.e., project manager, or consultant, etc.).

Purpose: The purpose of the interview is to ensure that the work actually being done by construction workers and mechanics is consistent with the corresponding job titles and wages being reported on the certified payrolls. The payroll checker must compare the interviews to the payrolls to identify inconsistencies. Any inconsistencies must be addressed. Keep in mind that both the interview and the information on the interview form are considered confidential. Interviews should be conducted individually and in private. All employees on the work site should be available for an interview if requested by the interviewer; however, the employee's participation is voluntary.

Number of Interviews: A representative sample of interviews is required. The interviewer must interview at least one person from every contractor and subcontractor company on the job site.

Timing: Interviews should be done, at minimum, on two different occasions. One should be within the first two weeks after construction begins and whenever a new subcontractor begins work on the project. The second round should be done closer to substantial completion while workers are still on site. Additional interviews should be done when issues or discrepancies arise and should be targeted at the contractor in question.

Records: Interview forms should be kept by the borrower with the rest of the project records at least three years after the contract is completed. The interview forms have employee information that should be kept confidential from contractors generally, but the project folders must be available for inspection by WIFA, EPA, or Department of Labor upon request.

Item	**INTERVIEW**
2b. - 2c.	This information is required in case it is necessary to follow up with the employee.
3a.	The interviewer should make it clear to the employee that these items relate only to work on this project, not necessarily to other projects.
3b.	Employees should be encouraged (but not required) to produce pay stubs or pay envelopes which document the wages received.
5. - 6.	If the employee does not know where the wage rate decision and Davis-Bacon poster are posted, the interviewer should inform the person of the location(s) and encourage them to look at the documents.
8.	Many employees will not be familiar with the term "fringe benefits." The interviewer should explain to the employee that fringe can be paid as part of their hourly rate, or can be in the form of benefits such as vacation, medical, etc.
9a. -9c.	The interviewer should make it clear to the employee that these items relate only to work on this project, not necessarily to other projects.

11. - 13.	Be certain that the employee's responses are specific. The employee may not be familiar with the classifications used on the wage determination and thus may use a term which may not be found on the determination. The answers to questions 12 and 13 should elicit enough information to identify the appropriate wage classification. Confirm the presumed wage classification with the employee.

INTERVIEWER'S COMMENTS	
16.	This represents some of the most important information gathered while conducting on-site interviews. Be specific about the duties the employee was observed performing. It may be easiest to make these observations before the interview. Comments in this section should include whether observed duties and tools used were the same as those described by the employee during the interview.
19. - 20.	This refers to the wage decision and date as posted on the job site. This information should be consistent with the contract documents.

FOR USE BY PAYROLL CHECKER	
21. - 22.	The payroll checker can be the same person as the interviewer. If not, it should be someone familiar with the wage rate decision, labor standards provisions and the construction project. This part of the form is completed *after* receipt of the payroll reports covering the week during which the interview was conducted. It is important that the payroll reports are received in a timely manner so that the payroll checker can compare and verify the interview information and investigate discrepancies. Once the corresponding payroll reports are received, the information on the interview form must be compared to the payroll reports. Specifically, the payroll checker must check that: • the payroll report is consistent with the dates and hours the employee worked (Items 9a.-9c.). • the payroll report indicates that the employee's job classification is the same as that indicated by the employee in Items 11 - 13. • the payroll report indicates that the employee received the wages as s/he stated in Item 3a. • the payroll report indicates that the employee received the fringe benefits in the amount and as stated in Item 8. • the wages/fringes paid agree with the wage rate decision in the contract and any additional classification requests approved by DOL (SF1444). Any discrepancies noted between the interview form and payroll reports shall be reported in Item 22. <u>If discrepancies are noted, follow-up actions to resolve the discrepancies must be taken</u>. For example, if the payroll indicates that the employee worked a different number of hours than the employee indicated, the payroll checker must: a) contact the employee and ask for clarification; and b) request the contractor's actual time records. This should be done without revealing the identity of the employee, e.g. by asking for all employee records for one work week.

WATER INFRASTRUCTURE FINANCE AUTHORITY OF ARIZONA

EMPLOYEE INTERVIEW FOR DAVIS-BACON LABOR STANDARDS

1a. Project Name		2a. Employee Name	
1b. Contract Number	Wage Decision and Date	2b. Employee Phone Number	
1c. Name of Prime Contractor		2c. Employee Home Address and Zip Code	
1d. Name of Employer and Supervisor			

3a. Hourly rate of pay on this project: 3b. Do you have your most recent paystub? Y ☐ N ☐	4. Do you know that you are working on a federally-funded project and that you are to be paid wages set by DOL (Davis-Bacon wages)? Y ☐ N ☐	5. Do you know where the Davis-Bacon Wage Rate Decision for this project is posted? Y ☐ N ☐	6. Do you know where the "Employee Rights under the Davis-Bacon Act" poster is posted? Y ☐ N ☐
7a. Do you ever work over 8 hours per day? Y ☐ N ☐	7b. Do you ever work over 40 hours per week? Y ☐ N ☐	7c. Are you paid at least time and a half for overtime hours? Y ☐ N ☐ N/A ☐	8. Do you receive Fringe Benefits? Vacation Y ☐ N ☐ Medical Y ☐ N ☐ Pension Y ☐ N ☐ Cash/pay Y ☐ N ☐ Other:
9a. Date you began work on this project:	9b. Date of last work day on this project before interview:	9c. How many hours did you work on your last work day before this interview on this job?	
10. What deductions other than taxes and social security are made from your pay?		11. Work Classification (list all on this project):	
12. Your duties on this project:		13. Tools and equipment you use on this project:	

THE ABOVE IS CORRECT TO THE BEST OF MY KNOWLEDGE

14. Employee Signature	Date	
15. Interviewer Signature	Interviewer Name	Date

INTERVIEWER'S COMMENTS

16. Work employee was doing/tools employee was using when interviewed:	17. Is employee properly classified and paid? Y ☐ N ☐	18. Are wage rate and poster displayed? Y ☐ N ☐
	19. Wage Rate Decision Number:	20. Wage Rate Decision Date:

FOR USE BY PAYROLL CHECKER

21. Is above information in agreement with payroll data? Y ☐ N ☐	22. If no, provide explanation and resolution:		
23. Payroll Checker Signature	Payroll Checker Name	Date	

"General Decision Number: AZ20250062 12/12/2025

Superseded General Decision Number: AZ20240062

State: Arizona

Construction Type: Heavy

County: Yuma County in Arizona.

Modification Number	Publication Date
0	01/03/2025
1	06/06/2025
2	06/20/2025
3	09/12/2025
4	12/12/2025

ELEC0570-014 06/01/2025

	Rates	Fringes
Electrician	$ 33.00	21.33%+6.00

ELEC0769-001 08/04/2025

	Rates	Fringes
Electrician: Lineperson	$ 62.08	21.5%+9.14

ELEC0769-003 08/04/2025

	Rates	Fringes
Electrician: Groundperson	$ 36.00	21.5%+9.14

ELEC0769-004 08/04/2025

	Rates	Fringes
Electrician: Line Equipment Operator	$ 46.56	21.5%+9.14

ENGI0012-035 12/01/2024

	Rates	Fringes
POWER EQUIPMENT OPERATOR:		
Oiler	$ 32.29	18.12

ENGI0012-037 12/01/2024

	Rates	Fringes
POWER EQUIPMENT OPERATOR:		
Field Equipment Serviceperson	$ 35.56	18.12

ENGI0012-042 12/01/2024

	Rates	Fringes
POWER EQUIPMENT OPERATOR:		
Crane/Derrick	$ 36.64	18.12

ENGI0012-043 12/01/2024

	Rates	Fringes
POWER EQUIPMENT OPERATOR:		
Mechanic	$ 37.67	18.12

ENGI0012-044 12/01/2024

	Rates	Fringes
POWER EQUIPMENT OPERATOR:		
Bobcat/Skid Steer/Skid Loader	$ 32.29	18.12

ENGI0012-045 12/01/2024

	Rates	Fringes
POWER EQUIPMENT OPERATOR:		
Backhoe/Backhoe & Loader Combo/Track Backhoe	$ 35.56	18.12

ENGI0012-046 12/01/2024

	Rates	Fringes
POWER EQUIPMENT OPERATOR:		
Bulldozer	$ 35.56	18.12

ENGI0012-047 12/01/2024

	Rates	Fringes
POWER EQUIPMENT OPERATOR:		
Compactor/Roller	$ 35.56	18.12

ENGI0012-048 12/01/2024

	Rates	Fringes
POWER EQUIPMENT OPERATOR:		
Drill Rig/Auger	$ 35.56	18.12

ENGI0012-054 12/01/2024

	Rates	Fringes
POWER EQUIPMENT OPERATOR:		
Trencher	$ 35.56	18.12

ENGI0012-055 12/01/2024

	Rates	Fringes
TRUCK DRIVER		
Hydrovac	$ 35.56	18.12

ENGI0012-059 12/01/2024

	Rates	Fringes
POWER EQUIPMENT OPERATOR:		
Grade Checker	$ 36.64	18.12

ENGI0012-060 12/01/2024

	Rates	Fringes
Power Equipment Operator:		
Loader/Front End Loader		
All types rated capacity 3 cubic yds or less	$ 32.29	18.12
All types rated capacity over 3, less than 6 cubic yds	$ 35.56	18.12
Rated capacity 6, less than 10 cubic yds	$ 36.64	18.12

ENGI0012-061 12/01/2024

	Rates	Fringes
POWER EQUIPMENT OPERATOR:		
Motor Grader/Blade	$ 36.64	18.12

ENGI0012-076 12/01/2024

	Rates	Fringes
Power Equipment Operator: Excavator/Trackhoe		
1/2 cubic yard or smaller	$ 35.56	18.12
Greater than 1/2 cubic yard	$ 36.64	18.12

LABO1184-013 06/01/2025

	Rates	Fringes
Laborer: Jackhammer	$ 29.05	9.26

LABO1184-015 06/01/2025

	Rates	Fringes
Power Equipment Operator: Forklift	$ 30.88	9.26

LABO1184-016 06/01/2025

	Rates	Fringes
Power Equipment Operator: Horizontal Directional Drill	$ 31.98	9.26

LABO1184-019 06/01/2025

	Rates	Fringes
LABORER: Mason Tender	$ 27.41	9.26

LABO1184-020 06/01/2025

	Rates	Fringes
Laborer: Pipelayer	$ 27.41	9.26

LABO1184-022 06/01/2025

	Rates	Fringes
Laborer: Asphalt, Includes Raker, Shoveler, Spreader and Distributor	$ 29.05	9.26

LABO1184-034 06/01/2025

	Rates	Fringes
Truck Driver:		
Concrete	$ 30.88	9.26

LABO1184-035 06/01/2025

	Rates	Fringes
Truck Driver:		
Dump	$ 30.88	9.26

LABO1184-036 06/01/2025

	Rates	Fringes
Truck Driver:		
Water	$ 30.88	9.26

LABO1184-042 06/01/2025

	Rates	Fringes
Traffic Control	$ 27.41	9.26

LABO1184-050 06/01/2025

	Rates	Fringes
Carpenter: Formwork Concrete	$ 31.98	9.26

SUAZ2023-012 11/19/2024

	Rates	Fringes
Laborer: General	$ 21.54	0.00
Power Equipment Operator:		
Scraper	$ 32.30	0.00

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the

Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at https://www.dol.gov/agencies/whd/government-contracts.

Note: Executive Order 13658 generally applies to contracts subject to the Davis-Bacon Act that were awarded on or between January 1, 2015 and January 29, 2022, and that have not been renewed or extended on or after January 30, 2022. Executive Order 13658 does not apply to contracts subject only to the Davis-Bacon Related Acts regardless of when they were awarded. If a contract is subject to Executive Order 13658, the contractor must pay all covered workers at least $13.30 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2025. The applicable Executive Order minimum wage rate will be adjusted annually. Additional information on contractor requirements and worker protections under Executive Order 13658 is available at www.dol.gov/whd/govcontracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (iii)).

The body of each wage determination lists the classifications and wage rates that have been found to be prevailing for the type(s) of construction and geographic area covered by the wage determination. The classifications are listed in alphabetical order under rate identifiers indicating whether the particular rate is a union rate (current union negotiated rate), a survey rate, a weighted union average rate, a state adopted rate, or a supplemental classification rate.

Union Rate Identifiers

A four-letter identifier beginning with characters other than ""SU"", ""UAVG"", ?SA?, or ?SC? denotes that a union rate was prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2024. PLUM is an identifier of the union whose collectively bargained rate prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. The date, 07/01/2024 in the example, is the effective date of the most current negotiated rate.

Union prevailing wage rates are updated to reflect all changes over time that are reported to WHD in the rates in the collective bargaining agreement (CBA) governing the classification.

Union Average Rate Identifiers

The UAVG identifier indicates that no single rate prevailed for those classifications, but that 100% of the data reported for the classifications reflected union rates. EXAMPLE: UAVG-OH-0010 01/01/2024. UAVG indicates that the rate is a weighted union average rate. OH indicates the State of Ohio. The next number, 0010 in the example, is an internal number used in producing the wage determination. The date, 01/01/2024 in the example, indicates the date the wage determination was updated to reflect the most current union average rate.

A UAVG rate will be updated once a year, usually in January, to reflect a weighted average of the current rates in the collective bargaining agreements on which the rate is based.

Survey Rate Identifiers

The ""SU"" identifier indicates that either a single non-union rate prevailed (as defined in 29 CFR 1.2) for this classification in the survey or that the rate was derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As a weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SUFL2022-007 6/27/2024. SU indicates the rate is a single non-union prevailing rate or a weighted average of survey data for that classification. FL indicates the State of Florida. 2022 is the year of the survey on which these classifications and rates are based. The next number, 007 in the example, is an internal

number used in producing the wage determination. The date, 6/27/2024 in the example, indicates the survey completion date for the classifications and rates under that identifier.

?SU? wage rates typically remain in effect until a new survey is conducted. However, the Wage and Hour Division (WHD) has the discretion to update such rates under 29 CFR 1.6(c)(1).

State Adopted Rate Identifiers

The ""SA"" identifier indicates that the classifications and prevailing wage rates set by a state (or local) government were adopted under 29 C.F.R 1.3(g)-(h). Example: SAME2023-007 01/03/2024. SA reflects that the rates are state adopted. ME refers to the State of Maine. 2023 is the year during which the state completed the survey on which the listed classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 01/03/2024 in the example, reflects the date on which the classifications and rates under the ?SA? identifier took effect under state law in the state from which the rates were adopted.

WAGE DETERMINATION APPEALS PROCESS

1) Has there been an initial decision in the matter? This can be:

a) a survey underlying a wage determination
b) an existing published wage determination
c) an initial WHD letter setting forth a position on a wage determination matter
d) an initial conformance (additional classification and rate) determination

On survey related matters, initial contact, including requests for summaries of surveys, should be directed to the WHD Branch of Wage Surveys. Requests can be submitted via email to davisbaconinfo@dol.gov or by mail to:

Branch of Wage Surveys
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

Regarding any other wage determination matter such as conformance decisions, requests for initial decisions should be

directed to the WHD Branch of Construction Wage Determinations. Requests can be submitted via email to BCWD-Office@dol.gov or by mail to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2) If an initial decision has been issued, then any interested party (those affected by the action) that disagrees with the decision can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Requests for review and reconsideration can be submitted via email to dba.reconsideration@dol.gov or by mail to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210.

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END OF GENERAL DECISION"

TECHNICAL SPECIFICATIONS – 100% ISSUED FOR BID

City of San Luis
Lift Station 300 Influent Force Main Upgrades

December 2025

Prepared For:

City of San Luis
1090 East Union Street
San Luis, AZ 85349

Prepared by:

Pacific Advanced Civil Engineering, Inc.
8723 E. Via de Commercio, #A-204
Scottsdale, AZ 85258

Contact Person:
Duong Do, P.E., F.ASCE
Mike Krebs, PE

PACE JN #B777

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Appendix A – Geotechnical Report

END OF SECTION

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PART 1 – GENERAL

1.01 CONTRACT DOCUMENTS

The Contract Documents which constitute the contract between the OWNER and the CONTRACTOR with regard to the subject matter as set forth in Section I of such contract ("Contract Agreement") and include the Contract Agreement, plans, drawings, and the technical specifications.

All terms and conditions established in the Contract Agreement shall supersede all general conditions of these specifications to be followed in the event of any conflict or discrepancies.

1.02 DEFINITIONS AND MEANINGS OF TERMS

Whenever in the Contract Documents the following terms or pronouns referring to them are used, the intent and meaning shall be interpreted as follows which shall be applicable to both the singular and plural thereof:

A. The Contract shall mean the Contract executed by the OWNER and the CONTRACTOR, of which these General Conditions form a part; the terms Contract and Agreement are synonymous.

B. The term OWNER shall mean the respective party to the Contract; the OWNER being the City of San Luis. The term OWNER may also mean consultants, engineers, or other professionals contracted by the OWNER to review, supervise, or consult on the project.

C. The term County shall mean Yuma County, AZ.

D. The term CONTRACTOR shall mean the respective party to the contract.

E. The term SUBCONTRACTOR shall mean any individual, partnership or corporation having a direct contract with the CONTRACTOR to perform any part of the WORK.

F. The term ENGINEER shall mean Pacific Advanced Civil Engineering, Inc. (PACE).

G. Addenda shall mean written or graphic instruments issued prior to the execution of the Agreement which modify or interpret the Contract Documents, Final Design Plans, by additions, deletions, clarifications, or corrections.

H. Bonds shall mean Performance and Payment Bonds and other instruments of security, furnished by the CONTRACTOR and its surety in accordance with the Contract Documents.

I. Change Order shall mean a written order to the CONTRACTOR authorizing an addition, deletion, or revision in the WORK within the general scope of the Contract Documents, or authorizing an adjustment in the Contract price or Contract time.

J. Contractual Agreement shall mean the signed agreement between the OWNER and the CONTRACTOR for the WORK intended.

K. Contract Documents shall have the meaning described in Section 1.01 herein.

L. Contract price shall mean the total monies payable to the CONTRACTOR under the terms and conditions of the Contract Documents.

M. Contract time in days shall mean the number of consecutive calendar days stated in the Contract Documents for the completion of the WORK.

N. Drawings shall mean the part of the Contract Documents, which show the characteristics and scope of the WORK to be performed and which have been prepared or approved by the ENGINEER.

O. Notice to proceed shall mean written communication issued by the OWNER to the CONTRACTOR authorizing him to proceed with the WORK and establishing the date of commencement of the WORK.

P. Project shall mean the undertaking to be performed as provided in the Contract Documents.

Q. Submittals shall mean all drawings, diagrams, illustrations, brochures, schedules, and other data which are prepared by the CONTRACTOR, a SUBCONTRACTOR, manufacturer, supplier, or distributor, which illustrate how specific portions of the WORK shall be fabricated or installed; the terms shop drawings and submittals are synonymous.

R. Specifications shall mean a part of the Contract Documents consisting of written descriptions of a technical nature of materials, equipment, construction systems, standards, and workmanship.

S. Substantial completion shall have the meaning defined in the Contract Agreement.

T. Suppliers shall mean any person, supplier or organization who supplies materials or equipment for the WORK, including that fabricated to a special design, but who does not perform labor at the site.

U. WORK shall mean all (1) obligations, responsibilities and duties undertaken by the CONTRACTOR in order to successfully construct, complete, and operate (for Startup Completion) the Project, including all labor, materials, equipment and other incidentals, and the furnishing thereof, (2) Design and Engineering Services, (3) Training Services, and (4) Initial Operations, pursuant to the Contract Documents.

V. Written notice shall mean any notice to any party of the Agreement relative to any part of this Agreement in writing and considered delivered and the service thereof completed, when posted by certified or registered mail to the said party at his last given address, or delivered in person to said party of his authorized representative on the WORK.

W. Engineering Supplemental Information (ESI) shall mean written communications issued by the ENGINEER to the CONTRACTOR providing the CONTRACTOR with additional clarifications of the Contract Documents that the ENGINEER deem necessary to ensure the design intent.

X. Request for Information (RFI) shall mean written communications issued by the CONTRACTOR to the ENGINEER requesting additional information or clarification regarding a specific item in the Contract Documents.

1.03 CONTRACTOR'S RESPONSIBILITY

A. General: It is the responsibility of the CONTRACTOR and each SUBCONTRACTOR to visit the site and satisfy himself as to the various existing conditions affecting the WORK as required.

B. The CONTRACTOR shall coordinate the WORK of all crafts, trades, and SUBCONTRACTORS engaged in the WORK, and he shall have final responsibility in regard to the Schedule, workmanship, and completeness of each and all parts of the WORK.

C. All crafts, trades and SUBCONTRACTORS shall cooperate with each other and with others, as they may be involved in the installation of WORK, which adjoins, incorporates, precedes, or follows the WORK of another. It shall be the CONTRACTOR's responsibility to point out areas of cooperation prior to execution of SUBCONTRACTORS Agreements and the assignment of the parts of the WORK. Each craft, trade, and SUBCONTRACTOR shall be responsible to the CONTRACTOR for furnishing embedded items, giving directions for doing all cutting and fitting, making all provisions for accommodating the

WORK, and for protecting, patching, repairing, and cleaning as required to satisfactorily perform the WORK.

D. The CONTRACTOR shall be responsible for supervising all cutting, digging and other action of his SUBCONTRACTORS and workers. Where such action impairs the safety or function of any structure or component of the Project as determined by the ENGINEER, the CONTRACTOR shall make such repairs, alterations, and additions as will bring said structure or component back to its original design condition at no additional cost to the OWNER.

E. The CONTRACTOR is expected to be familiar with the General Requirements and all Sections of the detailed Specifications for all other trades and to study all Drawings applicable to his WORK to the end that complete coordination between the trades will be affected. CONTRACTOR shall submit the Request for Information (RFI) to the ENGINEER if conflicts exist within the Contract Documents.

F. Underground Utilities: The information shown on the drawings was obtained from drawings furnished by the OWNER, and surveys furnished to the OWNER. The CONTRACTOR shall make such investigation as deemed necessary to be satisfied as to the actual location, size, type of material, buried depth, and other factors relating to these services.

1.04 HOURS OF WORK

A. The hour of WORK shall be as defined in the Contract Documents.

1.05 PERMITS, FEES, AND SALES TAX

A. The CONTRACTOR shall submit the required fees, drawings, and application for the applicable permits prior to commencement of WORK.

B. A summary of potential permits are as follows:
1. SWPPP – NOI, BMP Plan & Monitoring Plan (State)
2. Encroachment Permits (City)
3. City of San Luis Business License

C. CONTRACTOR shall pay all sales tax applicable to the WORK.

1.06 PROTECTION OF WORK

A. CONTRACTOR shall provide all protection required to ensure that all WORK completed will not be harmed.

B. The CONTRACTOR may, at his option and expense, install any lawful security measures he deems necessary to protect his materials, equipment, or finished WORK. The type of security devices or quantity shall be the sole responsibility of the CONTRACTOR. The CONTRACTOR is to provide security and protect the project until the OWNER has occupied the space or the OWNER has accepted the space.

C. Protection:
   1. The CONTRACTOR shall be solely responsible for the protection of all materials and WORK.
   2. The CONTRACTOR shall include in his proposal the cost of any temporary partitions, sheathing, plastic covering, etc., as may be required to maintain affected areas. Remove all such temporary WORK at the proper time during the construction period and repair all damage related to same.
   3. The CONTRACTOR is solely responsible for the protection of the area in which WORK is being performed.
   4. Provide construction fencing as required in the Contract documents to secure the site.

1.07 PRIOR APPROVALS

A. If the CONTRACTOR wishes to use items of equipment and/or materials other than those identified in the drawings or specifications, a written request for approval shall be submitted to the ENGINEER prior to the confirmation of contract price. Any request submitted after this time are not under obligation to be accepted. Request from SUBCONTRACTORS will not be considered.

B. Proposed substitutions that have not received prior approval are undertaken at the CONTRACTOR's risk to be deemed equivalent during the construction submittal process.

C. Each request shall include all basic data and characteristics clearly legible. The specified item as well as the proposed item shall be formatted in such manner that a direct comparison can be readily made. ENGINEER shall not be required to perform research to accomplish the comparison. It is the bidder's responsibility to submit complete descriptive and technical information for the ENGINEER and OWNER to perform a complete and proper appraisal.
   a. For each equipment, the CONTRACTOR shall submit a Submittal Review Deposit, in the form of a certified bank check in the amount of $2,000 made payable to the OWNER. This deposit will be used for ENGINEER's review of substitute equipment. The ENGINEER's review time will be deducted at a rate of $170.00 per hour for reviewing substitution requests, regardless of whether the substitution is approved or rejected. The OWNER will return any unused funds to the petitioner within 30 days of the bid date.

D. If alternate manufacturers are accepted, the CONTRACTOR shall be responsible for any and all re-design or re-engineering required to accommodate alternate products. Wherever multiple acceptable products or manufacturers are listed in the Contract Documents, the first named product will constitute the design. Change order proposals that add cost to the project as the result of redesign requirements for alternate manufacturers, or as the result of alternate manufacturers that do not meet the requirements of the construction documents, will not be accepted.

1.08 FINAL DESIGN PLANS

A. The intent of the Final Design Plans is that the CONTRACTOR shall furnish all labor, materials, tools, equipment, and transportation necessary for the proper execution of the WORK in accordance with the Contract Documents and all incidental WORK necessary to complete the project in an acceptable manner, ready for use, occupancy, or operation by the OWNER.

B. The CONTRACTOR shall keep one set of the Final Design Plans on the site of the work. This set shall be kept current by the addition of all reviewed changes, addenda, and amendments thereto.

C. The Final Design Plans are intended to be explanatory to each other, but should any discrepancy appear or any misunderstanding arise as to the importance of anything contained in either, the CONTRACTOR shall obtain the necessary interpretation from the ENGINEER. Corrections of errors or omissions in the Final Design Plans may be made by the CONTRACTOR; when such corrections are necessary for the proper fulfillment of their intention. However, any changes or corrections to be performed after Notice to Proceed shall require the approval of both the ENGINEER and the CONTRACTOR.

D. All WORK or materials shown on the Plans and not mentioned in the Specifications, or any WORK specified and not shown on the Plans, shall be furnished, performed, and done by the CONTRACTOR as if same were both mentioned in the Specifications and shown on the Drawings. Conflicts or discrepancies within the plans and/or specifications and between the plans and specifications, the stricter interpretation shall apply unless approved by the ENGINEER of Record.

1.09 SUBMITTAL/SHOP DRAWINGS

A. See Section 01 3300 – Submittal Procedures

1.10 STANDARD SPECIFICATIONS

A. See Section 01 4219 – Reference Standards

1.11 SPECIFIC BRANDS, MAKERS OR MANUFACTURERS

A. Wherever in the Specifications one or more specific brands, makers or manufacturers are set out and qualified by the "or equal" clause, it is intended to denote the quality standard of the article desired, but unless otherwise noted does not restrict the CONTRACTOR to the specific brand, make or manufacturer.

1.12 "OR EQUAL" CLAUSE

A. Whenever the words "or approved equal," or "or equal," or "similar to," etc., appear in the Specifications, they shall be interpreted to mean an item of material or equipment that, in the opinion of the ENGINEER is similar to that named, suited to the same use, capable of performing the same function as that named, has a record of service equal to that named, and is equal in quality, capacity and/or efficiency to that named.

1.13 SAFETY

A. The CONTRACTOR shall take all necessary precautions and provide all necessary safeguards to prevent personal injury and property damage. The CONTRACTOR shall provide protection for all persons including but not limited to his employees and employees of other contractors or subcontractors; members of the public; and employees, agents, and representatives of the OWNER, and regulatory agencies that may be on or about the WORK. The CONTRACTOR shall provide protection for all public and private property including but not limited to structures, pipes, and utilities, above and below the ground.

B. The CONTRACTOR shall provide and maintain all necessary safety equipment such as fences, barriers, signs, lights, walkways, guards and fire prevention and fire-fighting equipment and shall take such other action as is required to fulfill his obligations under this Subsection and Contract documents.

C. The CONTRACTOR shall comply with all federal, state, and local laws, ordinances, rules and regulations and lawful orders of authorities having jurisdiction for the safety of persons and protection of property.

D. The CONTRACTOR shall designate a responsible member of his organization at the site whose duty shall be the prevention of accidents. This responsible person shall have the authority to take immediate action to correct unsafe or hazardous conditions and to enforce safety precautions and programs.

E. The CONTRACTOR shall submit a Construction Safety Plan as required by the Contract Documents.

1.14 MATERIALS REVIEW

A. Unless otherwise expressly provided on the Drawings or in any of the other Contract Documents, only new materials and equipment shall be incorporated in the WORK. All materials and equipment furnished by the CONTRACTOR to be incorporated in the WORK shall be subject to the review of the ENGINEER. No material shall be processed or fabricated for the WORK or delivered to the WORK site without prior concurrence of the ENGINEER.

B. Facilities and labor for the storage, handling, and inspection of all materials and equipment shall be the responsibility of the CONTRACTOR. Defective materials and equipment shall be identified to the ENGINEER and removed immediately from the site of the WORK.

C. If the ENGINEER so requires, either prior to or after commencement of the WORK, the CONTRACTOR shall submit samples of materials for such special tests, as the ENGINEER deems necessary to demonstrate that they conform to the Specifications.

1.15 FINAL CLEAN-UP

A. The WORK will not be considered as completed until all final clean-up has been done by the CONTRACTOR.

1.16 SEQUENCE OF CONSTRUCTION

A. CONTRACTOR shall submit a formal shop drawing review submittal for the Sequence of Construction Schedule to the OWNER & ENGINEER for their approval prior to the start of construction. The submittal shall indicate proposed methods and operations of all WORK, provide a detailed sequence of construction, expect number of working days to complete each sequence, and the required shut-off of existing equipment with the expected number of working days. The sequence of construction shall allow for the CONTRACTOR to conduct the WORK while ensure uninterrupted operation of the existing facility. The sequence of construction shall be updated weekly and presented at the weekly construction meeting.

1.17 SPECIAL TRAINING AND ACCESS REQUIREMENTS

A. Where required, the CONTRACTOR shall provide special training for employees and SUBCONTRACTORS working on the project within the limits of local jurisdiction or private entities.

PART 2 – PRODUCTS (Not Used)

PART 3 – EXECUTION (Not Used)

END OF SECTION

SECTION 01 1100 – SUMMARY OF WORK

PART 1 – GENERAL

1.01 THE REQUIREMENT

A. The WORK to be performed under this Contract shall consist of furnishing parts, tools, equipment, materials, supplies and manufactured articles, and furnishing all labor, transportation, and services, including fuel, power, water, and essential communications, and performing all work or other operations required for the fulfillment of the Contract in strict accordance with the Contract Documents. The WORK shall require that all work, materials, and services not expressly indicated or called for in the Contract Documents, which may be necessary for the complete and proper construction of the WORK in good faith shall be provided.

B. The WORK will conform to 2016 City of San Luis Supplemental to the 2015 MAG Uniform Standard Specifications and Details for Public Works Construction; City of Yuma Construction Standard Detail Drawings; MAG Uniform Standard Specifications and Details for Public Works Construction; and the City of Yuma Construction Standard Detail Drawings – Edition 2019. The most stringent will govern.

1.02 WORK COVERED BY CONTRACT DOCUMENTS

A. The WORK of this Contract comprises construction, installation, and/or upgrades of a new influent force main from the City of San Luis Lift Station 300 (LS300) to the City of San Luis West Wastewater Treatment Plant (WWTP) and modifications to the existing 8” and 12” influent force mains. The modifications and improvements shall include, but are not limited to the following:

1. The work shall include civil, mechanical, and structural work shown in the construction documents.
2. All work on this project will be coordinated with the City’s Engineering, Public Works, and the WWTP Operational staff;
3. The work shall consist of furnishing all labor, materials, equipment and supplies and performing all work necessary for the complete installation of the sewer force mains, including all specified testing.
4. Installation of sewer force main system shall include, but not limited to piping, valves, fittings, air combination valves, manhole clean-outs, and all related appurtenances as shown on the contract documents.
5. The work shall include all excavating, trenching, backfilling, and pavement restoration as specified in the contract documents.
6. The work shall include all construction sequencing to maintain operation of the existing force mains, including all by-pass for temporary or standby conditions.

B. The WORK includes obtaining any permits related or required by the Contract.

1.03 WORK BY OTHERS

A. Where two (2) or more Contracts are being performed at one time on the same Site or adjacent land in such manner that work under one (1) Contract may interfere with work under another, the sequence and order of the WORK in either or both Contracts to the agreement of both contracting entities shall be determined. When the Site of one (1) Contract is the necessary or convenient means of access for performance of work under another, the privilege of access or other reasonable privilege to the CONTRACTOR so desiring may be granted, to the extent, amount, and in manner and at a time that shall be determined. Conduct its operations to cause a minimum of interference with the work of such other contractors, and shall cooperate fully with such contractors to allow continued

safe access to their respective portions of the Site, as required to perform work under their respective contracts.

B. Interference with Work on Utilities: Cooperate fully with all utility forces or forces of other public or private agencies engaged in the relocation, altering, or otherwise rearranging of any facilities, which interfere with the progress of the WORK, and shall schedule the WORK to minimize interference with said relocation, altering or other rearranging of facilities. Any delays, reduction in work efficiency or hardships incurred shall be identified and resolved to the satisfaction of both parties.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION

SECTION 01 1400 – WORK RESTRICTIONS

PART 1 – GENERAL

1.01 LAND FOR WORK AND STORAGE

A. The OWNER will provide the lands upon which the work under this Contract is to be done or the necessary easements over said lands to include sufficient space for the proper execution of the work, together with right of access to same. The OWNER will provide the CONTRACTOR with information, which delineates and describes the lands owned and rights-of-way acquired. The OWNER shall provide land required for storage of construction materials and for any temporary construction facilities for the storage of equipment. The CONTRACTOR will furnish his own power and water supply unless otherwise specifically set out herein or in the contract documents.

B. CONTRACTOR shall designate and arrange for the use, a portion of the property adjacent to the WORK for its exclusive use during the term of the Contract as storage and shop area for its construction operations relative to this Contract.

C. Use of the Site shall be limited to its construction operations, including on-site storage of materials, on-site fabrication facilities and field offices.

D. All or part of the existing Site may be utilized during the entire period of construction for the conduct of normal operations. Cooperate and coordinate to facilitate operations and to minimize interference with the operations at the same time. In any event, access to the site during the period of construction shall be allowed.

E. All access to the site by the CONTRACTOR, SUBCONTRACTORS, workmen, material/equipment suppliers, etc., shall be via approved access locations as designated by the OWNER. All vehicular or equipment activity shall be strictly confined to the construction limits as indicated by OWNER.

F. Remove all temporary construction and temporary facilities at close of the job or when no longer needed.

1.02 WORK ON "PRIVATE PROPERTY"

A. Private property is defined as property other than that belonging to the OWNER. Highway and railroad rights-of-way, public parks, school yards and other such properties shall be considered "private properties" for the purpose of this Paragraph.

B. In connection with water line, sewer line, gas line or similar work performed on "private property," the CONTRACTOR shall confine his equipment, the storage of materials and the operations of his workman to the limits indicated on the Drawings, or to lands and rights-of-way provided for the Project by the OWNER, and shall take every precaution to avoid damage to the buildings, grounds and facilities of the OWNER or private property.

C. Fences, walls, hedges, shrubs, etc., shall be carefully removed, preserved, and replaced when the construction is completed. Grassed areas, other than lawns, shall be graded, fertilized, and seeded when construction is completed and in accordance with the requirements of the Technical Specifications. Where ditches or excavations cross lawns, the sod shall be removed carefully and replaced when the backfilling has been completed. If sod is damaged or not handled properly, it shall be replaced with new sod equal to existing sod at the CONTRACTOR’s expense. When construction is completed, the facilities and grounds of the OWNER’s property shall be restored to as good or better condition than found as quickly as possible at the CONTRACTOR’s expense.

D. When directed by the OWNER, large trees or other facilities that cannot be preserved and replaced shall be removed by the CONTRACTOR. The OWNER will assume the responsibility for settling with the property OWNER for the loss of said trees or facilities. The CONTRACTOR shall be solely and entirely responsible for any damage to all other trees or facilities.

E. Foundations, adjacent to where an excavation is to be made below the bottom of the foundation, shall be supported by shoring, bracing or underpinning as long as the excavation shall remain open, or thereafter if required to insure the stability of the foundation and the CONTRACTOR shall be held strictly responsible for any damage to said foundations.

F. All excavated materials and equipment to be incorporated in the Work shall be placed so as not to injure any part of the Work or existing facilities and so that free access can be had at all times to all parts of the Work and to all public utility installations in the vicinity of the Work. Materials and equipment shall be kept neatly piled and compactly stored in such locations as will cause a minimum of inconvenience to public travel and adjoining OWNERs, tenants, and occupants.

1.03 EXISTING UTILITIES

A. Special precautions shall be taken by the CONTRACTOR to avoid damage to existing overhead and underground utilities owned and operated by the OWNER or by other public or private utility companies.

B. Before proceeding with the Work, the CONTRACTOR shall confer with all public or private companies, agencies or departments that own and operate utilities in the vicinity of the Construction WORK. The purpose of the conference, or conferences, shall be to notify said companies, agencies, or departments of the proposed construction schedule, verify the location of, and possible interference with, the existing utilities that are shown on the Drawings, arrange for necessary suspension of service, and arrange to locate and avoid interference with all utilities (including house and any building connections) that are not shown on the Drawings.

C. Where existing utilities or appurtenant structures, either underground or above-ground, are encountered, they shall not be displaced or molested unless necessary, and in such case shall be replaced in as good or better condition than found as quickly as possible. Relocation and/or replacement of all utilities and appurtenant structures to accommodate the construction work shall be at cost to the OWNER, unless such relocation and/or replacement is by statute or agreement the responsibility of the CONTRACTOR.

1.04 TRAFFIC CONTROL

A. Traffic Control Plan: CONTRACTOR shall develop and a submit a Traffic Control Plan for the protection of traffic in public or private streets and ways, provide, place, and maintain all necessary barricades, traffic cones, warning signs, lights, steel plates, and other safety devices.

1. Traffic Control Plan shall conform to County and ADOT requirements. Traffic control plans shall be approved by the OWNER and the governing agencies prior to construction commencement.

2. Take all necessary precautions for the protection of the WORK and the safety of the public. Barricades and obstructions shall be illuminated at night and all lights shall be kept burning from sunset until sunrise. Station guards or flaggers may be required by the public authorities within their respective jurisdictions in order to conform to such special safety regulations relating to traffic control Signs, signals and barricades shall conform to the requirements Subpart G, Part 1926, of the OSHA Safety and Health Standards for Construction.
3. CONTRACTOR shall obtain encroachment permits, County Use Permit, and any other permits required for construction within the traffic cooridors.

B. HIGHWAY LIMITATIONS

Make investigation of the condition of available public and private roads and of clearances, restrictions, bridge load limits, and other limitations affecting transportation and ingress and egress to the site of the WORK.

C. TEMPORARY CROSSINGS

General: Continuous, unobstructed, safe, and adequate pedestrian and vehicular access shall be provided. Vehicular access to residential driveways shall be maintained to the property line.

D. STREET USE

Nothing herein shall be construed to entitle any entity to the exclusive use of any public street, alleyway, or parking area during the performance of the WORK hereunder, and it shall so conduct its operations as not to interfere unnecessarily with the authorized work of utility companies or other agencies in such streets, alleyways, or parking areas. No streets shall be closed to the public without first obtaining permission from the proper governmental authority. Where excavation is being performed in primary streets or highways, one lane in each direction shall be kept open to traffic at all times unless otherwise indicated. Toe boards shall be provided to retain excavated material if required by the ENGINEER or the agency having jurisdiction over the street or highway. Fire hydrants on or adjacent to the WORK shall be kept accessible to fire-fighting equipment at all times. Temporary provisions shall be made to assure the use of sidewalks and the proper functioning of all gutters, storm drain inlets and other drainage facilities.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION

SECTION 01 2000 – PRICE AND PAYMENT PROCEDURES

PART 1 – GENERAL

1.01 SECTION INCLUDES

A. Requirements for preparation, format, and submittal of Schedule of Values.

B. Procedures for preparation and submittal of applications for progress payments.

C. Documentation of changes in Contract Price and Contract Time.

D. Change procedures.

E. Correlation of CONTRACTOR submittals based on changes.

F. Procedures for preparation and submittal of application for final payment.

1.02 SCHEDULE OF VALUES

A. Prepare Schedule of Values identifying costs of Major Items of WORK and other costs shown in sample included at end of this Section.

B. Divide the Work into following Major Items of WORK and subdivide the Major Items that will complement not only the scope of the work, but the progress of work as well.

C. Assign prices and unit price to Items of Work which aggregate the Contract Price. Separate all major items with unit prices.

D. Submit preliminary schedule of values for ENGINEER's approval.

E. Submit corrected schedule of values within 10 days upon receipt of reviewed Schedule of Values, but no later than 10 days prior to anticipated submittal of first Application for Payment.

1.03 APPLICATIONS FOR PROGRESS PAYMENTS

A. Payment Period: Submit at intervals stipulated in the Agreement.

B. Electronic media printout including equivalent information will be considered in lieu of standard form specified; submit sample to ENGINEER for approval.

C. Forms filled out by hand will not be accepted.

D. For each item, provide a column for listing each of the following:
   1. Item Number
   2. Description of WORK
   3. Scheduled Values
   4. Previous Applications
   5. Work in Place and Stored Materials under this Application
   6. Authorized Change Orders
   7. Total Completed and Stored to Date of Application
   8. Percentage of Completion
   9. Balance to Finish
   10. Retainage

E. Execute certification by signature of authorized officer.

F. Use data from approved Schedule of Values. Provide dollar value in each column for each line item for portion of work performed and for stored products.

G. List each authorized Change Order as a separate line item, listing Change Order number and dollar amount as for an original item of Work.

H. Submit three copies of each Application for Payment.

I. Include the following with the application:
   1. Transmittal letter as specified for Submittals in Section 01 3300 – Submittal Procedures.
   2. Construction progress schedule, revised and current as specified in applicable Sections of Division 01 – General Requirements.
   3. Current construction photographs specified in in applicable Sections of Division 01 – General Requirements.
   4. Partial release of liens from major SUBCONTRACTORS and vendors.
   5. Sustainable design documentation applicable to work for which application is being made.
   6. Project record documents as specified in in applicable Sections of Division 01 – General Requirements, for review by OWNER which will be returned to the CONTRACTOR.
   7. Affidavits attesting to off-site stored products.

J. When ENGINEER requires substantiating information, submit data justifying dollar amounts in question. Provide one copy of data with cover letter for each copy of submittal. Show application number and date, and line item by number and description.

1.04 MODIFICATION PROCEDURES

A. Submit name of the individual authorized to receive change documents and who will be responsible for informing others in CONTRACTOR's employ or SUBCONTRACTOR of changes to the Contract Documents.

B. For minor changes not involving an adjustment to the Contract Price or Contract Time, ENGINEER will issue instructions directly to CONTRACTOR.

C. For other required changes, ENGINEER will issue a document signed by OWNER instructing CONTRACTOR to proceed with the change, for subsequent inclusion in a Change Order.
   1. The document will describe the required changes and will designate method of determining any change in Contract Price or Contract Time.
   2. Promptly execute the change.

D. For changes for which advance pricing is desired, ENGINEER will issue a document that includes a detailed description of a proposed change with supplementary or revised drawings and specifications, a change in Contract Time for executing the change with a stipulation of any overtime work required and the period of time during which the requested price will be considered valid. CONTRACTOR shall prepare and submit a fixed price quotation within 14 days.

E. CONTRACTOR may propose a change by submitting a request for change to ENGINEER, describing the proposed change and its full effect on the Work, with a statement describing the reason for the change, and the effect on the Contract Price and Contract Time with full documentation and a statement describing the effect on WORK by separate or other contractors. Document any requested substitutions.

F. Computation of Change in Contract Amount: As specified in the Agreement and Conditions of the Contract.
   1. For change requested by ENGINEER for work falling under a fixed price contract, the amount will be based on CONTRACTOR 's price quotation.
   2. For change requested by CONTRACTOR, the amount will be based on the CONTRACTOR 's request for a Change Order as approved by ENGINEER.
   3. For pre-determined unit prices and quantities, the amount will be based on the fixed unit prices.

4. For change ordered by ENGINEER without a quotation from CONTRACTOR, the amount will be determined by ENGINEER based on the CONTRACTOR's substantiation of costs as specified for Time and Material work.

G. Substantiation of Costs: Provide full information required for evaluation.
   1. On request, provide following data:
      a. Quantities of products, labor, and equipment
      b. Taxes, insurance, and bonds
      c. Overhead and profit
      d. Justification for any change in Contract Time
      e. Credit for deletions from Contract, similarly documented
   2. Support each claim for additional costs with additional information:
      a. Origin and date of claim
      b. Dates and times that work was performed, and by whom
      c. Time records and wage rates paid
      d. Invoices and receipts for products, equipment, and subcontracts, similarly documented
   3. For Time and Material work, submit itemized account and supporting data after completion of change, within time limits indicated in the Conditions of the Contract.

H. Execution of Change Orders: ENGINEER will issue Change Orders for signatures of parties as provided in the Conditions of the Contract.

I. After execution of Change Order, promptly revise Schedule of Values and Application for Payment forms to record each authorized Change Order as a separate line item and adjust the Contract Price.

J. Promptly revise progress schedules to reflect any change in Contract Time, revise sub-schedules to adjust times for other items of work affected by the change, and resubmit.

K. Promptly enter changes in Project Record Documents.

1.05 APPLICATION FOR FINAL PAYMENT

A. Prepare Application for Final Payment as specified for progress payments, identifying total adjusted Contract Price, previous payments, and sum remaining due.

B. Application for Final Payment will not be considered until the following have been accomplished:
   1. All closeout procedures specified in in applicable Sections of Division 01 – General Requirements.

SCHEDULE OF VALUES (Sample Only – Modify per project needs)							
No.	**Item**	**Payment**	**Measurement**	Est. Qty	Unit	Unit $	Value
1	Mobilization/ Demobilization/Bond/ Insurance	Payment shall be made for mobilization and demobilization to and from the site, for bonds and insurance. CONTRACTOR shall provide all the necessary mobilization requirements for the proper construction activities, include providing all the necessary accommodations for personnel and equipment as describe in these Specification. Bonds and insurance requirements shall meet the requirements of the Contract Documents.	Based on Representative Opinion that the item is complete.	#	LS	$_____	$_____
2	Earthwork for Grading, cut, fill, and export	Payment shall be made for the work associated with earthworks grading, cut, fill, and export of any excess material. Fill shall include screening, placement, and compaction of native material to meet the requirements of the Contract Documents. Excess material shall be screened and exported to a dedicated site per the contract. Excess material shall be spread evenly within the dedicated site by the CONTRACTOR. Screened material greater than 4” shall be disposed by the CONTRACTOR offsite.	Measurement shall be based on a cubic yard basis of material placed or excavated as shown on the drawings, specified in the contract documents. Original delivery tickets shall be delivered to the Representative at the end of each day. The Representative will create a chronological spreadsheet of the quantities and reconcile them with the CONTRACTOR after each weekly progress meeting. Requests for payment shall only include quantities that have been reconciled.	#	CY	$_____	$_____

4	Asphalt Pavement	Payment shall be made for asphalt road pavement as described in the Contract Documents. This includes the preparation and place of the hot-mix asphalt, binder, and base course where required.	Measurement shall be based on a cubic yard basis of material placed or excavated as shown on the drawings, specified in the contract documents. Original delivery tickets shall be delivered to the Representative at the end of each day. The Representative will create a chronological spreadsheet of the quantities and reconcile them with the CONTRACTOR after each weekly progress meeting. Requests for payment shall only include quantities that have been reconciled.	#	CY or Ton	$_____	$_____
12	Influent Force Main Replacement	Payment shall be made for site work associated with the installation of the new influent FM as described in the Contract Documents. The work shall include all pipes, fitting, and associated labor and materials required for the proper trenching, installation, and backfill of the pipes. This shall also include any potholing, pavement restoration, wire tracing and surveying of the required work.	Measurement shall be made based on linear feet of pipe installed and the breakdown shown on the CONTRACTOR's schedule of values as the items are completed and accepted by the Representative.	#	LF	$_____	$_____
14	Base Lump Sum	Payment shall be made for the work associated with the portion of the project not specifically included in the above bid schedule but required to be completed as part of the project as shown on the drawings, specified in the contract documents, and as required by the District. This includes all general conditions, civil, mechanical, structural, architectural, and electrical & controls work.	Measurement shall be made based on the breakdown shown on the CONTRACTOR's schedule of values as the items are completed and accepted by the Representative.	#	LS	$_____	$_____

15	**Total Lump Sum**					**$_____**

PART 2 – PRODUCTS – NOT USED

PART 3 – EXECUTION – NOT USED

END OF SECTION

SECTION 01 3216 – CONSTRUCTION PROGRESS SCHEDULES

PART 1 – GENERAL

1.01 SUMMARY

A. **Section Includes**: Preparation, submittal and maintenance of computerized progress schedule and reports, contract time adjustments and payment requests, including the following:
   1. Preliminary Schedule
   2. Baseline Schedule
   3. Schedule Updates
   4. Schedule Revisions

1.02 PRECONSTRUCTION SCHEDULING MEETING

A. General: Before issuance of Notice to Proceed, a pre-construction meeting shall be held at the location, date and time designated by ENGINEER and OWNER. This meeting shall be conducted by the ENGINEER and OWNER. Attendees shall include the ENGINEER, OWNER's representatives, General CONTRACTOR's project manager and field superintendent, and representatives from each subcontractor for the project as appropriate.

B. At the meeting, scheduling requirements shall be reviewed with CONTRACTOR. These include schedule preparation, reporting requirements, updates, revisions, and schedule delay analysis. CONTRACTOR shall present their schedule methodology, planned sequence of operations, and present their proposed activity coding structure.

1.03 CONSTRUCTION PROGRESS MEETINGS AND SCHEDULES

A. Weekly Progress meetings shall be held by the CONTRACTOR. All matters bearing on progress and performance of the work since preceding progress meeting shall be discussed and resolved including, without limitation, any previously unresolved matters, deficiencies in the work or methods being employed for the work, and problems, difficulties, or delays which may be encountered. CONTRACTOR shall keep records of the meetings and distribute to all party.

B. CONTRACTOR shall submit a Baseline Construction Schedule for ENGINEER and OWNER approval 14 days after Notice to Proceed. CONTRACTOR shall maintain a progress schedule based on the approved Baseline Construction Schedule that is updated weekly and shows progress and execution of work.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION

SECTION 01 3300 – SUBMITTAL PROCEDURES

PART 1 – GENERAL

1.01 WORK INCLUDED

A. Shop Drawing, Descriptive Literature, Project Data, and Samples (specifically, when Samples are requested) for all manufactured or fabricated items shall be Submitted by the CONTRACTOR. CONTRACTOR shall examine and review the Submittal to ensure that the information is in the form and in the manner required by the ENGINEER. The review of the Submittal by the ENGINEER shall not be construed as a complete check or approval, but will only indicate that the general method of construction and detailing is satisfactory. Review of such Submittal will not relieve the CONTRACTOR of the responsibility for any errors, which may exist. The CONTRACTOR shall be responsible for the dimensions and design of adequate connections, details and satisfactory of all WORK.

1.02 DEFINITIONS

A. The term "Submittals" shall mean shop drawings, manufacturer's drawings, catalog sheets, brochures, descriptive literature, diagrams, schedules, calculations, material lists, performance charts, test reports, office and field samples and items of similar nature, which are normally Submitted for the ENGINEER’s review for conformance with the Design Concept and compliance with the Contract Documents.

1.03 GENERAL CONDITIONS

A. Review by the ENGINEER of shop drawings or submittals of material and equipment shall not relieve the CONTRACTOR from the responsibilities of furnishing proper dimension, size, quantity, materials, and all performance characteristics to, efficiently perform the Requirements and intent of the Contract Documents. Review shall not relieve the CONTRACTOR responsibility for errors of any kind on the shop drawings. Review is intended only to assure conformance with the design concept of the Project and compliance with the information given in the Contract Documents. Review of shop drawings shall not be construed as releasing the CONTRACTOR from the responsibility of complying with the Contract Documents.

B. Do not consider Submittals as Contract Documents. Purpose of Submittals is to demonstrate how CONTRACTOR, to conform to the design concepts.

1.04 GENERAL REQUIREMENTS FOR SUBMITTALS

A. Shop drawings shall be prepared by a qualified detailer. Details shall be identified by reference to sheet and detail numbers shown on Contract Documents. Where applicable, show fabrication, layout, setting and erection details. Shop drawings are defined as original drawings prepared by the CONTRACTOR, SUBCONTRACTOR, vendor, suppliers, or distributors performing WORK under this Contract. Shop drawings illustrate some portion of the WORK and show fabrication, layout, setting or erection details of equipment, materials, and components. Shop drawings shall be folded to an approximate size of 8½-inch x 11-inch and in such manner that the title block will be located in the lower right-hand corner of the exposed surface.

B. Project data shall include manufacturer's standard schematic drawings modified to delete information, which is not applicable to the Project and shall be supplemented to provide additional information applicable to the Project. Each copy of descriptive literature shall be clearly marked to identify pertinent information as it applies to the Project.

C. Where samples are required, they shall be adequate to illustrate materials, equipment, or workmanship and to establish Standards by which completed WORK is judged. Provide sufficient size and quantity to clearly illustrate functional characteristics of product and material, with integrally related parts and attachment devices, along with a full range of color samples.

D. The CONTRACTOR shall review and check Submittals, indicating his review by initials and date.

E. If the Submittals deviate from the Contract Drawings and/or Specifications, the CONTRACTOR shall clearly identify the deviation and state any reasons for the deviation. The ENGINEER may approve a change. Any costs resulting from a change will be the responsibility of the CONTRACTOR.

F. Additional information on particular items, such as special drawings, schedules, calculations, performance curves and material details, shall be provided when specifically requested by the Technical Specifications.

G. Submittals for all electrically operated items (including instrumentation and controls) shall include complete wiring diagrams showing lead, runs, number of wires, wire size, color coding, all terminations and connections and coordination with related equipment.

H. Equipment shop drawings shall indicate all factory or shop paint coatings applied by suppliers, manufacturers, and fabricators; the CONTRACTOR shall be responsible for insuring the compatibility of such coatings with the field applied paint products and systems.

I. Fastener Specifications of manufacturer shall be indicated on equipment shop drawings.

J. No material shall be fabricated or shipped unless the applicable drawings or Submittals have been reviewed and approved by the CONTRACTOR and ENGINEER.

K. All bulletins, brochures, instructions, parts lists, and warranties packaged with and accompanying materials and products delivered to and installed in the Project shall be saved and transmitted to the ENGINEER for safe keeping and preparations of the Operation &Maintenance Manuals.

L. Quantity of the Vendor's Submittals shall be as required by the CONTRACTOR. At a minimum, a Vendor shall provide one (1) electronic PDF copy to the CONTRACTOR.

1.05 SUBCONTRACTOR or VENDOR RESPONSIBILITIES

A. Verify field measurements, field construction criteria, catalog numbers and similar data.

B. Coordinate each Submittal with requirements of WORK and Contract Documents.

C. Quantity of the SUBCONTRACTOR or Vendor's Submittals shall be as required by the CONTRACTOR. At a minimum, one (1) electronic PDF copy shall be provided to the CONTRACTOR.

1.06 CONTRACTOR RESPONSIBILITIES

A. Submit complete listing of all required shop drawing submittals by Specification Section to the ENGINEER.

B. Submit shop drawings, product data, samples, and other pertinent information in sufficient detail to show compliance with specified requirements.

C. Check, verity and revise Submittals as necessary to bring them into conformance with Contract Documents and actual field conditions.

1. Determine and verify quantities, dimensions, specified design and performance criteria, materials, catalog numbers and similar data.

2. Determine and verify that the equipment or product meets all aspect of the contract documents.
3. Coordinate Submittal with other Submittals and with the requirements of the Contract Documents.

D. After completion of checking, verification and revising, stamp, sign and date Submittals indicating review and approval and submit to ENGINEER.
1. Attach a copy of the corresponding specifications for the equipment or product and identify all deviations from the specifications, along with proposed corrective actions, clarifications, exemptions, etc. Submittals without accompanying specifications shall be rejected.
2. Stamp and signature indicate CONTRACTOR has satisfied shop drawing review responsibilities and constitutes written review of shop drawing with general conformance with the Contract Documents.
3. Shop drawings without CONTRACTOR written reviewed stamp and signature will be returned for resubmission.

E. **Shop Drawings:** Submit one electronic copy in PDF format. A PDF copy of the submittal will be returned with reviewer's comments.

F. **Product Data and Manufacturer's Instructions:** Submit on electronic copy in PDF format. Excise or cross out non-applicable information and clearly mark applicable information with citations to and terminology consistent with Contract Documents.
1. A PDF copy will be returned with reviewer's comments.

G. **Samples:** Submit two (2) samples labeled with reference to applicable Contract Documents. Label will be returned with reviewer's selection when appropriate, comments and stamp. Samples will not be returned unless return is requested in writing and additional samples are submitted.

H. **Special Samples:** Submit one (1) sample labeled with reference to applicable Contract Documents. Sample and one (1) label will be returned for installation in the WORK.

I. Assume risk expense and delays when proceeding with WORK related to required Submittals without review and acceptance.

J. **Deferred Submittals:** Submit any and all requested deferred submittals as required by the Building Permit or local governing agency. The deferred submittals may include but not be limited to trusses, bar joists, or above ground tanks.

1.07 ENGINEER'S RESPONSIBILITY

A. ENGINEER's review of shop drawings, samples or test procedures will be only for conformance with design concepts and for compliance with information given in Contract Documents.
1. ENGINEER's review does not extend to:
a. Accuracy of dimensions, quantities or performance of equipment and systems designed by CONTRACTOR, subcontractor, or Vendor.
b. CONTRACTOR or SUBCONTRACTOR means, methods, techniques, sequences, or procedures, except when specified, indicated on the Drawings, or required by Contract Documents.
c. Safety precautions or programs related to safety, which shall remain the sole responsibility of the CONTRACTOR and the SUBCONTRACTOR.

B. Except as may be provided in subsequent Specifications, a submittal will be returned within 30 days. When a Submittal cannot be returned within that period, ENGINEER will, within a reasonable time after receipt of the Submittals, give notice of the date by which that submittal will be returned.

C. For Submittals returned No Exceptions Taken – Submittal is considered in conformance with the design concept.

D. For Submittals returned Accepted with Correction Noted – Make Correction Noted/See all Comments, CONTRACTOR shall incorporate all review comments into the WORK, but resubmittal of an amended Submittal is not required.

E. For Submittals returned Submit Specific Item – CONTRACTOR shall develop a new Submittal package with materials, equipment, methods, etc. that meet the requirements of the Contract Documents for that specific item.

F. For Submittals returned Revised and Resubmit – Make Corrections Note/See All Comments, CONTRACTOR shall incorporate the review comments into a complete revised package and resubmit it for review.

G. For Submittals returned Rejected – See All Comments, CONTRACTOR shall develop a new Submittal package with materials, equipment, methods, etc. that meet the requirements of the Contract Documents.

H. For Submittals returned Submittal Not Reviewed, Filed for Record, no further action is required by the CONTRACTOR for this Submittal.

I. ENGINEER will be entitled to rely upon the accuracy or completeness of designs, calculations or certification made by licensed professionals accompanying a particular Submittal whether or not a stamp or seal is required by Contract Documents or Laws and Regulations.

J. Costs incurred by the ENGINEER, as a result, of additional reviews of a particular Submittal after the second time it has been reviewed shall be borne by CONTRACTOR. Reimbursement to ENGINEER will be made by issuance of a Change Order.

1.08 MINOR OR INCIDENTAL PRODUCTS AND EQUIPMENT SCHEDULES

A. Shop Drawings of minor or incidental fabricated products will not be required, unless requested.

B. Submit tabulated lists of minor or incidental products showing the names of the manufactures and catalog numbers, with Product Data and Samples, as required to, determine acceptability.

1.09 SUBMITTALS FOR INFORMATION OR RECORD ONLY

A. Submit three (3) copies of each. None will be returned.

B. **Mill Test Reports**:
   1. Submit three (3) certified copies of factory and mill test reports for record only. No copies will be returned.
   2. Do not incorporate Products in the WORK, which have not passed testing and inspection satisfactorily.
   3. Pay for mill and factory tests.

C. **Reinforcing Steel**:
   1. Submit reinforcing steel fabrication and setting drawings for information or record only. No copies will be returned.
   2. Note deviations and variations as specified for shop drawings.

PART 2 – PRODUCTS (Not Used)

PART 3 – EXECUTION (Not Used)

END OF SECTION

SECTION 01 3529 – HEALTH, SAFETY, AND EMERGENCY RESPONSE PROCEDURES

PART 1 – GENERAL

1.01 SUMMARY

A. Section Includes: Development and maintenance of a Construction Safety Plan.

1.02 REFERENCES

A. OSHA.

1.03 CONSTRUCTION SAFETY PLAN

A. Detail the Methods and Procedures to comply with Federal, State, and Local Health and Safety Laws, Rules and Requirements for the duration of the Contract Times. Include the following:
   1. Identification of the Certified or Licensed Safety Consultant who will prepare, initiate, maintain and supervise safety programs, and procedures.
   2. Procedures for providing workers with an awareness of safety and health hazards expected to be encountered in the course of construction.
   3. Safety equipment appropriate to the safety and health hazards expected to be encountered during construction. Include warning devices, barricades, safety equipment in public right-of-way and protected areas, and safety equipment used in multi-level structures.
   4. Methods for minimizing employees' exposure to safety and health hazards expected during construction.
   5. Procedures for reporting safety or health hazards.
   6. Procedures to follow to correct a recognized safety and health hazard.
   7. Procedures for investigation of accidents, injuries, illnesses and unusual events that have occurred at the construction site.
   8. Periodic and scheduled inspections of general work areas and specific work stations.
   9. Training for employees and workers at the jobsite.
   10. Methods of communication of safe working conditions, work practices and required personal protection equipment.

B. Assume responsibility for every aspect of Health and Safety on the jobsite, including the health and safety of SUBCONTRACTORS, suppliers, and other persons on the jobsite.
   1. Forward available information and reports to the Safety Consultant who shall make the necessary recommendations concerning worker health and safety at the jobsite.
   2. Employ additional health and safety measures specified by the Safety Consultant, as necessary, for workers in accordance with OSHA guidelines.

C. Transmit to OWNER and ENGINEER copies of reports and other documents related to accidents or injuries encountered during construction.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION

SECTION 01 4219 – REFERENCE STANDARDS

PART 1 – GENERAL

1.01 GENERAL

A. Titles of Sections and Paragraphs: Titles and Subtitles accompanying Specification Sections and paragraphs are for convenience and Reference only and do not form a part of the Specifications.

B. Applicable Publications: Whenever in these Specifications References are made to Published Specifications, Codes, Standards or other Requirements, it shall be understood that wherever no date is specified, only the latest Specifications, Standards or Requirements of the respective issuing agencies, which have been published as of the date that the Contract shall apply; except to the extent that said Standards or Requirements may be in conflict with applicable Laws, Ordinances or Governing Codes. No Requirements set forth in the Specifications or shown on the Drawings will be waived because of any provision of, or omission from, said Standards or Requirements.

C. Specialists, Assignments: In certain instances, Specification text requires (or implies) that specific WORK is to be assigned to specialists or expert entities, who must be engaged for the performance of that WORK. Such assignments shall be recognized as Special Requirements. These Requirements shall not be interpreted so as to conflict with the enforcement of Building Codes and similar Regulations Governing the WORK; also, they are not intended to interfere with Local Union Jurisdiction Settlements and similar conventions. Such assignments are intended to establish which party or entity involved in a specific unit of work is recognized as "Expert" for the indicated construction processes or operations. Nevertheless, the final responsibility for fulfillment of the entire set of Contract Requirements remains.

1.02 REFERENCE SPECIFICATIONS, CODES AND STANDARDS

A. Construct the WORK in accordance with the Contract Documents and the referenced portions of those Referenced Codes, Standards and Specifications.

B. Verify the following references agree with the plans and local requirements. All references listed are to the most recently approved and published edition.

References herein to "Building Code" shall mean International Building Code (IBC). Similarly, references to "Mechanical Code" or "International Mechanical Code," "Plumbing Code" or "Uniform Plumbing Code," "Fire Code" or "International Fire Code," shall mean International Mechanical Code (IMC), Uniform Plumbing Code (UPC) and International Fire Code (IFC). "Electric Code" or "National Electric Code (NEC)" shall mean the National Electric Code of the National Fire Protection Association (NFPA). The latest edition of the codes as approved by the Municipal Code and used by the local agency as of the date that the WORK is advertised for bids, as adopted by the agency having jurisdiction, shall apply to the WORK herein, including all Addenda, Modifications, Amendments, or other Lawful changes thereto.

C. In case of conflict between Codes, Reference Standards, Drawings, and the other Contract Documents, the most stringent Requirements shall govern. All conflicts shall be brought to the attention of the ENGINEER for clarification and directions prior to ordering or providing any materials or furnishing labor through the RFI process. The most stringent Requirements may be bid on.

D. All equipment and materials used on this project shall comply with the standards set forth in the American Iron and Steel Institute (AISI).

E. References herein to "OSHA Regulations for Construction" shall mean Title 29, Part 1926, Construction Safety and Health Regulations, Code of Federal Regulations (OSHA), including all changes and amendments thereto.

F. References herein to "OSHA Standards" shall mean Title 29, Part 1910, Occupational Safety and Health Standards (OSHA), Code of Federal Regulations, including all changes and Amendments thereto.

G. Applicable Standard Specifications: References in the Contract Documents to "Standard Specifications" or SSPWC shall mean the Standard Specifications for Public Works Construction.

1.03 REGULATIONS RELATED TO HAZARDOUS MATERIALS

A. Responsibility for all work included in the Contract Documents, regardless if shown or not, shall comply with all EPA, OSHA, RCRA, NFPA, and any other Federal, State, and Local Regulations governing the storage and conveyance of hazardous materials, including petroleum products.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION

SECTION 01 4500 – QUALITY CONTROL

PART 1 – GENERAL

1.01 THE REQUIREMENT

A. The Specific Quality Control Requirements for the WORK are indicated throughout the Contract Documents. The Requirements of this Section are primarily related to performance of the WORK beyond furnishing of manufactured products. The term "Quality Control" includes pre-activity inspection, follow up meetings, sampling and testing, and associated requirements.

B. All materials to be incorporated into the work shall be subject to sampling, testing, and approval as required by specifications.

1.02 INSPECTION AT PLACE OF MANUFACTURE

A. Unless otherwise indicated, all products, materials, and equipment shall be subject to inspection by the ENGINEER at the place of manufacture.

B. Unless noted otherwise, the presence of the ENGINEER at the place of manufacturer is not required; however, this shall not relieve responsibility for providing products, materials and equipment that comply with all requirements of the Contract Documents.

1.03 SAMPLING AND TESTING

A. Unless otherwise specified, samples and tests shall be made in accordance with either: The Standard Methods of AASHTO, ASTM, and/or ASME, which were in effect and published at the time of advertising for bids. The laboratory responsible for the test(s) shall furnish at least one copy of the test results to the CONTRACTOR, the ENGINEER, and to the appropriate material supplier.

1.04 INSPECTION AND TESTING SERVICE

A. Independent inspection and testing laboratory service shall comply with the following:
   1. Unless noted otherwise by the Specifications, an independent firm will be appointed and employed by the CONTRACTOR to perform inspection and testing, including soils and concrete testing.
   2. Perform inspections, testing, and other services as required.
   3. Submit Reports of Testing to the ENGINEER, CONTRACTOR and OWNER if required in duplicate, indicating observations and results of tests, and indicating compliance or non-compliance with Contract Documents.
   4. CONTRACTOR to notify 48 hours prior to the expected time for operations requiring inspection and laboratory testing services is required.
   5. The same independent firm on instructions shall perform retesting required because of non-conformance to requirements.
   6. For tests and samples required, arrangements shall be made with an independent firm for payment and scheduling of testing. Responsibility shall be taken for the cost of sampling and testing.
   7. Provide an overall report on inspection and test results for project closeout.
   8. All materials and/or equipment not conforming to the requirements of the Specifications, whether in place or not, will be rejected. Rejected materials and/or equipment shall be removed immediately from the site of work unless otherwise permitted by the ENGINEER. No rejected material and/or equipment, the defects of which have been subsequently corrected, shall be used until approved in writing by the ENGINEER. CONTRACTOR shall be responsible for re-testing of all rejected materials.

1.05 SPECIAL INSPECTION

A. Various categories for special inspection/ observation of work progress during the course of construction are listed, but not limited to specifications and notes in the drawings. The OWNER requires on-site observation of the work at these various stages prior to covering the work. A list of such special inspections will be reviewed at the Pre-Construction Conference and subsequent job meetings, and it is understood that the CONTRACTOR will not cover work until such observation has been completed. The OWNER and OWNER representatives will be responsible for reasonable cooperation with CONTRACTOR requests for observation of the work. The CONTRACTOR shall include anticipated observation requests at weekly update of scheduled activities. OWNER shall be responsible for retaining the services of an independent testing agency for special inspections.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.01 INSTALLATION

A. Inspection: Inspect materials or equipment upon arrival on the job site, prior to installation and reject damaged and defective items.

B. Measurements: Verify measurements and dimensions of the WORK, as an integral step of starting each installation.

C. Manufacturer's Instructions: Where installations include manufactured products, compliance with manufacturer's applicable instructions and recommendations for installation, to whatever extent these are more explicit or more stringent than applicable requirements indicated in Contract Documents is required.

END OF SECTION

SECTION 01 5713 – TEMPORARY EROSION AND SEDIMENT CONTROL

PART 1 – GENERAL

1.01 SECTION INCLUDES

A. Prevention of erosion due to construction activities.

B. Prevention of sedimentation of waterways, open drainage ways, and storm and sanitary sewers due to construction activities.

C. Restoration of areas eroded due to insufficient preventive measures.

1.02 REFERENCE STANDARDS: Most recently approved and published editions of:

ASTM D4355	Deterioration of Geotextiles by Exposure to Light, Moisture, and Heat in a Xenon Arc Type Apparatus
ASTM D4491	Water Permeability of Geotextiles by Permittivity
ASTM D4533	Trapezoid Tearing Strength of Geotextiles
ASTM D4632	Grab Breaking Load and Elongation of Geotextiles
ASTM D4751	Determining Apparent Opening Size of a Geotextile
ASTM D4873	Identification, Storage, and Handling of Geosynthetic Rolls and Samples
EPA (NPDES)	National Pollutant Discharge Elimination System (NPDES), Construction General Permit
FHWA FLP-94-005	Best Management Practices for Erosion and Sediment Control; Federal Highway Administration
USDA TR-55	Urban Hydrology for Small Watersheds; USDA Natural Resources Conservation Service

1.03 PERFORMANCE REQUIREMENTS

A. Perform all work and take all measures necessary to control soil erosion resulting from construction operations to prevent the flow of sediment from the site, to contain construction materials (including excavation and backfill), and to stabilize soil banks from erosion caused by stormwater flood zones so as to prevent damage to the adjacent water courses and to the project site.

B. Do not employ any construction method that violates a rule, regulation, guideline, or procedure established by Federal, State, or local agencies having jurisdiction over the environmental effects of construction.

C. Pollutants such as chemicals, fuels, lubricants, bitumen, raw sewage, and other harmful waste shall not be discharged into or alongside of any body of water or into natural or man-made channels leading thereto.

D. Prepare and submit a Stormwater Pollution Prevention Plan (SWPPP) to the ENGINEER for his records in accordance with ADEQ and with the plans as provided within the Construction Documents. The CONTRACTOR is responsible for all aspects of this plan, its monitoring, maintaining of the reports and keeping a copy of documents on site as required by ADEQ.

E. Prepare and submit a monitoring program and reporting plan to the ENGINEER for his records in accordance with ADEQ. Submit to the ENGINEER for his records on a monthly basis copies of the monitoring reports taken throughout the month.

F. Prepare and submit the Notice of Intent (NOI) as required by ADEQ. Submit Copy of NOI to the ENGINEER for his records.

G. Comply with all requirements of US Environmental Protection Agency for erosion and sedimentation control, as specified for the National Pollutant Discharge Elimination System (NPDES), Phases I and II, under requirements for the Construction General Permit (CGP), whether the project is required by law to comply or not.

H. Timing: Put preventive measures in place as soon as possible after disturbance of surface cover and before precipitation occurs.

I. Storm Water Runoff: Control increased storm water runoff due to disturbance of surface cover due to construction activities for this project.
   1. Prevent runoff into storm and sanitary sewer systems, including open drainage channels, in excess of actual capacity or amount allowed by authorities having jurisdiction, whichever is less.
   2. Anticipate runoff volume due to the most extreme short term and 24-hour rainfall events that might occur in 25 years.

J. Erosion on Site: Minimize wind, water, and vehicular erosion of soil on project site due to construction activities for this project.
   1. Control movement of sediment and soil from temporary stockpiles of soil.
   2. Prevent development of ruts due to equipment and vehicular traffic.
   3. If erosion occurs due to non-compliance with these requirements, restore eroded areas at no cost to OWNER.

K. Erosion Off Site: Prevent erosion of soil and deposition of sediment on other properties caused by water leaving the project site due to construction activities for this project.
   1. Prevent windblown soil from leaving the project site.
   2. Prevent tracking of mud onto public roads outside site.
   3. Prevent mud and sediment from flowing onto sidewalks and pavements.
   4. If erosion occurs due to non-compliance with these requirements, restore eroded areas at no cost to OWNER.

L. Sedimentation of Waterways on Site: Prevent sedimentation of waterways on the project site, including rivers, streams, lakes, ponds, open drainage ways, storm sewers, and sanitary sewers.
   1. If sedimentation occurs, install or correct preventive measures immediately at no cost to OWNER; remove deposited sediments; comply with requirements of authorities having jurisdiction.
   2. If sediment basins are used as temporary preventive measures, pump dry and remove deposited sediment after each storm.

M. Sedimentation of Waterways Off Site: Prevent sedimentation of waterways off the project site, including rivers, streams, lakes, ponds, open drainage ways, storm sewers, and sanitary sewers.
   1. If sedimentation occurs, install or correct preventive measures immediately at no cost to OWNER; remove deposited sediments; comply with requirements of authorities having jurisdiction.

N. Open Water: Prevent standing water that could become stagnant.

O. Maintenance: Maintain temporary preventive measures until permanent measures have been established.

1.04 SUBMITTALS

A. See Section 01 3300 – Submittal Procedures.

B. Stormwater Prevention Plan:
   1. Submit not less than 30 days prior to anticipated start of clearing, grading, or other work involving disturbance of ground surface cover.

2. Include:
    a. Site plan identifying soils and vegetation, existing erosion problems, and areas vulnerable to erosion due to topography, soils, vegetation, or drainage.
    b. Site plan identifying soils and vegetation, existing erosion problems, and areas vulnerable to erosion due to topography, soils, vegetation, or drainage.
    c. Site plan showing grading; new improvements; temporary roads, traffic accesses, and other temporary construction; and proposed preventive measures.
    d. Where extensive areas of soil will be disturbed, include storm water flow and volume calculations, soil loss predictions, and proposed preventive measures.
    e. Schedule of temporary preventive measures, in relation to ground disturbing activities.
    f. Other information required by law.
    g. Format required by law is acceptable, provided any additional information specified is also included.
    h. Obtain the approval of the Plan by authorities having jurisdiction.
    i. Obtain the approval of the Plan by OWNER.

C. Certificate: Mill certificate for silt fence fabric attesting that fabric and factory seams comply with specified requirements, signed by legally authorized official of manufacturer; indicate actual minimum average roll values; identify fabric by roll identification numbers.

D. Inspection Reports: Submit report of each inspection; identify each preventive measure, indicate condition, and specify maintenance or repair required and accomplished.

E. Maintenance Instructions: Provide instructions covering inspection and maintenance for temporary measures that must remain after Substantial Completion.

PART 2 – PRODUCTS

2.01 MATERIALS

A. Mulch: Use one of the following:
1. Straw or hay
2. Wood waste, chips, or bark
3. Erosion control matting or netting
4. Cutback asphalt
5. Polyethylene film, where specifically indicated only

B. Grass Seed for Temporary Cover: Select a species appropriate to climate, planting season, and intended purpose. If same area will later be planted with permanent vegetation, do not use species known to be excessively competitive or prone to volunteer in subsequent seasons.

C. Bales: Air dry, rectangular straw bales.
1. Cross Section: 14 by 18 inches, minimum.
2. Bindings: Wire or string, around long dimension.

D. Bale Stakes: One of the following, minimum 3 feet long:
1. Steel U- or T-section, with minimum mass of 1.33 lb. per linear foot.
2. Wood, 2 by 2 inches in cross section.

E. Silt Fence Fabric: Polypropylene geotextile resistant to common soil chemicals, mildew, and insects; non-biodegradable; in longest lengths possible; fabric including seams with the following minimum average roll lengths:
1. Average Opening Size: 30 US Std. Sieve, maximum, when tested in accordance with ASTM D4751.
2. Permittivity: 0.05 sec^-1, minimum, when tested in accordance with ASTM D4491.

3. Ultraviolet Resistance: Retaining at least 70 percent of tensile strength, when tested in accordance with ASTM D4355 after 500 hours exposure.
4. Tensile Strength: 100 lb-f, minimum, in cross-machine direction; 124 lb-f, minimum, in machine direction; when tested in accordance with ASTM D4632.
5. Elongation: 15 to 30 percent, when tested in accordance with ASTM D4632.
6. Tear Strength: 55 lb-f, minimum, when tested in accordance with ASTM D4533.
7. Color: Manufacturer's standard, with embedment and fastener lines preprinted.
8. Manufacturers:
   a. TenCate: www.tencate.com.
   b. North American Green: www.nagreen.com.
   c. Propex Geosynthetics: www.geotextile.com

F. Silt Fence Posts: One of the following, minimum 5 feet long:
1. Steel U- or T-section, with minimum mass of 1.33 lb per linear foot.
2. Softwood, 4 by 4 inches in cross section.
3. Hardwood, 2 by 2 inches in cross section.
4. Bank stabilization shall be durable UV resistant high performance turf reinforcement mats (HP TRMs). Tensile strength of 4000 lb/ft meets US EPA definition of a high performance TRM. Acceptable products are Pyramat or ENGINEER-approved equal.

PART 3 – EXECUTION

3.01 EXAMINATION

A. Examine site and identify existing features that contribute to erosion resistance; maintain such existing features to greatest extent possible.

3.02 PREPARATION

A. Schedule work so that soil surfaces are left exposed for the minimum amount of time.

3.03 SCOPE OF PREVENTIVE MEASURES

A. In all cases, if permanent erosion resistant measures have been installed temporary preventive measures are not required.

B. Construction Entrances: Traffic-bearing aggregate surface.
1. Width: As required; 20 feet, minimum.
2. Length: 50 feet, minimum.
3. Provide at each construction entrance from public right-of-way.
4. Where necessary to prevent tracking of mud onto right-of-way, provide wheel washing area out of direct traffic lane, with drain into sediment trap or basin.

C. Linear Sediment Barriers: Made of silt fences.
1. Provide linear sediment barriers:
   a. Along downhill perimeter edge of disturbed areas, including soil stockpiles.
   b. Along the top of the slope or top bank of drainage channels and swales that traverse disturbed areas.
   c. Along the toe of cut slopes and fill slopes.
   d. Perpendicular to flow across the bottom of existing and new drainage channels and swales that traverse disturbed areas or carry runoff from disturbed areas; space at maximum of 200 feet apart.
   e. Across the entrances to culverts that receive runoff from disturbed areas.
   f. Space sediment barriers with the following maximum slope length upslope from barrier:
      1) Slope of Less Than 2 Percent: 100 feet.
      2) Slope Between 2 and 5 Percent: 75 feet.

3) Slope Between 5 and 10 Percent: 50 feet.
4) Slope Between 10 and 20 Percent: 25 feet.
5) Slope Over 20 Percent: 15 feet.

D. Storm Drain Curb Inlet Sediment Trap: Protect each curb inlet using one of the following measures:
1. Filter fabric wrapped around hollow concrete blocks blocking entire inlet face area; use one piece of fabric wrapped at least 1-1/2 times around concrete blocks and secured to prevent dislodging; orient cores of blocks so runoff passes into inlet.
2. Straw bale row blocking entire inlet face area; anchor into pavement.

E. Storm Drain Drop Inlet Sediment Traps: As detailed on drawings.

F. Temporary Splash Pads: Stone aggregate over filter fabric; size to suit application; provide at downspout outlets and storm water outlets.

G. Soil Stockpiles: Protect using one of the following measures:
1. Cover with polyethylene film, secured by placing soil on outer edges.
2. Cover with mulch at least 4 inches thickness of pine needles, sawdust, bark, wood chips, or shredded leaves, or 6 inches of straw or hay.

H. Mulching: Use only for areas that may be subjected to erosion for less than 6 months.
1. Wood Waste: Use only on slopes 3:1 or flatter; no anchoring required.
2. Asphalt: Use only where no traffic, either vehicular or pedestrian, is anticipated.

I. Temporary Seeding: Use where temporary vegetated cover is required.

3.04 INSTALLATION

A. Traffic-Bearing Aggregate Surface:
1. Excavate minimum of 6 inches.
2. Place geotextile fabric full width and length, with minimum 12 inch overlap at joints.
3. Place and compact at least 6 inches of 1.5 to 3.5 inch diameter stone.

B. Silt Fences:
1. Store and handle fabric in accordance with ASTM D4873.
2. Where slope gradient is less than 3:1 or barriers will be in place less than 6 months, use nominal 16 inch high barriers with minimum 36-inch-long posts spaced at 6 feet maximum, with fabric embedded at least 4 inches in ground.
3. Where slope gradient is steeper than 3:1 or barriers will be in place over 6 months, use nominal 28-inch-high barriers, minimum 48-inch-long posts spaced at 6 feet maximum, with fabric embedded at least 6 inches in ground.
4. Where slope gradient is steeper than 3:1 and vertical height of slope between barriers is more than 20 feet, use nominal 32-inch-high barriers with woven wire reinforcement and steel posts spaced at 4 feet maximum, with fabric embedded at least 6 inches in ground.
5. Install with top of fabric at nominal height and embedment as specified.
6. Embed bottom of fabric in a trench on the upslope side of fence, with 2 inches of fabric laid flat on bottom of trench facing upslope; backfill trench and compact.
7. Do not splice fabric width; minimize splices in fabric length; splice at post only, overlapping at least 18 inches, with extra post.
8. Fasten fabric to wood posts using one of the following:
a. Four ¾-inch diameter, 1-inch long, 14-gauge nails.
b. Five 17-gauge staples with ¾-inch-wide crown and ½-inch legs.
c. Fasten fabric to steel posts using wire, nylon cord, or integral pockets.

d. Wherever runoff will flow around end of barrier or over the top, provide temporary splash pad or other outlet protection; at such outlets in the run of the barrier, make barrier not more than 12 inches high with post spacing not more than 4 feet.

C. Straw Bale Rows:
1. Install bales in continuous rows with ends butting tightly, with one bale at each end of row turned uphill.
2. Install bales so that bindings are not in contact with the ground.
3. Embed bales at least 4 inches in the ground.
4. Anchor bales with at least two stakes per bale, driven at least 18 inches into the ground; drive first stake in each bale toward the previously placed bale to force bales together.
5. Fill gaps between ends of bales with loose straw wedged tightly.
6. Place soil excavated for trench against bales on the upslope side of the row, compacted.

D. Mulching Over Large Areas:
1. Dry Straw and Hay: Apply 2-1/2 tons per acre; anchor using dull disc harrow or emulsified asphalt applied using same spraying machine at 100 gallons of water per ton of mulch.
2. Wood Waste: Apply 6 to 9 tons per acre.
3. Asphalt: Apply at 1200 gallons per acre.
4. Erosion Control Matting: Comply with manufacturer's instructions.

E. Mulching Over Small and Medium Areas:
1. Dry Straw and Hay: Apply 4 to 6 inches depth.
2. Wood Waste: Apply 2 to 3 inches depth.
3. Pine Needles: Apply 2 to 3 inches depth.
4. Asphalt: Apply ¼-gallon per square yard.
5. Erosion Control Matting: Comply with manufacturer's instructions.

F. Temporary Seeding:
1. When hydraulic seeder is used, seedbed preparation is not required.
2. When surface soil has been sealed by rainfall or consists of smooth undisturbed cut slopes, and conventional or manual seeding is to be used, prepare seedbed by scarifying sufficiently to allow seed to lodge and germinate.
3. If temporary mulching was used on planting area but not removed, apply nitrogen fertilizer at 1 pound per 1000 sq. ft.
4. On soils of very low fertility, apply 10-10-10 fertilizer at rate of 12 to 16 pounds per 1000 sq. ft.
5. Incorporate fertilizer into soil before seeding.
6. Apply seed uniformly; if using drill or cultipacker seeders place seed 1/2 to 1 inch deep.
7. Irrigate as required to thoroughly wet soil to depth that will ensure germination, without causing runoff or erosion.
8. Repeat irrigation as required until grass is established.

3.05 MAINTENANCE

A. Inspect preventive measures weekly, within 24 hours after the end of any storm that produces 0.5 inches or more rainfall at the project site, and daily during prolonged rainfall.

B. Repair deficiencies immediately.

C. Silt Fences:
   1. Promptly replace fabric that deteriorates unless need for fence has passed.
   2. Remove silt deposits that exceed one-third of the height of the fence.
   3. Repair fences that are undercut by runoff or otherwise damaged, whether by runoff or other causes.

D. Straw Bale Rows:
   1. Promptly replace bales that fall apart or otherwise deteriorate unless need has passed.
   2. Remove silt deposits that exceed one-half of the height of the bales.
   3. Repair bale rows that are undercut by runoff or otherwise damaged, whether by runoff or other causes.

E. Clean out temporary sediment control structures weekly and relocate soil on site.

F. Place sediment in appropriate locations on site; do not remove from site.

3.06 CLEAN UP

A. Remove temporary measures after permanent measures have been installed, unless permitted to remain by ENGINEER.

B. Clean out temporary sediment control structures that are to remain as permanent measures.

C. Where removal of temporary measures would leave exposed soil, shape surface to an acceptable grade and finish to match adjacent ground surfaces.

END OF SECTION

SECTION 01 5719 – TEMPORARY ENVIRONMENTAL CONTROLS

PART 1 – GENERAL

1.01 EXPLOSIVES AND BLASTING

A. The use of explosives on the WORK will not be permitted.

1.02 RUBBISH CONTROL

A. During the progress of the WORK, the CONTRACTOR shall keep the Site and other areas used by it in a neat and clean condition, and free from any accumulation of rubbish. Dispose of all rubbish and waste materials of any nature occurring at the Site, and shall establish regular intervals of collection and disposal of such materials and waste. Keep its haul roads free from dirt, rubbish and unnecessary obstructions resulting from its operations. Disposal of all rubbish and surplus materials shall be off the Site in accordance with local codes and ordinances governing locations and methods of disposal, and in conformance with all applicable safety laws, and to the particular requirements of Part 1926 of the OSHA Safety and Health Standards for Construction.

1.03 SANITATION

A. The CONTRACTOR shall provide adequate sanitary facilities for the use of those employed on the WORK. Such facilities shall be made available when the first employees arrive on the site of the WORK, shall be properly secluded from public observation, and shall be constructed and maintained during the progress of the Work in suitable numbers and at such points and in such manner as may be required.

B. The CONTRACTOR shall maintain the sanitary facilities in a satisfactory and sanitary condition at all times and shall enforce their use. He shall rigorously prohibit the committing of nuisances on the site of the WORK, on the lands of the OWNER, or on adjacent property.

C. Toilet Facilities: The CONTRACTOR shall provide fixed or portable chemical toilets wherever needed for the use of employees. Toilets at construction job sites shall conform to the requirements of Part 1926 of the OSHA Standards for Construction.

D. Sanitary and Other Organic Wastes: The CONTRACTOR shall establish a regular daily collection of all sanitary and organic wastes. All wastes and refuse from sanitary facilities provided or organic material wastes from any other source related to operations shall be disposed of away from the Site in accordance with all laws and regulations pertaining thereto.

1.04 CHEMICALS

A. All chemicals used or furnished by the CONTRACTOR for or during project construction, whether defoliant, soil sterilant, herbicide, pesticide, disinfectant, polymer, reactant or of other classification, shall show approval of either the U.S. Environmental Protection Agency or the U.S. Department of Agriculture. Use of all such chemicals and disposal of residues shall be in strict accordance with the printed instructions of the manufacturer.

1.05 CULTURAL RESOURCES

A. Attention is directed to the National Historic Preservation Act of 1966 (16 USC 470) and 36 CFR 800, which provides for the preservation of potential historical architectural, archaeological, or cultural resources (hereinafter called "cultural resources").

B. Conform to the applicable requirements of the National Historic Preservation Act of 1966 as it relates to the preservation of cultural resources.

C. In the event potential cultural resources are discovered during subsurface excavations at the site of construction, the following procedures shall be instituted:
   1. The CONTRACTOR shall issue a Field Order directive to cease all construction operations at the location of such potential cultural resources find.
   2. Such Field Order shall be effective until such time as a qualified archaeologist can be called to assess the value of these potential cultural resources and make recommendations to the State Historic Preservation Office.

D. If the archaeologist determines that the potential find is a bona fide cultural resource, at the direction of the State Historic Preservation Office, WORK shall be suspended at the location of the find under the provisions for changes contained in the Contractual Agreement.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION

SECTION 01 5726 – SITE WATERING FOR DUST CONTROL

PART 1 – GENERAL

1.01 DUST ABATEMENT

A. Preventative measures to limit the production of dust in amounts damaging to property, cultivated vegetation or domestic animals, or causing a nuisance to persons living in or occupying buildings in the vicinity shall be taken in to account. Responsibility for any damage resulting from dust originating from its operations shall be the CONTRACTOR's. The dust abatement measures shall be maintained at all times during construction of the project, in accordance with the requirements of Yuma County.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.01 GENERAL

A. The CONTRACTOR shall take necessary measures to control any and all dust related to or as a result of construction activities under this Contract. The water necessary for the dust control operation will be Owner furnished, beyond that the CONTRACTOR shall be responsible to provide whatever means necessary to accomplish the task of Dust Control. The CONTRACTOR shall be responsible for any damage resulting from dust originating from construction activities under this Contract.

END OF SECTION

SECTION 01 7113 – MOBILIZATION

PART 1 – GENERAL

1.01 THE REQUIREMENT

A. Mobilization shall include verification by the CONTRACTOR that all permits have been obtained; moving onto the site of all plant and equipment; furnishing and erecting plants, temporary buildings, and other construction facilities; and implementing security requirements; all as required for the proper performance and completion of the WORK. Mobilization shall include the following principal items:

1. Moving onto the site all materials and equipment required for first month operations
2. Installing temporary construction power, wiring and lighting facilities if applicable
3. Establishing a fire protection system as required.
4. Developing a construction water supply as required.
5. Providing field office trailers, complete with all specified furnishings and office supplies, including printer, scanner, and copying machine
6. Providing all on-site communication facilities including internet services with a minimum of 50 Mbps download and 5 Mbps upload speed.
7. Providing on-site sanitary facilities and potable water facilities
8. Arranging for and erection of work and storage yard
9. Obtaining all required permits for the project.
10. Comply with all OSHA required notices and establish a safety program
11. Having the superintendent or authorized representatives at the job site as required for execution of the work
12. Provide and implement an on-site Dust Control Plan.
13. Upon start of construction, the CONTRACTOR shall furnish and install a Project Identification Sign. The sign shall be painted by a professional experienced in sign painting. The paint used shall resist weathering and fading for the scheduled construction project duration. Two, 4”X4”X8’ supports shall be supplied by the CONTRACTOR. The project identification sign shall be securely bolted to the supports and shall be installed and located as directed by the OWNER. The CONTRACTOR shall repair the sign structure and supports as necessary for the duration of the project. The sign and supports shall be maintained in a neat and clean condition. The CONTRACTOR shall remove and properly dispose of the sign upon completion of the project. Costs associated with supplying, erecting, and maintaining the project identification sign shall be considered incidental to the contract and no separate payment will be allowed.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION

SECTION 01 7123 – FIELD ENGINEERING

PART 1 – GENERAL

1.01 SUMMARY

A. Section Includes: Field engineering to establish lines and grades for the WORK.

1.02 THE REQUIREMENT

A. The CONTRACTOR shall provide the surveying and staking control for the project. In addition, the CONTRACTOR shall provide the staking of the property and easement limits, clearing limits, influent and effluent lines, utilities, and excavation limits staking of structure corners with offsets as necessary for construction.

B. The CONTRACTOR shall provide all necessary staking following the OWNER initial staking as completed during the design of this project, as required to construct all items included in the plans and Scope of Work.

C. The CONTRACTOR shall survey the location of any underground utility line that the CONTRACTOR installs prior to backfilling. This shall include all joints, valves, structure, hydrants and services.

1.03 QUALITY ASSURANCE

A. Qualifications of Surveyor or Engineer: Registered civil engineer or land surveyor in state where Project is located.

B. Accuracy of stakes, alignments, and grades may be checked randomly by ENGINEER.
   1. Notice of when checking will be conducted will be given.
   2. When notice of checking is given, postpone parts of the Work affected by stakes, alignments or grades to be checked until checked.
   3. Do not assume that ENGINEER's check substitutes or complements required field quality control procedures.

1.04 CONSTRUCTION STAKES, LINES, AND GRADES

A. Execute the Work in accordance with the lines and grades indicated.

B. Make distances and measurements on horizontal planes, except elevations and structural dimensions.

1.05 SURVEY REFERENCE POINTS

A. Basic reference line, a beginning point on basic reference line, and a bench mark will be provided, by OWNER as defined in the Contract.

B. From these reference points, establish other control and reference points as required to properly lay out the Work.

C. Locate and protect control points prior to starting sitework, and preserve permanent reference points during construction.
   1. Make no changes or relocations without prior written notice.
   2. Replace Project control point, when lost or destroyed, in accordance with original survey control.

D. Set monuments for principal control points and protect them from being disturbed and displaced.
   1. Re-establish disturbed monuments.
   2. When disturbed, postpone parts of the Work that are governed by disturbed monuments until such monuments are re-established.

1.06 PROJECT SURVEY REQUIREMENTS

A. Assume responsibility for accuracy of stakes, alignments, and grades by performing verifications and checking in accordance with standard surveying practice.

B. Locate all utilities installed within the project prior to backfilling. Make a complete survey at the line, hub, or joint locations.

1.07 RECORD DOCUMENTS

A. Once the CONTRACTOR has reached substantial completion the CONTRACTOR will survey the site in preparation of Record Documents in conjunction with the CONTRACTORS supplied as-built as specified in the applicable Sections of Division 01 – General Requirements.

B. Carefully note all deviations or changes from the original drawings and maintain complete, accurate log of control points and survey.

C. Submit all utility locate information and surveyed information in hard copy and AutoCAD format.

D. Affix civil engineer's or land surveyor's signature and registration number to Record Drawing to certify accuracy of information shown.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.01 GENERAL

A. The CONTRACTOR shall provide the initial surveying and staking control for the project. In addition, the CONTRACTOR shall provide the initial staking of the property and easement limits, clearing limits, influent and effluent lines, utilities, and excavation limits staking of structure corners with offsets as necessary for construction.

B. The CONTRACTOR shall provide all required field survey as necessary to complete the work as defined in the contract.

END OF SECTION

SECTION 01 7700 – CLOSEOUT PROCEDURES

PART 1 – GENERAL

1.01 SUBSTANTIAL COMPLETION

A. Substantial completion is based on the guideline established in the Contract Documents.

B. CONTRACTOR shall submit written certification that the project construction phase is entering the substantial completion phase.

C. CONTRACTOR to submit all applicable certification and test results, including but not limited to:
   1. Pipe line pressure tests
   2. Geotechnical test
   3. Concrete Tests
   4. Certifications of all special inspections
   5. And any applicable test required by the contract documents

D. Submit list of major items to be completed or corrected but will not impact substantial completion.

E. Engineer will inspect within seven days after receipt of certification, together with a representative.

F. Should ENGINEER consider that work is substantially complete:
   1. Prepare, and submit to ENGINEER, a list of the items to be completed or corrected, as determined by on-site observation.
   2. Engineer will prepare and issue a Certificate of Substantial Completion, containing:
      a. Date of Substantial Completion.
      b. List of items to be completed or corrected, verified, and amended.
      c. The time required to complete or correct work of listed items.
      d. Responsibilities for:
         1) Insurance
         2) Utilities
         3) Operation of mechanical, electrical, and other systems
         4) Maintenance and cleaning
         5) Security
      e. Signatures of: ENGINEER
   3. Complete work listed for completion or correction, within designated time.

G. Should ENGINEER consider that work is not substantially complete:
   1. He shall immediately notify, in writing, stating reasons.
   2. Complete work, and send second written notice to ENGINEER, certifying that Project, or designated portion of project of substantially complete.
   3. ENGINEER will re-review work.

1.02 FINAL INSPECTION

A. Submit written certification that:
   1. Contract Documents have been reviewed.
   2. Project has been inspected for compliance with Contract Documents.
   3. Work has been completed in accordance with Contract Documents.
   4. Equipment and systems have been tested in presence of ENGINEER and are operational.
   5. Project is completed and ready for final inspection.

B. ENGINEER will make final on-site observation/review within seven (7) days after receipt of certification.

C. Should ENGINEER consider that work is finally complete in accordance with requirements of Contract Documents, he shall prepare and issue the following:
   1. Certificate of Completion;
   2. Complete sets of As-Builts received; and
   3. A Request to make Project Closeout submittals.

D. Should ENGINEER consider that work is not finally complete:
   1. He shall notify, in writing, stating reasons.
   2. Take immediate steps to remedy the stated deficiencies, and send second written notice to ENGINEER certifying that work is complete.
   3. ENGINEER will re-review the work.

1.03 FINAL CLEANING UP

A. The work will not be considered as completed and final payment made until all final cleanup has been done in a satisfactory manner. Reference applicable sections of Division 01 – General Requirements.

1.04 CLOSEOUT SUBMITTALS

A. Submit the following Closeout Submittals upon completion of the Work and at least 7 days prior to submitting Application for Final Payment:
   1. Evidence of Compliance and Closeout with Requirements of Governing Authorities
   2. Project Record Documents (As-built Drawings and Documentation)
   3. Operation and Maintenance Manuals
   4. Warranties and Bonds
   5. Keys and Keying Schedule
   6. Evidence of Payment and Release of Liens as outlined in Conditions of the Contract
   7. Release of claims as outlined in Conditions of the Contract
   8. Certificate of Final Completion

1.05 EVIDENCE OF COMPLIANCE WITH REQUIREMENTS OF GOVERNING AUTHORITIES

A. Submit the following:
   1. Authorization of Construction (by OWNER)
   2. APP Permit (by OWNER)
   3. 4.01 Permit (by OWNER)
   4. Yuma County Building Permit

1.06 PROJECT RECORD DOCUMENTS

A. Deliver record documents with the transmittal letter containing date, Project title, list of documents, and signature of the CONTRACTOR.

1.07 WARRANTIES AND BONDS

A. Provide executed Warranty or Guaranty Form if required by Contract Documents.

B. Provide specified additional warranties, guarantees, and bonds form manufacturers and suppliers.

1.08 CERTIFICATE OF FINAL COMPLETTION

A. When 7-day operational test has been successfully completed, ENGINEER will certify that new facilities are operationally complete. ENGINEER will submit a list of known items (punch list) still to be completed or corrected prior to contract completion.

B. List of items to be completed or corrected will be amended as items are resolved by Contractor.

C. When all items have been completed or corrected, submit written certification that the entire work is complete in accordance with the Contract Documents and request final inspection.

D. Upon completion of final inspection, ENGINEER will either prepare a written acceptance of the entire work or advise the Contractor of work not complete. If necessary, inspection procedures will be repeated.

1.09 FINAL APPLICATION FOR PAYMENT

A. Submit final applications in accordance with requirements of Contractual Agreement.

1.10 FINAL CERTIFICATE FOR PAYMENT

A. ENGINEER will issue final certificate in accordance with provisions of Contractual Agreement.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION

SECTION 01 7839 – PROJECT RECORD DOCUMENTS

PART 1 – GENERAL

1.01 RECORD DRAWINGS

A. The CONTRACTOR and its Subcontractors at the start of the project shall provide a clean set of Drawings and mark on them, in large writing “As Built.” This set of drawings will be kept at the job site trailer and used to indicate with a red pencil, pen or marker the “As Built” conditions of the project. These drawings will be updated as the work progresses to reflect the “As Built” conditions.

B. The CONTRACTOR shall be responsible to ensure that the “As Built” drawings are being kept up to date.

C. Upon substantial completion the CONTRACTOR shall obtain all “As Built” drawings and review them for accuracy and completeness, this includes surveying of utilities as required by applicable Sections of Division 01 – General Requirements. After the CONTRACTOR has reviewed and confirmed accuracy and completeness of the “As Built” drawings the CONTRACTOR shall submit the drawings and survey information to the ENGINEER of record.

1. All survey as-built information shall be submitted to the ENGINEER in AutoCAD format.

D. Upon receipt of the “As Built” drawings the ENGINEER shall make all necessary changes to the documents and provide a Record Drawing set to the CONTRACTOR for their use and distribution as required for project closeout, as required by applicable Sections of Division 01 – General Requirements.

1.02 PHOTO DOCUMENTATION

A. Images must be created using only digital photographic equipment. Camera should be capable of utilizing a moderate wide-angle lens system and have electronic flash capable of properly illuminating a large interior space. Digital images shall be saved in JPEG format and properly labeled.

B. Digital copies shall be provided for OWNER and ENGINEER by CONTRACTOR at each weekly progress meeting.

C. Saved images shall include detailed photograph description along with month, day, and year and separated by treatment process.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION

SECTION 02 0100 – MAINTENANCE OF EXISTING CONDITIONS

PART 1 – GENERAL

1.01 THE REQUIREMENT

A. The WORK of this Section, as defined in the Contract, includes all work necessary to satisfactorily prepare the site as shown on the accepted drawings and as specified herein. Following this preparation, the site shall be in such a condition as to easily continue with the next operation whether it be excavating, backfilling, or any other operations that are a part of the project. Site preparation includes clearing, grubbing, grading, tree and shrub removal, native grass stripping and removing and disposing of all debris within the limits of the project and such other areas as may be indicated on the plans or required work, except such objects as are designated to remain or are to be removed in accordance with the plans. This work shall also include the preservation from injury or defacement of all vegetation and objects designated to remain.

B. Related Sections: The work shall conform to the applicable Sections of the Divisions in these Specifications:
   1. Division 01 – General Requirements
   2. Division 31 – Earthwork

C. Soils Report: This work shall conform to the requirements of the latest Geotechnical Evaluation.

1.02 SUBMITTALS

A. Submittals shall be made in accordance with Section 01 3300 – Submittal Procedures.

B. Shop Drawings: Submit clearing limits, staging, and site access plans and limits.

1.03 SITE SURVEY AND LAYOUT

A. The CONTRACTOR shall establish construction, and clearing limits by providing the initial site survey and field staking. The initial staking will include property line limits, casements and access points and structure locations with 100-ft. offsets. The OWNER shall provide the contractor the survey data for the project to include the survey control points, hubs, etc., and benchmarks for the site. The contractor shall layout required construction staking as defined in the applicable Sections of Division 01 – General Requirements.

1.04 PERMITS

A. Verify all required permits have been secured for this work. Comply with applicable local Air Pollution Control requirements. In the absence of specific ordinances, periodic watering shall be done to control dust throughout the work. Make all necessary arrangements for water required for this work.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.01 PRIMARY SITE ACCESS

A. The CONTRACTOR shall provide clearing, grubbing, and stripping as defined in the contract.

B. The CONTRACTOR shall develop any necessary access to the Site, including access entrance barriers to prohibit entry of unauthorized persons as defined in the Contract. The contractor shall provide at the project site access barriers to prohibit entry of unauthorized persons as defined in the Contract.

C. Adequately support existing structures, sidewalks, slabs, pavements, utilities, and other facilities that may be affected by the proposed construction as defined in the Contract.

D. Utility Interference: Where existing utilities interfere with the WORK, notify the utility owner before proceeding in accordance with the General Conditions.

3.02 CLEARING, GRUBBING AND STRIPPING

A. The CONTRACTOR shall perform this work as defined in the Geotechnical Evaluation and or Soils Report.

B. Construction areas shall be cleared of grass and weeds to at least a depth of 1 inch and cleared of structures, pavement, sidewalks, concrete or masonry debris, trees, logs, upturned stumps, loose boulders, and any other objectionable material of any kind which would interfere with the performance or completion of the WORK, create a hazard to safety, or impair the subsequent usefulness of the WORK, or obstruct its operation. Trees and other natural vegetation outside the actual lines of construction shall be protected from damage during construction.

C. Within the limits of clearing, the areas below the natural ground surface shall be grubbed to a depth necessary to remove all stumps, roots, buried logs and all other objectionable material. Septic tanks, drain fields, and connection lines and any other underground structures, debris or waste shall be removed if found on the Site. All objectionable material from the clearing and grubbing process shall be removed from the Site and wasted in approved safe locations.

3.03 OVEREXCAVATION, REGRADING AND BACKFILL UNDER FILL AREAS

A. All grading and excavation shall conform to the requirements of the Geotechnical Evaluation and or Soils Report.

3.04 EXISTING UTILITY SERVICES

A. At start of work, CONTRACTOR shall locate and identify all utility services within the construction limits (both underground and overhead). Utilize underground utilities locating services as required, including potholing if necessary.

B. CONTRACTOR shall disconnect or reroute all existing services, where such services will be affected by construction operations. Comply with all instructions issued during the pre-construction conference regarding coordination, advance notice, emergency repairs, etc.

C. All DISCONNECTIONS OR TERMINATIONS SHALL BE PERFORMED IN SAFE MANNER, IN ACCORDANCE WITH APPLICABLE CODES AND REGULATIONS. PROVIDE ANY DISCONNECTS SWITCHES, VALVES, PLUGS, TEES, ETC., AS REQUIRED FOR THE VARIOUS LOCATIONS.

END OF SECTION

SECTION 02 4000 – DEMOLITION AND STRUCTURE MOVING

PART 1 – GENERAL

1.01 REQUIREMENT

A. Items required to be removed:
   1. Reference plans for existing items to be removed. Removable items may include, but are not limited to concrete paving, asphaltic concrete pavement, base courses, manholes, and pipes.

1.02 REGULATORY REQUIREMENTS

A. Conform to applicable codes for disposal of debris.

B. Coordinate removal work with utility companies or appropriate party.

PART 2 – PRODUCTS – NOT USED

PART 3 – EXECUTION

3.01 PREPARATION

A. Obtain advance approval from ENGINEER for dimensions and limits of removal work.

B. Identify known utilities below grade. Stake and flag locations.

3.02 PROTECTION

A. Protect following from damage or displacement:
   1. Adjacent public and private property.
   2. Trees, plants, and other landscape features designated to remain.
   3. Utilities designated to remain.
   4. Pavement and utility structures designated to remain.
   5. Bench marks, monuments, and existing structures designated to remain.

3.03 REMOVALS

A. Remove pavements and structures by methods that will not damage underground utilities. Do not use drop hammer near existing underground utilities.

B. Minimize amount of earth loaded during removal operations.

C. Where existing pavement is to remain, make straight saw cuts in existing pavement to provide clean breaks prior to removal. Do not break concrete pavement or base with drop hammer unless concrete or base has been saw cut to minimum depth of 2 inches.

D. When street and driveway saw cut location is greater than one-half of pavement lane width, remove pavement for full lane width or to nearest longitudinal joint as directed by ENGINEER.

E. Remove sidewalks and curbs to nearest existing dummy, expansion, or construction joint.

F. Unless noted otherwise or indicated in the Contract Documents, existing ends of pipe culverts or end of sewers which are to remain, shall have an 8-inch-thick masonry plug in pipe installed in the end of the pipe prior to backfill, with the backfill constructed in accordance with requirements of the applicable Sections of Division 31 – Earthwork.

3.04 BACKFILL

A. Backfill of removal areas shall be in accordance with requirements of these Specifications.

3.05 DISPOSAL

A. Inlet frames, grates, and plates; and manhole frames and covers, may remain City property. Disposal shall be in accordance with requirements these Specifications.

B. Remove from site, debris resulting from work under this section in accordance with requirements of these Specifications.

END OF SECTION

SECTION 03 2000 – CONCRETE REINFORCING

PART 1 – GENERAL

1.01 THE REQUIREMENT

A. Furnish, fabricate, and place all concrete reinforcement steel, welded wire fabric, couplers, and concrete inserts for use in reinforced concrete construction and perform all appurtenant work, including installation of all the wires, clips, supports, chairs, spacers, and other accessories, all in accordance with the Contract Documents.

B. American Iron and Steel (AIS) requirement applies to this section. All iron and steel products used in this project must be produced in the United States.

1.02 REFERENCE SPECIFICATIONS, CODES AND STANDARDS

A. Codes: Codes: All codes, as referenced herein are specified in applicable Sections of Division 01 – General Requirements.

B. Commercial Standards:

ACI 315	Details and Detailing of Concrete Reinforcement
ACI 318	Building Code Requirements for Reinforced Concrete
CRSI MSP-1	Concrete Reinforcing Steel Institute Manual of Standard Practice
AWS D1.4	Structural Welding Code - Reinforcing Steel
ASTM A82	Steel Wire, Plain, for Concrete Reinforcement
ASTM A615	Deformed and Plain Billet-Steel Bars for Concrete Reinforcement
ASTM A775	Epoxy-Coated Reinforcing Steel Bars

1.03 SUBMITTALS

A. Submittals shall be furnished in accordance with Section 01 3300 – Submittal Procedures.

B. Submittals shall include shop bending diagrams, placing lists, drawings of all reinforcement steel prior to fabrication and mill test reports.

C. Details of the concrete reinforcement steel and concrete inserts shall be submitted at the earliest possible date after receipt by the CONTRACTOR of the Notice to Proceed. Said details of reinforcement steel for fabrication and erection shall conform to ACI 315 and the requirements specified and shown. The shop bending diagrams shall show the actual lengths of bars, to the nearest inch measured to the intersection of the extensions (tangents for bars of circular cross-section) of the outside surface. The shop drawings shall include bar placement diagrams, which clearly indicate the dimensions of each bar splice.

D. Where mechanical couplers are required or permitted to be used to splice reinforcement steel, submit manufacturer's literature which contains instructions and recommendations for installation for each type of coupler used; certified test reports which verify the load capacity of each type and size of coupler used; and shop drawings which show the location of each coupler with details of how they are to be installed in the formwork.

E. If reinforcement steel is spliced by welding at any location, submit mill test reports, which shall contain the information necessary for the determination of the carbon equivalent as specified in AWS D1.4. Submit a written welding procedure for each type of weld for each size of bar which is to be spliced by welding; merely a statement that AWS procedures will be followed is not acceptable.

F. Submit all reinforcing product mill certificates.

1.04 QUALITY ASSURANCE

A. If requested by the ENGINEER, the CONTRACTOR shall provide samples from each heat of reinforcement steel delivered in a quantity adequate for testing. Costs of all tests will be paid by the CONTRACTOR.

B. If reinforcement steel is spliced by welding at any location, the CONTRACTOR shall submit certifications of procedure qualifications for each welding procedure used and certification of welder qualifications, for each welding procedure, and for each welder performing the work. Such qualifications shall be as specified in AWS D1.4.

C. If requested by the ENGINEER, the CONTRACTOR shall provide samples of each type of welded splice used in the WORK in a quantity and of dimensions adequate for testing. At the discretion of the ENGINEER, radiographic testing of direct butt-welded splices will be performed. The CONTRACTOR shall assist as necessary to facilitate testing. The CONTRACTOR shall repair any weld, which fails to meet the requirements of AWS D1.4. The costs of testing will be paid by the CONTRACTOR.

PART 2 – PRODUCTS

2.01 REINFORCEMENT STEEL

A. Reinforcement Steel for all cast-in-place reinforced concrete construction shall conform to the following requirements:
   1. Bar reinforcement shall conform to the requirements of ASTM A615 for Grade 60 Billet Steel Reinforcement or as otherwise shown.
   2. Welded wire fabric reinforcement shall conform to the requirements of ASTM A185 and the details shown; provided, that welded wire fabric with longitudinal wire of W4 size wire and smaller shall be either furnished in flat sheets or in rolls with a core diameter of not less than 10 inches; and provided further, that welded wire fabric with longitudinal wires larger than W4 size shall be furnished in flat sheets only.
   3. Spiral reinforcement shall be cold-drawn steel wire conforming to the requirements of ASTM A82.

B. Accessories:
   1. Accessories shall include all necessary chairs, slab bolsters, concrete blocks, tie wires, dips, supports, spacers, and other devices to position reinforcement during concrete placement. All bar supports shall meet the requirements of the CRSI Manual of Standard Practice including special requirements for supporting epoxy coated reinforcing bars. Wire bar supports shall be CRSI Class 1 for maximum protection with a 1/8-inch minimum thickness of plastic coating, which extends at least ½-inch from the concrete surface. Plastic shall be gray in color.
   2. Concrete blocks (dobies), used to support and position reinforcement steel, shall have the same or higher compressive strength as specified for the concrete in which it is located. Wire ties shall be embedded in concrete block bar supports.

C. Epoxy coating for reinforcing and accessories, where specified or shown, shall conform to ASTM A775.

2.02 MECHANICAL COUPLERS

A. Mechanical couplers shall be provided where shown and where approved by the ENGINEER. The couplers shall develop a tensile strength, which exceeds 125% of the yield strength of the reinforcement bars being spliced at each splice.

B. Where the type of coupler used is composed of more than one component, all components required for a complete splice shall be supplied. This shall apply to all mechanical splices, including those splices intended for future connections.

C. The reinforcement steel and coupler used shall be compatible for obtaining the required strength of the connection. Straight threaded type couplers shall require the use of the next larger size reinforcing bar or shall be used with reinforcing bars with specially forged ends which provide upset threads which do not decrease the basic cross section of the bar.

D. Couplers shall be Lenton Form Saver as manufactured by Erico Products; Dowel Bar Splicer System as manufactured by Richmond Screw Anchor Company; or ENGINEER-approved equal.

2.03 WELDED SPLICES

A. Welded splices shall be provided where shown and where approved by the ENGINEER. All welded splices of reinforcement steel shall develop a tensile strength, which exceeds 125% of the yield strength of the reinforcement bars, which are connected.

B. All materials required to conform the welded splices to the requirements of AWS D1.4 shall be provided.

2.04 EPOXY GROUT

A. Epoxy for grouting reinforcing bars shall be specifically formulated for such application, for the moisture condition, application temperature and orientation of the hole to be filled. Epoxy grout shall meet the requirements of these Specifications.

PART 3 – EXECUTION

3.01 GENERAL

A. All reinforcement steel, welded wire fabric, couplers and other appurtenances shall be fabricated, and placed in accordance with the requirements of the Building Code and the Supplementary Requirements specified herein.

3.02 FABRICATION

A. General:
   1. Reinforcement steel shall be accurately formed to the dimensions and shapes shown, and the fabricating details shall be prepared in accordance with ACI 315 and ACI 318, except as modified by the Contract Drawings. Stirrups and tie bars shall be bent around a pin having a diameter not less than 1½-inch for No. 3 bars, 2-inch for No. 4 bars, and 2½-inch for No. 5 bars. Bends for other bars shall be made around a pin having a diameter not less than 6 times the bar diameter, except for bars larger than 1-inch, in which case the bends shall be made around a pin of 8 bar diameters. Bars shall be bent cold.
   2. The CONTRACTOR shall fabricate reinforcement bars for structures in accordance with bending diagrams, placing lists, and placing drawings. Said drawings, diagrams and lists shall be prepared by the CONTRACTOR as specified under Section 01 3300 – Submittal Procedures.

B. Fabricating Tolerances: Bars used for concrete reinforcement shall meet the following requirements for fabricating tolerances:
   1. Sheared length: +/- 1-inch
   2. Depth of truss bars: + 0, - ½-inch
   3. Stirrups, ties, and spirals: +/- ½-inch
   4. All other bends: +/- 1-inch

3.03 PLACING

A. Reinforcement steel shall be accurately positioned as shown, and shall be supported and wired together to prevent displacement, using annealed iron wire ties or suitable clips at intersections. All reinforcement steel shall be supported by concrete, plastic or metal supports, spacers or metal hangers, which are strong and rigid enough to prevent any displacement of the reinforcement steel. Where concrete is to be placed on the ground, supporting concrete blocks (or dobies) shall be used, in sufficient numbers to support the bars without settlement, but in no case shall such support be continuous. All concrete blocks used to support, reinforcement steel shall be tied to the steel with wire ties, which are embedded in the blocks. For concrete over formwork, the CONTRACTOR shall furnish concrete, metal, plastic or other acceptable bar chairs and spacers.

B. Limitations on the use of bar support materials shall be as follows:
   1. Concrete Dobies: Permitted at all locations except where architectural finish is required.
   2. Wire Bar Supports: Permitted only at slabs over dry areas, interior dry wall surfaces and exterior wall surfaces.
   3. Plastic Bar Supports: Permitted at all locations except on grade.

C. Tie wires shall be bent away from the forms in order to provide the specified concrete coverage.

D. Bars additional to those shown which may be found necessary or desirable by the ENGINEER for the purpose of securing reinforcement in position shall be provided by the CONTRACTOR at its own expense.

E. Unless otherwise specified, reinforcement placing tolerances shall be within the limits specified in Section 7.5 of ACI 318 except where in conflict with the requirements of the Building Code.

F. Bars may be moved as necessary to avoid interference with other reinforcement steel, conduits, or embedded items. If bars are moved more than one bar diameter, or enough to exceed the above tolerances, the resulting arrangement of bars shall be as acceptable to the ENGINEER.

G. Accessories supporting reinforcing bars shall be spaced such that there is no deflection of the accessory from the weight of the supported bars. When used to space the reinforcing bars from wall forms, the forms and bars shall be located so that there is no deflection of the accessory when the forms are tightened into position.

3.04 SPACING OF BARS

A. The clear distance between parallel bars (except in columns and between multiple layers of bars in beams) shall be not less than the nominal diameter of the bars nor less than 1-1/3 times the maximum size of the coarse aggregate, nor less than 1-inch.

B. Where reinforcement in beams or girders is placed in two (2) or more layers, the clear distance between layers shall be not less than one inch.

C. In columns, the clear distance between longitudinal bars shall be not less than 1½ times the bar diameter, nor less than 1½ times the maximum size of the coarse aggregate, nor less than 1½ inches.

D. The clear distance between bars shall also apply to the distance between a contact splice and adjacent splices or bars.

3.05 SPLICING

A. General:
   1. Reinforcement bar splices shall only be used at locations shown. When it is necessary to splice reinforcement at points other than where shown, the character of the splice shall be as acceptable to the ENGINEER.
   2. Unless, otherwise indicated, dowels shall match the size and spacing of the spliced bar.

B. Splices of Reinforcement:
   1. The length of lap for reinforcement bars, unless otherwise shown shall be in accordance with ACI 318-89, Section 12.15.1 for a Class B splice.
   2. Splices in column spiral reinforcement, when necessary, shall be made by welding or by a lap of 1½ turns.

C. Bending or Straightening: Reinforcement shall not be straightened or re-bent in a manner, which will injure the material. Bars with kinks or bends not shown shall not be used. All bars shall be bent cold, unless otherwise permitted by the ENGINEER. No bars partially embedded in concrete shall be field-bent except as shown or specifically permitted by the ENGINEER.

D. Couplers, which are located at a joint face, shall be a type, which can be set either flush or recessed from the face. The couplers shall be sealed during concrete placement to completely eliminate concrete or cement paste from entering. Couplers intended for future connections shall be recessed a minimum of ½-inch from the concrete surface. After the concrete is placed, the coupler shall be plugged with plastic plugs, which have an O-ring seal and the recess filled with sealant to prevent any contact with water or other corrosive materials. Threaded couplers shall be plugged.

E. Unless noted otherwise, mechanical coupler spacing and capacity shall match the spacing and capacity of the reinforcing shown for the adjacent section.

3.06 CLEANING AND PROTECTION

A. Reinforcement steel shall at all times be protected from conditions conducive to corrosion until concrete is placed around it.

B. The surfaces of all reinforcement steel and other metalwork to be in contact with concrete shall be thoroughly cleaned of all dirt, grease, loose scale and rust, grout, mortar, and other foreign substances immediately before the concrete is placed. Where there is delay in depositing concrete, reinforcement shall be reinserted and, if necessary recleaned.

3.07 EMBEDMENT OF DRILLED REINFORCING STEEL DOWELS

A. Hole Preparation:
   1. The hole diameter shall be as recommended by the epoxy manufacturer but shall be no larger than 0.25-inch greater than the diameter of the outer surface of the reinforcing bar deformations.
   2. The depth of the hole shall be as recommended by the epoxy manufacturer to fully develop the bar but shall not be less than 12 bar diameters, unless noted otherwise.
   3. The hole shall be drilled by methods, which do not interfere with the proper bonding of epoxy.
   4. Existing reinforcing steel in the vicinity, of proposed holes shall be located prior to drilling. The location of holes to be drilled shall be adjusted to avoid drilling through or nicking any existing reinforcing bars.
   5. The hole shall be blown clean with clean, dry compressed air to remove all dust and loose particles.

6. Epoxy shall be injected into the hole through a tube placed to the bottom of the hole. The tube shall be withdrawn as epoxy is placed but kept immersed to prevent formation of air pockets. The hole shall be filled to a depth that insures that excess material will be expelled from the hole during dowel placement.
7. Dowels shall be twisted during insertion into the partially filled hole so as to guarantee full wetting of the bar surface with epoxy. The bar shall be inserted slowly enough to avoid developing air pockets.

END OF SECTION

SECTION 03 3000 – CAST-IN-PLACE CONCRETE

PART 1 – GENERAL

1.01 THE REQUIREMENT

A. Furnish all materials for concrete in accordance with the provisions of this Section and form, mix, place, cure, repair, finish, and do all other work as required to produce finished concrete, in accordance with the requirements of the Contract Documents.

B. Soils Report: This work shall conform to the requirements of the latest Geotechnical Evaluation and or Soils Report.

C. The following types of concrete are covered in this Section:
   1. Structural Concrete: Concrete to be used in all cases except where indicated otherwise in the Contract Documents.
   2. Sitework Concrete: Concrete to be used for curbs, gutters, catch basins, sidewalks, pavements, fence and guard post embedment, underground duct bank encasement and all other concrete appurtenant to electrical facilities unless otherwise indicated.
   3. Lean Concrete: Concrete to be used for thrust blocks, pipe trench cut-off blocks and cradles that are detailed on the Drawings as un-reinforced. Lean concrete shall be used as protective cover for dowels intended for future connection.

D. The term "hydraulic structure" used in these specifications means environmental engineering concrete structures for the containment, treatment or transmission of water, wastewater, or other fluids.

E. American Iron and Steel (AIS) requirement applies to this section. All iron and steel products used in this project must be produced in the United States.

1.02 REFERENCE SPECIFICATIONS, CODES AND STANDARDS

A. The work shall conform to the requirements of the applicable Sections of these Specifications Divisions:
   1. 01 – General Requirements
   2. 03 – Concrete

B. Commercial Standards:

ACI 117	Concrete Construction and Materials
ACI 214	Evaluation of Strength Test Results of Concrete
ACI 301	Structural Concrete for Buildings
ACI 306.1	Cold Weather Concreting
ACI 309	Consolidation of Concrete
ACI 315	Details and Detailing of Concrete Reinforcement
ACI 318	Building Code Requirements for Reinforced Concrete
ACI 350R	Environmental Engineering Concrete Structures
ASTM C31	Making and Curing Concrete Test Specimens in the Field
ASTM C33	Concrete Aggregates
ASTM C39	Compressive Strength of Cylindrical Concrete Specimens
ASTM C94	Ready-Mixed Concrete
ASTM C136	Sieve Analysis of Fine and Coarse Aggregates
ASTM C143	Slump of Hydraulic Cement Concrete
ASTM C150	Portland Cement
ASTM C156	Water Retention by Concrete Curing Materials
ASTM C157	Length Change of Hardened Hydraulic Cement Mortar and Concrete

ASTM C192	Making and Curing Concrete Test Specimens in the Laboratory
ASTM C260	Air-Entraining Admixtures for Concrete
ASTM C309	Liquid Membrane-Forming Compounds for Curing Concrete
ASTM C494	Chemical Admixtures for Concrete
ASTM C1077	Laboratories Testing Concrete and Concrete Aggregates for use in Construction & Criteria for Laboratory Evaluation
ASTM D175	Preformed Expansion Joint Fillers for Concrete Paving and Structural Construction (Non-extruding and Resilient Bituminous Types)
ASTM D448	Sizes of Aggregate for Road and Bridge Construction
ASTM D2419	Sand Equivalent Value of Soils and Fine Aggregate
ASTM E119	Fire Tests of Building Construction and Materials

1.03 SYSTEM DESCRIPTIONS

A. Performance Requirements:

1. General:
   a. Except as otherwise specified, provide concrete composed of Portland cement, aggregate, and water so proportioned and mixed as to produce plastic, cohesive workable mixture in accordance with requirements as specified in this Section and suitable to specific conditions of placement.
   b. Due to the corrosivity of the soil and recommendations from the Geotechnical Evaluation, concrete shall be made with cement that provides sulfate resistance and that has a maximum water-cementitious materials ratio and minimum compressive strength set forth in 2006 IBC and ACI 318. See also the Geotechnical Evaluation.
   c. Proportion fine and coarse aggregates in a manner such as not to produce harshness in placing nor honeycombing in structures.
2. Water tightness of Concrete Work: It is intent of this Section to secure for every part of the Work concrete and grout of homogeneous structure, which when hardened will have required strength, water tightness, and durability. As provided in ACI 350.1/350.1R Concrete for Environmental Structures.
   a. It is recognized that some surface hairline cracks and crazing will develop in concrete surfaces.
   b. Construction, contraction, and expansion joints have been positioned in structures as indicated on the Drawings, and curing methods specified, for purpose of reducing number and size of these expected from specified concrete mixes.
   c. Watertight: Repair cracks as described in this Section which develop in walls or slabs and repair cracks which show any signs of leakage until all leakage is stopped.
   d. If patching does not stop the leakage and at the engineer's discretion the installing CONTRACTOR shall pressure inject visible cracks, other than hairline cracks and crazing, in following areas with epoxy as specified in applicable Sections of Division 03 – Concrete.
      1) Floors and walls of water bearing structures.
      2) Walls and overhead slabs of passageways or occupied spaces, outsides of which are exposed to weather or may be washed down and are not specified to receive separate waterproof membrane.
      3) Other Items Not Specified to Receive Separate Waterproof Membrane: Slabs over water channels, wet walls, reservoirs, and other similar surfaces.

3. Workmanship and Methods: Provide concrete work, including detailing of reinforcing, conforming with best standard practices, and as set forth in ACI 318, Manuals, and Recommended Practices.

1.04 SUBMITTALS

A. Submittals shall be furnished in accordance with Section 01 3300 – Submittal Procedures.

B. Product Data: Submit data completely describing products.

C. Information on Heating Equipment to Be Used for Cold Weather Concreting: Submit information on type of equipment to be used for heating materials and/or new concrete in process of curing during excessively cold weather.

D. For conditions that promote rapid drying of freshly placed concrete such as low humidity, high temperature, and wind: Submit corrective measures proposed for use prior to placing concrete.

E. Copies of Tests of Concrete Aggregates: Submit certified copies in triplicate of commercial laboratory tests not more than 90 days old of all samples of concrete aggregates.
   1. Fine Aggregate:
      a. Clay lumps
      b. Reactivity
      c. Shale and chert
      d. Soundness
      e. Color
      f. Decantation
   2. Coarse Aggregate:
      a. Clay lumps and friable particles
      b. Reactivity
      c. Shale and chert
      d. Soundness.
      e. Abrasion loss
      f. Coal and lignite
      g. Materials finer than 200 sieve

F. Sieve Analysis: Submit sieve analysis of fine and coarse aggregates being used in triplicate at least every 3 weeks and at any time there is significant change in grading of materials.

G. Concrete Mixes: Submit full details, including mix design calculations for concrete mixes proposed for use for each class of concrete.
   1. Include information on correction of batching for varying moisture contents of fine aggregate.
   2. Submit source quality test records with mix design submittal.

H. If There is Change in Aggregate Source, Aggregate Quality from Same Source: Submit new set of design mixes covering each class of concrete.

I. If Either Fine or Coarse Aggregate Is Batched from More than One Bin: Submit analyses for each bin, and composite analysis made up from these, using proportions of materials to be used in mix.

J. Cement Mill Tests: Include alkali content, representative of each shipment of cement for verification of compliance with specified requirements.

K. Pozzolan Certificate of Compliance: Identify source of pozzolan and certify compliance with requirements of ASTM C618.

L. Information on mixing equipment.

M. Drying shrinkage test data.

N. Packing and Shipping:
   1. Deliver, store, and handle concrete materials in manner as to prevent damage and inclusion of foreign substances.
   2. Deliver and store packaged materials in original containers until ready for use.
   3. Deliver aggregate to mixing site and handle in such a manner that variations in moisture content will not interfere with steady production of concrete of specified degree of uniformity and slump.

O. Acceptance at Site: Reject material containers or materials showing evidence of water or other damage.

P. Test Batch Test Data:
   1. Submit data for each test cylinder.
   2. Submit data that identifies mix and slump for each test cylinder.

Q. Sequence of Concrete Placing: Submit proposed sequence of placing concrete showing proposed beginning and ending of individual placements.

R. Ties to be used and the tie hole patching procedure and methods and materials.

S. Curing Compound Other than Specified Compound: Submit complete data on proposed compound.

T. Repair of Defective Concrete: Submit mix design for grout or product data if mixed onsite.

U. Acceptance of Method of Concrete Repair: Make no repair until the ENGINEER has accepted method.

1.05 QUALITY ASSURANCE

A. General
   1. Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C94/C94M requirements for production facilities and equipment.
   2. Tests for compressive strength and shrinkage of concrete shall be performed as indicated herein. Test for determining slump will be in accordance with the requirements of ASTM C143.
   3. The cost of all laboratory tests on concrete will be borne by the CONTRACTOR. The laboratory will meet or exceed the requirements of ASTM C1077.
   4. Concrete for testing shall be supplied by the CONTRACTOR at no additional cost to the OWNER, and the CONTRACTOR shall assist the ENGINEER in obtaining samples, and disposal and cleanup of excess material.

B. Field Testing of Concrete:
   1. During progress of construction, the CONTRACTOR will have tests made to determine whether the concrete, as being produced, complies with requirements specified.
   2. Tests will be performed in accordance with ASTM C31, ASTM C39, and ASTM C172.
   3. The testing company will make and deliver test cylinders to the laboratory and testing expense will be borne by the CONTRACTOR.

4. Required Number Cylinders:
    a. Not less than 3 cylinder specimens, 6 inches in diameter by 12 inches long, will be tested for each 150 cubic yards of each class of concrete placed and not less than 3 specimens for each half day's placement.
    b. One cylinder will be broken at 7 days and 2 at 28 days.
5. The Testing Agency shall:
    a. Test slump of concrete using slump cone in accordance with the requirements of ASTM C143.
    b. Furnish test equipment.
    c. Do not use the concrete that does not meet specification requirements in regards to slump, but remove such concrete from project site.
    d. Test slump at the beginning of each placement, as often as necessary to keep slump within the specified range, and when requested to do so by the ENGINEER.
    e. Make provisions for and furnish concrete for test specimens, and provide manual assistance to the ENGINEER in preparing said specimens.
    f. Assume responsibility for care of and providing of curing conditions for test specimens in accordance with ASTM C31.

C. Enforcement of Strength Requirement:
1. Concrete is expected to reach higher compressive strength than that which is indicated on the drawings and herein as specified compressive strength f'c.
2. Strength Level of Concrete: Will be considered acceptable if the following conditions are satisfied.
    a. Average of all sets of 3 consecutive test results is greater or equal to specified compressive strength f'c.
    b. No individual strength test (average of 2 cylinders) falls below specified compressive strength f'c by more than 500 pounds per square inch.
    c. Whenever one, or both, of 2 conditions stated above is not satisfied, provide additional curing of affected portion followed by cores taken in accordance with ASTM C42 and ACI 318 and comply with the following requirements.
        1) If additional curing does not bring average of 3 cores taken in affected area to at least specified compressive strength f'c, designate such concrete in affected area as defective.
        2) The ENGINEER may require the CONTRACTOR to strengthen defective concrete by means of additional concrete, all at the CONTRACTOR's expense.

D. Construction Tolerances: The CONTRACTOR shall set and maintain concrete forms and perform finishing operations to ensure that the completed WORK is within tolerances. Surface defects and irregularities are defined as finishes and are to be distinguished from tolerances. Tolerance is the permissible variation from lines, grades, or dimensions indicated on the Drawings. Where tolerances are not stated in the specifications, permissible deviations will be in accordance with ACI 117.

1. The following construction tolerances apply to finished walls and slab unless otherwise indicated:

Item	Tolerance
Variation of the Constructed Linear Outline from the Established Position in Plan	In 10 feet: ¼ in. In 20 feet or more: ½ in.
Variation from the Level or from the Grades Shown	In 10 feet: ¼ in. In 20 feet or more: ½ in.
Variation from the Plumb	In 10 feet: ¼ in. In 20 feet or more: ½ in.
Variation in the Thickness of Slabs and Walls	Minus ¼ in. Plus ½ in.
Variation in the Locations and Sizes of Slabs and Wall Openings	Plus or minus ¼ in.
Variation in Weirs Hydraulic Control Structures	Max deviation in elevation ¼ in. (total)

1.06 PROJECT CONDITIONS

A. Environmental Requirements:
   1. Hot weather concreting:
      a. When Ambient Air Temperature Is Above 90°F: Prior to placing concrete, cool forms and reinforcing steel by water cooling to below 90°F.
      b. Temperature of Concrete Mix at Time of Placement: Keep temperature below 90°F by methods which do not impair quality of concrete.
   2. Cold Weather Concreting:
      a. Concrete placed below ambient air temperature of 45°F and falling or below 40°F: Make provision for heating water.
      b. If materials have been exposed to freezing temperatures to degree that any material is below 35°F: Heat such materials.
      c. Heating Water, Cement, or Aggregate Materials:
         1) Do not heat in excess of 160°F.
      d. Protection of Concrete in Forms:
         1) Protect by means of covering with tarpaulins, or other acceptable covering.
         2) Provide means for circulating warm moist air around forms in manner to maintain temperature of 50°F for at least 5 days.
   3. For conditions that promote rapid drying of freshly placed concrete such as low humidity, high temperature, and wind: Take corrective measures to minimize rapid water loss from concrete.
      a. Furnish and use sufficient number of maximum and minimum self-recording thermometers to adequately measure temperature around concrete.

1.07 SEQUENCING AND SCHEDULING

A. Schedule placing of concrete in such a manner as to complete any single placing operation to construction, contraction, or expansion joint.

PART 2 – PRODUCTS

2.01 CONCRETE MATERIALS

A. Aggregate
   1. General:
      a. Provide concrete aggregates that are sound, uniformly graded, and free of deleterious material in excess of allowable amounts specified.
      b. Grade aggregate in accordance with ASTM D75 and C136.
      c. Provide unit weight of fine and coarse aggregate which produces in place concrete with weight of not less than 140 pounds per cubic foot.

B. Fine Aggregate:
   1. Provide fine aggregate for concrete or mortar consisting of clean, natural sand or of sand prepared from crushed stone or crushed gravel.
   2. Do not provide aggregate having deleterious substances in excess of the following percentages by weight of contaminating substances. In no case shall total exceed percent listed.

Item	Test Method	Percent
Removed by Decantation (dirt, silt, etc.)	ASTM C117	3
Shale or Chert	ASTM C295	1
Clay Lumps	ASTM C142	1

   1. Except as otherwise specified, grade fine aggregate from coarse to fine in accordance with requirements of ASTM C33.

C. Coarse Aggregate:
   1. General: Provide coarse aggregate consisting of gravel or crushed stone made up of clean, hard, durable particles free from calcareous coatings, organic matter, or other foreign substances.
   2. Weight: Not exceeding 15 percent, for thin or elongated pieces having length greater than 5 times average thickness.
   3. Deleterious Materials: Not in excess of following percentages by weight, and in no case having total of all deleterious substances exceeding 2 percent.

Item	Test Method	Percent
Shale or Chert	ASTM C295	1
Coal and Lignite	ASTM C123	1/4
Clay Lumps and Friable Particles	ASTM C142	1/4
Materials Finer than Number 200 Sieve	ASTM C117	1/2*

NOTE: (*) Except when material finer than Number 200 sieve consists of crusher dust, maximum amount shall be 1 percent>

   4. Grading:
      a. Aggregate: As specified in ASTM C33, Size Number 57, except as otherwise specified or authorized in writing by the ENGINEER.
      b. Aggregate for Concrete for Encasement of Electrical Conduits:
         1) Graded as specified in ASTM C33, Size Number 8.
         2) Provide concrete utilizing this aggregate equal to 2500 psi concrete in all other respects, and is designated as Class CE.

D. Portland Cement:
   1. General: Conform to specifications and tests for ASTM C150, except as specified otherwise.
   2. Low Alkali Portland: Have total alkali containing not more than 0.60 percent, unless specified otherwise, and or where soil conditions permit such use.

3. Exposed Concrete in Any Individual Structure: Use only one brand of Portland cement.
4. Cement for Finishes: Provide cement from the same source and of same type as concrete to be finished.

E. Admixtures:
1. General:
   a. Do not use admixtures of any type, except as specified, unless written authorization has been obtained from the ENGINEER.
   b. Compatible with concrete and other admixtures.
   c. Do not use admixtures containing chlorides calculated as chloride ion in excess of 0.5 percent by weight.
   d. Use in accordance with manufacturer's recommendations and add each admixture to concrete mix separately.
2. Water Reducing Admixture:
   a. May be used at the CONTRACTOR's option.
   b. Conform to ASTM C494, Type A or Type D.
   c. Not contain air entraining agents.
   d. Liquid form before adding to the concrete mix.
   e. No decrease in cement is permitted as result of use of water reducing admixture.
3. Superplasticizers or Flyash: Are not to be used without acceptance by ENGINEER.

F. Water:
1. Water for Concrete, Washing Aggregate, and Curing Concrete: Clean and free from oil and deleterious amounts of alkali, acid, organic matter, or other substances.
2. Chlorides and Sulfate Ions:
   a. Water for Conventional Reinforced Concrete: Use water not containing more than 1,000 (mg/L) of chlorides calculated as chloride ion, no more than 1,000 (mg/L) of sulfates calculated as sulfate ion.
   b. Water for Pre-stressed or Post-tensioned Concrete: Use water not containing more than 650 (mg/L) milligrams per liter of chlorides calculated as chloride ion, nor more than 800 (mg/l) of sulfates calculated as sulfate ion.

G. Conduit Encasement Coloring Agent:
1. Color: Red color concrete used for encasement of electrical ducts, conduits, and similar type items.
2. Manufacturers: One of the following or ENGINEER-approved equal.
   a. Frank D, Davis Company, Red Oxide Number 117.
   b. I. Reiss Company, Inc., equivalent product.
3. Conduit Encasement Concrete: Mix into each cubic yard of concrete 10 pounds of coloring agent.

H. Keyway Material: Lumber.

I. All curing compounds shall be white pigmented and resin based conforming to ASTM C309, Type D. Sodium silicate compounds shall not be allowed. Concrete curing compound shall be Kurez by Euclid Chemical Company; MB-429 as manufactured by Mater Builders; L&M Cure R; or ENGINEER-approved equal. Water based resin curing compounds shall be used only where local air quality regulations prohibit the use of a solvent based compound. Water based curing compounds shall be Aqua-Cure by Euclid Chemical Company; Masterkure-W by Master Builders; L&M Cure R-2; or ENGINEER-approved equal.

J. Manufacturers: One of the following or ENGINEER-approved equal.
1. WR Meadows

2. CGM Incorporated

K. Plastic Membrane Curing: Use polyethylene film.
1. Color: White
2. Thickness: Minimum 6 mils.
3. Loss of Moisture: Not to exceed 0.055 grams per square centimeter of surface when tested in accordance with ASTM C156.

2.02 CONCRETE DESIGN REQUIREMENTS

A. General: Concrete shall be composed of cement, admixtures, aggregates, and water of the qualities indicated. The exact proportions in which these materials are to be used for different parts of the work will be determined during the trial batch. In general, the mix shall be designed to produce a concrete capable of being deposited so as to obtain maximum density and minimum shrinkage, and, where deposited in forms, to have good consolidation properties and maximum smoothness of surface. The aggregate gradations shall be formulated to provide fresh concrete that will not promote rock pockets around reinforcing steel or embedded items. The proportions shall be changed whenever necessary or desirable to meet the required results at no additional cost to the OWNER. All changes shall be subject to review by the ENGINEER.

B. Fine Aggregate Composition: In mix designs for structural concrete, the percentage of fine aggregate in total aggregate by weight, shall be as indicated in the following table.

Fineness Modulus	Maximum Percent
2.7 or less	41
2.7 to 2.8	42
2.8 to 2.9	43
2.9 to 3.0	44

For other concrete, the maximum percentage of fine aggregate of total aggregate, by weight, shall not exceed 50.

C. Water-Cement Ratio and Compressive Strength: Concrete shall have the following minimum properties unless noted otherwise on the plans:

Type of Work	Min 28-Day Compr. Strength (psi)	Max Size Aggregate (in)	Minimum Cement per cubic yard (lbs)	Non Air Max W/C Ratio (by weight)
Structural Concrete	5,000	1	564	*
	4,500	1	564	0.38
	4,000	1	564	0.45
Pea Gravel Mix	4,000	3/8	752	0.40
Sitework Concrete	3,000	1	470	0.50
Lean Concrete	2,000	1	376	0.60

*__NOTES__: W/C ratio shall be based upon the Geotechnical Evaluation and or Soils Report - Refer to the Evaluation for W/C, and other site dependent concrete recommendations. See the Structural Plan notes for strength application and location.

The CONTRACTOR is cautioned that the limiting parameters above are not a mix design. Additional cement or water reducing agent may be required to achieve workability required by the CONTRACTOR's construction methods and aggregates. The CONTRACTOR is responsible for providing concrete with the required workability.

For strengths above 4500 psi (non-air) concrete proportions shall be established from either existing field data or trial mixes. This information shall be submitted by the ready mix company through the CONTRACTOR for review by the ENGINEER before it will be

approved. The average compressive strength from the test record must equal or exceed the ACI 318 requirements for average compressive strength.

D. Adjustments to Mix Design: The mixes shall be changed whenever such change is necessary or desirable to secure the required strength, density, workability, and surface finish, and the CONTRACTOR shall be entitled to no additional compensation because of such changes.

2.03 CONSISTENCY

A. The quantity of water in a batch of concrete shall be just sufficient, with a normal mixing period, to produce a concrete which can be worked properly into place without segregation and which can be compacted by vibratory methods to give the desired density, impermeability, and smoothness of surface. The quantity of water shall be changed as necessary, with variations in the nature or moisture content of the aggregates, to maintain uniform production of a desired consistency. The consistency of the concrete in successive batches shall be determined by slump tests in accordance with ASTM C143. The slumps shall be as follows:

Part of Work	**Slump (in)**
All concrete, unless indicated otherwise	3 inches plus or minus 1 inch
With high range water reducer added	7 inches plus or minus 2 inches
Pea gravel mix	7 inches plus or minus 2 inches
Ductbanks	5 inches plus or minus 1 inch

2.04 MIXES

A. Measurements of Materials:
   1. Measure materials by weighing, except as otherwise specified or where other methods are specifically authorized in writing by the ENGINEER.
   2. Furnish apparatus for weighing aggregates and cement that is suitably designed and constructed for this purpose.
   3. Accuracy of Weighing Devices: Furnish devices that have capability of providing successive quantities of individual material that can be measured to within one percent of desired amount of that material.
   4. Measuring or Weighing Devices: Subject to review by the ENGINEER, and bear valid seal of the Sealer of Weights and Measures having jurisdiction.
   5. Weighing Cement:
      a. Weigh cement separately.
      b. Cement in Unbroken Standard Packages (Sacks): Need not be weighed.
      c. Bulk Cement and Fractional Packages: Weigh such cement.
   6. Mixing Water: Measured by volume or by weight.

B. Concrete Proportions and Consistency:
   1. Concrete Consistency and Composition:
      a. Provide concrete that can be worked readily into corners and angles of forms and around reinforcement without excessive vibration and without permitting materials to segregate or free water to collect on surface.
      b. Prevent unnecessary or haphazard changes in consistency of concrete.
   2. Ratio of Coarse Aggregate to Fine Aggregate: Not less than 1.0 nor more than 2.0 for all concrete Classes, with exception of Class CE.

3. Aggregate:
    a. Obtain aggregate from source which is capable of providing uniform quality, moisture content, and grading during any single day's operation.
4. Concrete Mix Water to Cement Ratio, Cement Content, and Slump Range: Conform to values specified in Section 2.02.C and per the Geotechnical Evaluation.
5. Concrete Batch Weighs: Control and adjust so as to secure maximum yield, and at all times maintain proportions of concrete mix within specified limits.
6. Mixture Modification: If required, by the ENGINEER, modify mixture within limits set forth in this Section.

C. Concrete Mixes:
1. Proportioning of Concrete Mix: Proportion mixes on required average on compressive strength f'c as defined in the contract documents.
2. Mixes:
    a. Adjusting of Water: After acceptance, do not change mixes without acceptance by ENGINEER, except that at all times adjust batching of water to compensate for free moisture content of fine aggregate.
    b. Total Water Content of Each Concrete Class: Not exceed those specified in Section 2.02.C, unless noted otherwise or specified in the Geotechnical Evaluation.
    c. Checking Moisture Content of Fine Aggregate: Furnish satisfactory means at batching plant for checking moisture content of fine aggregate.
3. Change in Mixes: Undertake new trial batch and test program as specified in this Section.

D. Hand Mixed Concrete:
1. Hand mix concrete only when acceptable to the ENGINEER.
2. Prepare hand mixed concrete on watertight, level platform in batches not to exceed 1/3 cubic yard each.
3. Aggregate:
    a. First spread required amount of coarse aggregate on platform in an even and uniform layer, and then over such aggregate spread proper proportion of fine aggregate.
    b. Combined Depth of Both Such Layers: Not be greater than one foot.
4. Cement:
    a. First evenly spread required quantity of cement over fine aggregate.
    b. Then turn entire batch with shovels at least twice before adding water.
5. Water:
    a. Then uniformly sprinkle or spray proper amount of water over batched materials.
    b. Then turn with shovels not less than three times before being removing from platform.

2.05 SOURCE QUALITY CONTROL

A. Tests:
1. Concrete Mixes:
    a. After concrete mixes have been accepted by ENGINEER, have trial batches of the accepted mix designs prepared by testing laboratory acceptable to the ENGINEER.
    b. Prepare trial batches by using specified cement and aggregates proposed to be use for the work.
    c. Trial Batches: Provide batches of sufficient quantity to determine slump, workability, consistency, and finishing characteristics, and to provide sufficient test cylinders.

d. Test Cylinders: Provide cylinders having six-inch diameter by 12-inch length and that are prepared in accordance with ASTM C31 for tests specified in this Section.
e. Determine slump in accordance with ASTM C143.
f. Test Cylinders from Trial Batch:
    1) Test 8 cylinders for compressive strength in accordance with ASTM C39.
        a) Test 4 cylinders at 7 days and 4 at 28 days.
        b) Establish ratio between 7-day and 28-day strength for mix. Seven-day strength may be taken as satisfactory indication of 28-day strength provided effects on concrete of temperature and humidity between 7-day and 28-day are considered.
    2) Average Compressive Strength of 4 Test Cylinders Tested at 28 Days: Equal to or greater than required average compressive strength f'c on which concrete mix design is based.
g. Drying Shrinkage:
    1) Prepare 5 drying shrinkage specimens in accordance with ASTM C157, except as modified herein.
    2) Remove drying shrinkage specimens from molds at age of 23 hours plus or minus 1 hour after trial batching, then immediately place them in water at 73°F plus or minus 3 degrees for at least 30 minutes and then measure specimens within 30 minutes thereafter to determine original length. Then submerge specimens in saturated lime water at 73°F plus or minus three degrees for moist curing.
    3) Make measurements to determine expansion expressed as percentage of original length at age 7 days. Use length at age 7 days as base length for drying shrinking calculations.
    4) Immediately store specimens in humidity controlled room maintained at 73°F plus or minus 3 degrees and 50 percent plus or minus 4 relative humidity for remainder of the test.
    5) Make and report measurements to determine shrinkage expressed as percentage of base length separately for 7, 14, 21, and 28 days of drying after 7 days of moist curing.
    6) Drying Shrinkage Deformation:
        a) Measure drying shrinkage deformation of each specimen as difference between base length and length after drying at each test age.
        b) Measure average drying shrinkage deformation of specimens to nearest 0.0001 inch at each test age.
        c) If drying shrinkage of any specimen departs from average of test age by more than 0.0004 inch, disregard results obtained from that specimen and test another specimen.
        d) Shrinkage of trial batch concrete at 28 days drying age shall not exceed 0.045 percent maximum.
h. If trial batch tests do not meet specified requirements for slump, strength, workability, consistency, drying shrinkage, and finishing, change concrete mix design proportions and, if necessary, source of aggregate. Make additional trial batches and tests until an acceptable trial batch is produced that meets requirements of this Section.
i. Perform test batches and tests required to establish trial batches and acceptability of materials without change in Contract Price.
j. Do not place concrete until the concrete mix design and trial batch have been accepted by ENGINEER.

2. Required Average Compressive Strength:
   a. Determine required average compressive strength (f'c) for selection of concrete proportions for mix design, for each class of concrete, using calculated standard deviation and its corresponding specified compressive strength f'c, in accordance with ACI 318, Part 3, Chapter 5.
   b. When test records of at least 30 consecutive tests that span period of not less than 45 calendar days are available, establish standard deviation as described in ACI 318, Part 3, Chapter 5 and as modified as follows herein.
   c. Provide test records from which to calculate standard deviation that represent materials, quality control procedures, and conditions similar to materials, quality control procedures, and conditions expected to apply in preparation of concrete for the Work.
   d. Provide changes in materials and proportions within test records that are more restricted than those for the Work.
   e. Specified Compressive Strength (f'c) of Concrete Used in Test Records: Within 1,000 pounds per square inch of that specified for the Work.
   f. When lacking adequate test records for calculation of standard deviation meeting requirements, determine required average compressive strength f'c from the following table.

Specified Compressive Strength f'c (pounds per square inch)	Required Average Compressive Strength f'c (pounds per square inch)
Less than 3,000	f'c + 1,000
3,000 to 5,000	f'c + 1,200
Over 5,000	f'c + 1,400

3. Pozzolan:
   a. Sampling and Testing:
      1) Sample and test pozzolan in accordance with ASTM C311.
      2) In Computing Water to Cement Ratio and Cement Content per Cubic Yard of Concrete: Consider cement weight to be weight of Portland cement plus 100 percent of weight of fly ash.
4. Aggregate:
   a. Testing of concrete aggregate is at CONTRACTOR's expense.
   b. Sieves:
      1) Use sieves with square openings for testing grading or aggregates.
      2) Sieve Analysis: If sieve analysis indicates significant change in materials, the ENGINEER may require that new mix design be submitted and accepted before further placing of concrete.
   c. Sample aggregate in accordance with ASTM D75 and C136.
   d. Fine Aggregate:
      1) Provide fine aggregate not containing strong alkali nor organic matter which gives color darker than standard color when tested in accordance with ASTM C40.
      2) Provide aggregate having soundness complying with requirements of ASTM C33 when tested in accordance with ASTM C88.
      3) Provide aggregate complying with reactivity requirements of ASTM C33 when tested in accordance with ASTM C289.
   e. Coarse Aggregate:
      1) Soundness when tested in accordance with ASTM C88: Have loss not greater than 10 percent when tested with sodium sulfate.

2) Abrasion Loss: Not exceed 45 percent after 500 revolutions when tested in accordance with ASTM C131.
3) Reactivity: Not exceed limits specified in Appendix of ASTM C33 when tested in accordance with ASTM C289.

f. Portland Cement:
1) Determination Alkali Content: Determine by method set forth in ASTM C114.

PART 3 – EXECUTION

3.01 PROPORTIONING AND MIXING

A. Proportioning: Proportioning of the mix shall conform to the requirements of Chapter 3 "Proportioning" of ACI 301.

B. Mixing: Mixing shall conform to the requirements of Chapter 7 of said ACI 301 Specifications.

C. Slump: Slumps shall be as indicated herein.

D. Retempering: Retempering of concrete or mortar which has partially hardened shall not be permitted.

3.02 PREPARATION OF SURFACES FOR CONCRETING

A. General: Earth surfaces shall be thoroughly wetted by sprinkling prior to the placing of any concrete, and these surfaces shall be kept moist by frequent sprinkling up to the time of placing concrete thereon. The surface shall be free from standing water, mud, and debris at the time of placing concrete.

B. Joints in Concrete: Concrete surfaces upon or against which concrete is to be placed, where the placement of the concrete has been stopped or interrupted so that, as determined by the ENGINEER, the new concrete cannot be incorporated integrally with that previously placed, are defined as construction joints. The surfaces of horizontal joints shall be given a compacted, roughened surface for good bonding. Except where the Drawings call for joint surfaces to be coated, the joint surfaces shall be cleaned of all laitance, loose or defective concrete, foreign material, and be roughened to a minimum ¼-inch amplitude. Such cleaning and roughening shall be accomplished by hydroblasting or sandblasting (exposing aggregate) followed by thorough washing. All pools of water shall be removed from the surface of construction joints before the new concrete is placed.

C. After the surfaces have been prepared, all approximately horizontal construction joints shall be covered with a 6-inch lift of a pea gravel mix. The mix shall be placed and spread uniformly. Wall concrete shall follow immediately and shall be placed upon the fresh pea gravel mix.

D. Placing Interruptions: When placing of concrete is to be interrupted long enough for the concrete to take a set, the working face shall be given a shape by the use of forms or other means, that will secure proper union with subsequent work; provided that construction joints shall be made only where acceptable to the ENGINEER.

E. Embedded Items: No concrete shall be placed until all formwork, installation of parts to be embedded, reinforcement steel, and preparation of surfaces involved in the placing have been completed and accepted by the ENGINEER at least 4 hours before placement of concrete. All surfaces of forms and embedded items that have become encrusted with dried grout from previous work shall be cleaned before the surrounding or adjacent concrete is placed.

F. All inserts or other embedded items shall conform to the requirements herein.

G. All reinforcement, anchor bolts, sleeves, inserts, and similar items shall be set and secured in the forms at locations indicated on the Drawings or shown by shop drawings and shall be acceptable to the ENGINEER before any concrete is placed. Accuracy of placement is the responsibility of the CONTRACTOR.

H. Casting New Concrete Against Old: Where concrete is to be cast against old concrete (any concrete which is greater than 180 days of age), the surface of the old concrete shall be thoroughly cleaned and roughened by hydro-blasting or sandblasting (exposing aggregate). The joint surface shall be coated with an epoxy bonding agent unless indicated otherwise by the ENGINEER.

I. No concrete shall be placed in any structure until all water entering the space to be filled with concrete has been properly cut off or has been diverted by pipes, or other means, and carried out of the forms, clear of the WORK. No concrete shall be deposited underwater nor shall the CONTRACTOR allow still water to rise on any concrete until the concrete has attained its initial set. Water shall not be permitted to flow over the surface of any concrete in such manner and at such velocity as will injure the surface finish of the concrete. Pumping or other necessary dewatering operations for removing ground water, if required, shall be subject to the review of the ENGINEER.

J. Corrosion Protection: Pipe, conduit, dowels, and other ferrous items required to be embedded in concrete construction shall be so positioned and supported prior to placement of concrete that there will be a minimum of 2 inches clearance between said items and any part of the concrete reinforcement. Securing such items in position by wiring or welding them to the reinforcement will not be permitted.

K. Openings for pipes, inserts for pipe hangers and brackets, and anchors shall, where practicable, be provided during the placing of concrete.

L. Anchor bolts shall be accurately set and shall be maintained in position by templates while being embedded in concrete.

M. Cleaning: The surfaces of all metalwork to be in contact with concrete shall be thoroughly cleaned of all dirt, grease, loose scale and rust, grout, mortar, and other foreign substances immediately before the concrete is placed.

3.03 HANDLING, TRANSPORTING, AND PLACING

A. General: Placing of concrete shall conform to the applicable requirements of Chapter 8 of ACI 301 and the requirements of this Section. No aluminum materials shall be used in conveying any concrete.

B. Non-Conforming Work or Materials: Concrete which during or before placing is found not to conform to the requirements indicated herein shall be rejected and immediately removed from the work. Concrete which is not placed in accordance with these Specifications, or which is of inferior quality, shall be removed and replaced by the CONTRACTOR at no additional cost to the OWNER.

C. Unauthorized Placement: No concrete shall be placed except in the presence of a duly authorized representative of the ENGINEER. The CONTRACTOR shall notify the ENGINEER in writing at least 24 hours in advance of placement of any concrete.

D. Placement in Wall and Column Forms: Concrete shall not be dropped through reinforcement steel or into any deep form, nor shall concrete be placed in any form in such a manner as to leave accumulation of mortar on the form surfaces above the placed concrete. In such cases, means such as hoppers and, if necessary, vertical ducts of canvas, rubber, or metal shall be used for placing concrete in the forms in a manner that it may reach the place of final deposit without separation. In no case shall the free fall of concrete exceed 4 feet in walls and 8 feet in columns below the ends of ducts, chutes, or buggies. Concrete shall be uniformly distributed during the process of depositing and in no case after depositing shall any portion be displaced in the forms more than 6 feet in horizontal direction. Concrete in wall forms shall be deposited in uniform horizontal layers not deeper than 2 feet; and care shall be taken to avoid inclined layers or inclined construction joints except where such are required for sloping members. Each layer shall be placed while the previous layer is still soft. The rate of placing concrete in wall forms shall not exceed 5 feet of vertical rise per hour. Sufficient illumination shall be provided in the interior of all forms so that the concrete at the places of deposit is visible from the deck or runway.

E. Casting New Concrete Against Old: Epoxy adhesive bonding agent shall be applied to the old surfaces according to the manufacturer's written recommendations. This provision shall not apply to joints where hydrotite waterstop is provided.

F. Conveyor Belts and Chutes: All ends of chutes, hopper gates, and all other points of concrete discharge throughout the CONTRACTOR'S conveying, hoisting, and placing system shall be designed and arranged so that concrete passing from them will not fall separated into whatever receptacle immediately receives it. Conveyor belts, if used, shall be of a type acceptable to the ENGINEER. Chutes longer than 50 feet will not be permitted. Minimum slopes of chutes shall be such that concrete of the indicated consistency will readily flow in them. If a conveyor belt is used, it shall be wiped clean by a device operated in such a manner that none of the mortar adhering to the belt will be wasted. All conveyor belts and chutes shall be covered.

G. Placement in Slabs: Concrete placed in sloping slabs shall proceed uniformly from the bottom of the slab to the top, for the full width of the placement. As the work progresses, the concrete shall be vibrated and carefully worked around the slab reinforcement, and the surface of the slab shall be screeded in an up-slope direction.

H. Temperature of Concrete: The temperature of concrete when it is being placed shall be not more than 90°F nor less than 55°F for sections less than 12 inches thick nor less than 50°For all other sections. Concrete ingredients shall not be heated to a temperature higher than that necessary to keep the temperature of the mixed concrete, as placed, from falling below the minimum temperature. When the temperature of the concrete is 85°F or above, the time between the introduction of the cement to the aggregates and discharge shall not exceed 45 minutes. If concrete is placed when the weather is such that the temperature of the concrete would exceed 90°F, the CONTRACTOR shall employ effective means, such as pre-cooling of aggregates and mixing water using ice or placing at night, as necessary to maintain the temperature of the concrete, as it is placed, below 90°F. The CONTRACTOR shall not be entitled to any additional compensation on account of the foregoing requirements.

I. Cold Weather Placement:
   1. Placement of concrete shall conform to ACI 306.1 - Cold Weather Concreting, and the following.
   2. Remove all snow, ice, and frost from the surfaces, including reinforcement, against which concrete is to be placed. Before beginning concrete placement, thaw the subgrade to a minimum depth of 6 inches. All reinforcement and embedded items shall be warmed to above 32°F prior to concrete placement.

3. Maintain the concrete temperature above 50°F for at least 5 days after placement.

3.04 PUMPING OF CONCRETE

A. General: If the pumped concrete does not produce satisfactory end results, the CONTRACTOR shall discontinue the pumping operation and proceed with the placing of concrete using conventional methods.

B. Pumping Equipment: The pumping equipment shall have two (2) cylinders and be designed to operate with one cylinder in case the other one is not functioning. In lieu of this requirement, the CONTRACTOR may have a standby pump on the site during pumping.

C. The minimum diameter of the hose conduits shall be in accordance with ACI 304.2R.

D. Pumping equipment and hose conduits that are not functioning properly shall be replaced.

E. Aluminum conduits for conveying the concrete shall not be permitted.

F. Field Control: Concrete samples for slump and test cylinders will be taken at the placement end of the hose.

3.05 ORDER OF PLACING CONCRETE

A. The order of placing concrete in all parts of the WORK shall be acceptable to the ENGINEER. In order to minimize the effects of shrinkage, the concrete shall be placed in units as bounded by construction joints at the indicated locations. The placing of units shall be done by placing alternate units in a manner such that each unit placed shall have cured at least 5 days for hydraulic structures and 2 days for all other structures before the contiguous unit or units are placed, except that the corner sections of vertical walls shall not be placed until the two (2) adjacent wall panels have cured at least 10 days for hydraulic structures and 4 days for all other structures.

B. The surface of the concrete shall be level whenever a run of concrete is stopped. To insure a level, straight joint on the exposed surface of walls, a wood strip at least ¾-inch thick shall be tacked to the forms on these surfaces. The concrete shall be carried about ½-inch above the underside of the strip. About one hour after the concrete is placed, the strip shall be removed and any irregularities in the edge formed by the strip shall be leveled with a trowel and all laitance shall be removed.

3.06 TAMPING AND VIBRATING

A. As concrete is placed in the forms or in excavations, it shall be thoroughly settled and compacted, throughout the entire depth of the layer which is being consolidated, into a dense, homogeneous mass, filling all corners and angles, thoroughly embedding the reinforcement, eliminating rock pockets, and bringing only a slight excess of water to the exposed surface of concrete. Vibrators shall be Group 3 per ACI 309, high speed power vibrators (8,000 to 12,000 rpm) of an immersion type in sufficient number and with at least one standby unit as required. Group 2 vibrators may be used only at specific locations when accepted by the ENGINEER.

B. Care shall be used in placing concrete around hydrotite waterstops. The concrete shall be carefully worked by rodding and vibrating to make sure that all air and rock pockets have been eliminated. Where flat-strip type hydrotite waterstops are placed horizontally, the concrete shall be worked under the hydrotite waterstops by hand, making sure that all air and rock pockets have been eliminated. Concrete surrounding the hydrotite waterstops shall be given additional vibration over and above that used for adjacent concrete placement to assure complete embedment of the hydrotite waterstops in the concrete.

C. Concrete in walls shall be internally vibrated and at the same time rammed, stirred or worked with suitable appliances, tamping bars, shovels, or forked tools until it completely fills the forms or excavations and closes snugly against all surfaces. Subsequent layers of concrete shall not be placed until the layers previously placed have been worked thoroughly. Vibrators shall be provided in sufficient numbers, with standby units as required, to accomplish the required results within 15 minutes after concrete of the prescribed consistency is placed in the forms. The vibrating head shall not contact the surfaces of the forms. Care shall be taken not to vibrate concrete excessively or to work it in any manner that causes segregation of its constituents.

3.07 FINISHING CONCRETE SURFACES

A. General: Surfaces shall be free from fins, bulges, ridges, offsets, honeycombing or roughness of any kind, and shall present a finished, smooth, continuous hard surface. Allowable deviations from plumb or level and from the alignment, profiles and dimensions shown are defined as tolerances and are indicated in Part 1, above. These tolerances are to be distinguished from irregularities in finish as described herein. Aluminum finishing tools shall not be used.

B. Formed Surfaces: No treatment is required after form removal except for curing, repair of defective concrete, and treatment of surface defects. Where architectural finish is required, it shall be as indicated. Surface holes larger than ½-inch in diameter or deeper than ¼-inch are defined as surface defects in basins and exposed walls and shall be patched per Section 3.11 Treatment of Surface Defects.

C. Unformed Surfaces: After proper and adequate vibration and tamping, all unformed top surfaces of slabs, floors, walls, and curbs shall be brought to a uniform surface with suitable tools. Immediately after the concrete has been screeded, it shall be treated with a liquid evaporation retardant. The retardant shall be used again after each work operation as necessary to prevent drying shrinkage cracks. The classes of finish specified for unformed concrete surfaces are designated and defined as follows:
   1. Finish U1 - Sufficient leveling and screeding to produce an even, uniform surface with surface irregularities not to exceed 3/8-inch. No further special finish is required.
   2. Finish U2 - After sufficient stiffening of the screeded concrete, surfaces shall be float finished with wood or metal floats or with a finishing machine using float blades. Excessive floating of surfaces while the concrete is plastic and dusting of dry cement and sand on the concrete surface to absorb excess moisture will not be permitted. Floating shall be the minimum necessary to produce a surface that is free from screed marks and is uniform in texture. Surface irregularities shall not exceed ¼-inch. Joints and edges shall be tooled where indicated or as determined by the ENGINEER.
   3. Finish U3 - After the finish U2 surface has hardened sufficiently to prevent excess of fine material from being drawn to the surface, steel troweling shall be performed with firm pressure such as will flatten the sandy texture of the floated surface and produce a dense, uniform surface free from blemishes, ripples, and trowel marks. The finish shall be smooth and free of all irregularities.
   4. Finish U4 - Trowel the Finish U3 surface to remove local depressions or high points. In addition, the surface shall be given a light hairbroom finish with brooming perpendicular to drainage unless otherwise indicated. The resulting surface shall be rough enough to provide a nonskid finish.

D. Unformed surfaces shall be finished according to the following schedule:

UNFORMED SURFACE FINISH SCHEDULE

Area	Finish
Grade slabs and foundations to be covered with concrete or fill material	U1
Water bearing slabs with slopes 10 percent and less	U3
Water bearing slabs with slopes greater than 10 percent	U4
Slabs not water bearing	U4
Top surface of walls	U3

3.08 CURING

A. General: All concrete shall be cured for not less than 7 days after placing, in accordance with the methods indicated below for the different parts of the WORK.

Surface to be Cured or Damp proofed	Method
Wall sections with forms removed	1
Construction joints between footings and walls, and between floor slab and columns	2
Encasement concrete and thrust blocks	1 or 2
All concrete surfaces not specifically indicated in this paragraph	1
Floor slabs on grade in hydraulic structures	1 or 2
Slabs not on grade	1 or 2

B. Method 1: The surface shall be sprayed with a liquid white pigmented curing compound.
   1. It shall be applied in accordance with the manufacturer's printed instructions at a maximum coverage rate of 200 square feet per gallon and in such a manner as to cover the surface with a uniform film which will seal thoroughly.
   2. Where the curing compound method is used, care shall be exercised to avoid damage to the seal during the 7-day curing period. If the seal is damaged or broken before the expiration of the curing period, the break shall be repaired immediately by the application of additional curing compound over the damaged portion.
   3. Wherever curing compound has been applied by mistake to surfaces against which concrete subsequently is to be placed and to which it is to adhere, compound shall be entirely removed by wet sandblasting just prior to the placing of new concrete.
   4. Curing compound shall be applied as soon as the concrete has hardened enough to prevent marring on unformed surfaces and within 2 hours after removal of forms. Repairs to formed surfaces shall be made within the 2-hour period; provided, however, that any such repairs which cannot be made within the said 2-hour period shall be delayed until after the curing compound has been applied. When repairs are to be made to an area on which curing compound has been applied, the area involved shall first be wet-sandblasted to remove the curing compound.
   5. At all locations where concrete is placed adjacent to a panel which has been coated with curing compound, the panel shall have curing compound.

C. Method 2: This method applies to both walls and slabs.
   1. The concrete shall be kept continuously wet by the application of water for a minimum period of at least seven (7) consecutive days beginning immediately after the concrete has reached final set or forms have been removed.
   2. Until the concrete surface is covered with the curing medium, the entire surface shall be kept damp by applying water using nozzles that atomize the flow so that the surface is not marred or washed.
   3. Curing blankets shall be used as a curing medium to retain the moisture during the curing period. The curing medium shall be weighted or otherwise held substantially in

contact with the concrete surface to prevent being dislodged by wind or any other causes. All edges shall be continuously held in place.

4. The curing blankets and concrete shall be kept continuously wet by the use of sprinklers or other means both during and after normal working hours.
5. Immediately after the application of water has terminated at the end of the curing period, the curing medium shall be removed, any dry spots shall be rewetted and curing compound shall be immediately applied in accordance with Method 4 above.
6. The CONTRACTOR shall dispose of excess water from the curing operation to avoid damage to the work.

3.09 PROTECTION

A. The CONTRACTOR shall protect all concrete against injury until final acceptance at the CONTRACTOR's own expense and at no additional cost to the OWNER

B. Fresh concrete shall be protected from damage due to rain, hail, sleet, or snow. The CONTRACTOR shall provide such protection while the concrete is still plastic and whenever precipitation is imminent or occurring.

3.10 CURING IN COLD WEATHER

A. The CONTRACTOR shall protect all concrete against injury from cold weather until final acceptance at the CONTRACTOR's own expense and at no additional cost to the OWNER.

B. Concrete cured by an application of curing compound will require no additional protection from freezing if the protection at 50°F for 72 hours is obtained by means of approved insulation in contact with the forms or concrete surfaces; otherwise the concrete shall be protected against freezing temperatures for 72 hours immediately following 5 days protection at 50°F. Concrete cured by water shall be protected against freezing temperatures for 3 days immediately following the 72 hours of protection at 50°F.

C. Discontinuance of protection against freezing temperatures shall be such that the drop in temperature of any portion of the concrete will be gradual and will not exceed 40°F in 24 hours. In the spring, when the mean daily temperature rises above 40°F for more than three (3) successive days, the specified 72-hour protection at a temperature not lower than 50°F may be discontinued for as long as the mean daily temperature remains above 40°F; provided, that the concrete shall be protected against freezing temperatures for not less than 48 hours after placement.

D. Where artificial heat is employed, special care shall be taken to prevent the concrete from drying. Use of un-vented heaters will be permitted only when unformed surfaces of concrete adjacent to the heaters are protected for the first 24 hours from an excessive carbon dioxide atmosphere by application of curing compound; provided, that the use of curing compound for such surfaces is otherwise permitted by these Specifications.

3.11 TREATMENT OF SURFACE DEFECTS

A. As soon as forms are removed, all exposed surfaces shall be carefully examined and any irregularities shall be immediately patched or ground in a satisfactory manner in order to secure a smooth, uniform, and continuous surface. Plastering or coating of surfaces to be smoothed will not be permitted. No repairs shall be made until after inspection by the ENGINEER. In no case will extensive patching of honeycombed concrete be permitted. Concrete containing minor voids, holes, honeycombing, or similar depression defects shall be repaired as indicated below. Concrete containing extensive voids, holes, honeycombing, or similar depression defects shall be completely removed and replaced. All repairs and replacements herein required shall be promptly executed at no increased cost to the OWNER.

B. Defective surfaces to be repaired shall be cut back from true line a minimum depth of ½-inch over the entire area. Feathered edges will not be permitted. Where chipping or cutting tools are not required in order to deepen the area properly, the surface shall be prepared for bonding by the removal of all laitance or soft material, plus not less than 1/32-inch depth of the surface film from all hard portions by means of an efficient sandblast. After cutting and sandblasting, the surface shall be wetted sufficiently in advance of shooting with shotcrete or with cement mortar so that while the repair material is being applied, the surfaces underneath will remain moist but not so wet as to overcome the suction upon which a good bond depends. The material used for repair proposed shall consist of a mixture of one sack of cement to 3 cubic feet of sand. For exposed walls, the cement shall contain such a proportion of Atlas white Portland cement as is required to make the color of the patch match the color of the surrounding concrete. In hydraulic structures the material used for repair shall be hydraulic cement as defined in this Section under Products.

C. Holes left by tie-rod cones shall be rubber stopped and grouted. Holes then shall be repaired in an approved manner with dry-packed cement grout. Holes left by form-tying devices having a rectangular cross-section and other imperfections having a depth greater than their least surface dimension shall not be reamed but shall be repaired in an approved manner with dry-packed cement grout.

D. All repairs shall be built up and shaped in such a manner that the completed work will conform to the requirements of this Section, as applicable, using approved methods which will not disturb the bond, cause sagging, or cause horizontal fractures. Surfaces of repairs shall receive the same kind and amount of curing treatment as required for the concrete in the repaired section.

E. Prior to filling any structure with water, all cracks that may have developed shall be "vee'd" as indicated in specs or in the field and filled with sealant conforming to the requirements of the applicable Sections of Division 03 – Concrete. This repair method shall be done on the water bearing face of members. Prior to backfilling, faces of members in contact with fill, which are not covered with a waterproofing membrane shall also have cracks repaired as indicated herein.

3.12 PATCHING HOLES IN CONCRETE

A. Patching Small Holes:
   1. Holes which are less than 12 inches in the least dimension and extend completely through concrete members shall be filled.
   2. Small holes in members which are water-bearing or in contact with soil or other fill material shall be filled with non-shrink grout or hydraulic cement in wet tanks. Where a face of the member is exposed to view, the non-shrink grout shall be held back 2 inches from the finished surface. The remaining 2 inches shall then be patched according to the Paragraph entitled "Treatment of Surface Defects."
   3. Small holes through all other concrete members shall be filled with non-shrink grout or hydraulic cement, with exposed faces treated as above.

B. Patching Large Holes:
   1. Holes which are larger than 12 inches in the least dimension shall have a keyway chipped into the edge of the opening all around, unless a formed keyway exists. The holes shall then be filled with concrete as indicated herein.

2. Holes which are larger than 24 inches in the least dimension and which do not have reinforcing steel extending from the existing concrete, shall have reinforcing steel set in grout in drilled holes. The reinforcing added shall match the reinforcing in the existing wall unless indicated otherwise.
3. Large holes in members which are water bearing or in contact with soil or other fill shall have a bentonite type hydrotite waterstop material placed around the perimeter of the hole in accordance with the applicable Sections of Division 03 – Concrete, unless there is an existing hydrotite waterstop in place.

3.13 CARE AND REPAIR OF CONCRETE

A. The CONTRACTOR shall protect all concrete against injury or damage from excessive heat, lack of moisture, over-stress, or any other cause until final acceptance. Particular care shall be taken to prevent the drying of concrete and to avoid roughening or otherwise damaging the surface. Any concrete found to be damaged, or which may have been originally defective, or which becomes defective at any time prior to the final acceptance of the completed WORK, or which departs from the established line or grade, or which, for any other reason, does not conform to the requirements of the Contract Documents, shall be satisfactorily repaired or removed and replaced with acceptable concrete at no additional cost to the OWNER.

END OF SECTION

SECTION 03 4100 – PRECAST CONCRETE UTILITY STRUCTURES

PART 1 – GENERAL

1.01 THE REQUIREMENT

A. The CONTRACTOR shall furnish and install structural pre-cast concrete work in accordance with the Contract Documents.

B. This Section covers the design, fabrication, delivery, and installation of all pre-cast concrete units, including connections, complete, in place, as shown and specified.

C. American Iron and Steel (AIS) requirement applies to this section. All iron and steel products used in this project must be produced in the United States.

D. Soils Report: This work shall conform to the requirements of the latest Geotechnical Evaluation and / or Soils Report.

1.02 CODES AND STANDARDS

A. Referenced Documents:

1. ASTM Standards:

A82	Steel Wire, Plain, for Concrete Reinforcement
A184	Fabricated Deformed Steel Bar Mats for Concrete Reinforcement
A185	Steel Welded Wire, Fabric, Plain, for Concrete Reinforcement
A496	Steel Wire, Deformed, for Concrete Reinforcement
A497	Welded Deformed Steel Wire Fabric for Concrete Reinforcement
A615	Deformed and Plain Billet-Steel Bars for Concrete Reinforcement
A616	Rail-Steel Deformed and Plain Bars for Concrete Reinforcement
A617	Axle-Steel Deformed and Plain Bars for Concrete Reinforcement
A706	Low-Alloy Steel Deformed Bars for Concrete Reinforcement
C31	Making and Curing Concrete Test Specimens in the Field
C33	Concrete Aggregates
C39	Compressive Strength of Cylindrical Concrete Specimens
C42	Obtaining and Testing Drilled Cores and Sawed Beams of Concrete
C94	Ready-Mixed Concrete
C150	Portland Cement
C192	Making and Curing Concrete Test Specimens in the Laboratory
C231	Air Content of Freshly Mixed Concrete by the Pressure Method
C260	Air-Entraining Admixtures for Concrete
C330	Lightweight Aggregates for Structural Concrete
C478	Precast Reinforcement Concrete Manhole Sections
C494	Shear Fatigue of Sandwich Core Materials
C595	Blended Hydraulic Cements
C618	Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Concrete
C857	Minimum Structural Design Loading for Underground Precast Concrete Utility Structures

2. American Concrete Institute Standards:
   a. ACI 318 Building Code Requirements for Reinforced Concrete
3. American Welding Society Standards:
   a. AWS-D1.4 Structural Welding Code Reinforcing Steel

1.03 SUBMITTALS

A. Submittals shall be made in accordance with Section 01 3300 – Submittal Procedures.

B. Shop Drawings:
   1. Shop drawings shall show structure dimensions and orientation and location of all applicable inflow and outflow penetrations, access hatches, and conduit sleeves.
   2. Shop drawings shall include design structural calculations, assuming the applicable seismic zone and project groundwater conditions, that are stamped and signed by a Professional Engineer registered in Arizona and shall be approved by the ENGINEER.
   3. Shop drawings shall indicate pre-cast unit identification marks, location of units in the WORK, elevations, fabrication details, joint details, reinforcement, connections, dimensions, interface with adjacent members, and special handling instructions in sufficient detail to cover manufacture, handling and erection. Shop drawings shall include erection drawings.

C. Test Reports: Tests for compressive strength of concrete shall be performed by the factory. Copies of test reports including all test data and all test results shall be submitted.

D. Certificates of Compliance: Certificates of compliance shall be submitted attesting that materials and products meet or exceed specified requirements.

1.04 QUALITY ASSURANCE

A. General Requirements: Design members under direct supervision of a Professional Engineer experienced in design of pre-cast concrete units, registered in the State of Arizona, and conforming to requirements of this specification.
   1. Manufacture, Transportation, and Installation: The Manufacturer shall specialize in providing pre-cast products and services normally associated with pre-cast concrete construction with high quality finishes similar to that indicated on drawings.

1.05 DELIVERY, STORAGE, AND HANDLING

A. General: Pre-cast members shall be handled to position consistent with their shape and design; they shall be lifted and supported from design incorporated support points and provided with strong backs and other devices as required. Lifting or handling equipment shall be capable of maintaining units during manufacture, storage, transportation, erection, and in position for fastening.

B. Blocking and supports, lateral restraints and protective materials during transport and storage shall be clean, non-staining, without causing harm to exposed surfaces, including temporary support to prevent bowing and warping. Lateral restraints shall be provided to prevent undesirable horizontal movement. Edges and exposed faces of members shall be protected to prevent straining, chipping, or spalling of concrete.

C. Units shall be marked with date of production and final position in structure in location not visible after erection.

D. Pre-cast units shall be stored off the ground in a manner to prevent warpage and they shall be protected from weather, marring, and overload.

E. Stainless Steel Hardware: Stainless steel hardware shall be transported, handled, stored, and protected in wood crates.

PART 2 – PRODUCTS

2.01 MATERIALS

A. Cement: ASTM C150 or ASTM C595.

B. Aggregates: ASTM C33 and ASTM C330, except that the requirements for grading shall not apply.

C. Admixtures: May be used provided such admixtures are not injurious to other products used in the concrete.

D. Chemical Admixtures: ASTM C494

E. Fly Ash and Pozzolanic Admixture: ASTM C618
   1. Water: Used for curing, washing, aggregate, or mixing concrete shall be clean and free of injurious amounts of oil, acids, alkalis, salts, organic materials, or other substances that may be incompatible with concrete or steel.

F. Steel Reinforcement:
   1. Wire ASTM A82 or ASTM A496
   2. Wire Fabric ASTM A185 or ASTM A497
   3. Bars ASTM A184, ASTM A615, ASTM A616, ASTM A617 or ASTM A706

2.02 DESIGN REQUIREMENTS

A. Design Method: The elastic method of structural design or the ultimate strength method of reinforced concrete design as outlined in ACI 318 shall be used to design the concrete sections, including the reinforcement required, when the structure is subjected to the loading conditions covered in Practice C857.

B. Access Openings: The structural design shall take into consideration the number, placement, and size of access openings.

C. Floors: The minimum floor thickness resulting from slope shall be considered as nominal floor thickness in the structure.

D. Terminators, Knockouts and Sumps: Duct terminators, knockouts and sumps shall be designed to carry the loads imposed upon them. The basic structure shall be designed to carry all imposed loads with knockouts removed.

E. Placement of Reinforcement: The design concrete cover for reinforcing bars, mats or fabric shall not be less than ¾-inch (19 mm) subject to the requirements of Section 2.02.

F. Concrete Strength: The minimum specified compressive strength for design shall be 4,000 psi (21 MPa) at 28 days of age. Compressive-strength tests should be made in accordance with Practices C31 and C192 and Test Methods C39 and C42.

G. Joints: Joints in sectional precast concrete structure shall be designed so as to be self-aligning when assembling sections of the structure.
   1. The manufacture shall provide a single joint design on all units of the same size and type to ensure interchangeability.

H. Lifting Devices: Design of embedded lifting devices shall conform to requirements as specified in 8.4 under Special Loading Considerations of Practice ASTM C890.

I. Pickup Points and Boxouts: Pickup points, boxouts and inserts on panel faces and surfaces to be exposed are prohibited except as approved.

J. Traffic Loads: Structure and access hatches shall be designed for HS-20-44 traffic wheel loads per AASHTO as last revised, including a 30% impact factor.

2.03 MANUFACTURE

A. Forms: Forms shall be accurately constructed and strong enough to maintain the structure's dimensions within the tolerances given in Section 2.4. Forms should be constructed in such a manner as to minimize the seepage of water. All casting surfaces shall be smooth nonporous material.

B. Cleaning and Oiling: Forms shall be cleaned before each use. New forms shall be free of paint or other protective coatings that might cling to the surface of the structure. Releasing agents applied to the form to aid in breaking the bond between the form and the concrete shall not be injurious to the concrete.

C. Reinforcement: Steel reinforcement shall conform to the requirements of this specification and shall be securely positioned in the form to maintain design concrete cover given in Section 2.2 during concrete placement. All chairs, bolsters, braces and spacers in contact with form and reinforcing rod shall be of material that will not deteriorate.

D. Mixture: The aggregates shall be sized, graded, proportioned, and thoroughly mixed in a batch mixer with proportions of cement and water as will produce a homogeneous concrete having the required specified compressive strength. If Ready-Mix concrete is used, it shall be in accordance with Specification C 94.

E. Concrete Placement: Concrete shall be deposited as nearly as practicable in its final position. Concrete shall be placed in the form at a rate such that the concrete is plastic at all times and flows readily into all parts of the form and around all reinforcement steel and embedded fixtures without segregation of materials. Concrete that has partially hardened or has been contaminated by foreign material shall not be deposited in the form.

F. Curing: Structures shall be cured by an accepted industry method that will develop the required 28-day compressive strength without affecting the long-term durability of the concrete.

2.04 PERMISSIBLE VARIATIONS

A. Dimensional Tolerances: The length, width, height, or diameter measurements of the structure when measured on the inside surface shall not deviate from the design dimensions more than the following:

Dimension	**Tolerance**
0 to 5-feet (0 to 1.5 m)	+/- 1/4 inch (+/- 6 mm)
5 to 10-feet (1.5 to 3.0 m)	+/- 3/8 inch (+/- 10 mm)
10 to 20 feet (3.0 to 6.1 m)	+/- 1/2 inch (+/- 13 mm)
20 feet (6.1 m) and over	as agreed upon between manufacturer and purchaser

B. Squareness Tolerance: The inside of the precast concrete component shall be square as determined by diagonal measurements. The difference between such measurements shall not exceed the following:

Measured Length	**Allowable Difference**
0 to 10 feet (0 to 0.3 m)	+/- 1/2 inch (+/- 13 mm)
10 to 20 feet (3.0 to 6.1 m)	+/- 3/4 inch (+/- 19 mm)
20 feet (6.1 m) and over	as agreed upon between manufacturer and purchaser

C. Joint Surfaces: The inside joint seam gap between two sections placed together without a joint sealant shall not exceed 3/8-inch (9.5 mm).

D. Insert Location: Insert locations for attachments in each component shall not deviate individually or cumulatively more than ± 1/8-inch (3.18 mm) from dimensions on specification drawings.

E. Reinforcement Location: With reference to thickness of wall or slab, reinforcement shall be within ± ¼-inch (6.3 mm) of the design location, but in no case shall the cover be less than ¾-inch (19 mm). The reinforcement spacing shall not vary more than one tenth of the designed bar spacing nor exceed 1½-inch (38 mm) in variation, except for welded wire mesh which shall conform to Specifications A185 or A497.

F. Slab and Wall Thickness: The slab and wall thickness shall not be less than that shown in the design by more than 5% or 3/16-inch (4.8 mm), whichever is greater. A thickness greater than that required in the design shall not be a cause for rejection.

2.05 REPAIRS

A. Precast concrete structures may be repaired. Repairs shall be performed by the manufacturer, in such a manner as to ensure that the repaired structure conforms to the requirements of this specification.

2.06 INSPECTION

A. The quality of material, process of manufacture, and the finished structure shall be subject to inspection at any time by the purchaser or his representative.

2.07 REJECTION

A. Precast concrete structures or sections of structures shall be subject to rejection upon failure to conform to any specified requirements contained herein, or if any of the following imperfections occur:
   1. Defects that indicate any imperfect concrete mixing and molding, or
   2. Surface defects indicated by honeycombed or open-texture and damaged areas where such defects would affect the structural adequacy.

2.08 CERTIFICATION

A. At the request of the purchaser, the manufacturer shall, prior to the actual delivery of a structure, furnish a statement giving the source and type of cement, the source and specific gravities of the aggregates, the concrete mix proportions, strength, type, amount, and name of admixtures and mill certificates for the reinforcement steel used in manufacture.

2.09 MARKING

A. The weight shall be marked on the outside of each component section.

B. The purchaser may request additional information to be marked on the component section when ordering.

C. The method of marking shall be agreed upon between the purchaser and the supplier prior to ordering.

PART 3 – EXECUTION

3.01 INSTALLATION

A. Erection:
   1. The units shall be erected in accordance with approved shop/erection drawings without damage to shape or finish or adjacent work. Unless otherwise shown, members shall be erected level and plumb within allowable tolerances.
   2. The CONTRACTOR shall align and maintain uniform horizontal joints as erection progresses, provide approved shims and wedges as required, and when members required adjustment beyond design or tolerance criteria, discontinue affected work. Units shall be secured in place and field welds; scratches and otherwise damaged steel surfaces shall be touched up.

3. Pickup points, boxouts, inserts and bearing surfaces shown shall be grouted with non-shrink grout in accordance with these Specifications. The color and texture of concrete surfaces of adjacent areas shall be finished to match in the same plane.

3.02 PROTECTION

A. Adjacent surfaces shall be protected from damage during sealing and cleaning operations and against damage, disfiguration, or discoloration from subsequent operations. Noncombustible shielding shall be used during welding operations.

END OF SECTION

SECTION 03 6000 – GROUTING

PART 1 – GENERAL

1.01 THE REQUIREMENT

A. Provide and place grout in accordance with the Contract Documents.

B. Section Includes:
   1. Concrete Mortar
   2. Grout
   3. Dry-pack Mortar
   4. Non-shrink Grout
   5. Epoxy grout
   6. Non-shrink epoxy grout

C. Refer to the applicable Sections of Division 03 – Concrete.

1.02 REFERENCES

A. American Society for Testing and Materials (ASTM):

C109	Compressive Strength of Hydraulic Cement Mortars (using 2 inch or 50 millimeter cube specimens)
C230	Flow Table for Use in Tests of Hydraulic Cement
C531	Liner Shrinkage and Coefficient of Thermal Expansion of Chemical-Resistant Mortars, Grouts, Monolithic Surfacing and Polymer Concretes
C579	Compressive Strength of Chemical-Resistant Mortars and Monolithic Surfacing
C827	Change in Height at Early Ages of Cylindrical Specimens from Cementitious Mixtures
C939	Flow of Grout for Preplaced-Aggregate Concrete (Flow Cone Method)
C1090	Measuring Change in Height of Cylindrical Specimens from Hydraulic-Cement Grout
C1107	Packaged Dry, Hydraulic-Cement Grout (non-shrink)
C1181	Compressive Creep of Chemical-Resistant Polymer Machinery Grouts

1.03 SUBMITTALS

A. Furnish submittals in accordance with Section 01 3300 – Submittal Procedures.

B. Grout: Submit manufacturer's Literature and certified test data prior to installation of any grout mixes.

1.04 DELIVERY, STORAGE, AND HANDLING

A. All materials shall be delivered to the jobsite in their original, unopened packages or containers, clearly labeled with the manufacturer's product identification and printed instructions.

B. All materials shall be stored in a cool dry place and in accordance with the manufacturer's recommendations.

C. All materials shall be handled in accordance with the manufacturer's instructions.

1.05 PROJECT/SITE CONDITIONS

A. Refer to manufacturer's literature or contact the manufacturer for any special physical or environmental limitations that may be required for use of products.

1.06 WARRANTIES

A. Non-shrink Grout: The manufacturer shall warranty that the non-shrink grout will never go below its initial placement volume when tested in accordance with ASTM C1107.

B. Non-shrink Epoxy Grout: The manufacturer shall warranty that the non-shrink epoxy grout will show negligible shrinkage or expansion when tested in accordance with ASTM C531.

PART 2 – PRODUCTS

2.01 MATERIALS

A. Concrete Mortar:
   1. General: Consist of concrete mixture with coarse aggregate removed and water quantity adjusted as required.
   2. At Exposed Concrete Surfaces Not to Be Painted or Submerged in Water: White Cement.

B. Grout: Consist of mixture of Portland cement and sand.

C. Dry-pack:
   1. Mortar consists of mixture of Portland cement and sand.
   2. Hydraulic Cement Manufacturers
      a. Aqua Plug
      b. Unitex Hydraulic Cement
      c. Thoro Water Plug

D. Non-shrink Grout:
   1. Manufacturers: One of the following or ENGINEER-approved equal:
      a. Five Star Products, Inc., Fairfield, CT, Five Star Grout.
      b. Master Builders, Inc., Cleveland, OH, Masterflow 928.
      c. L&M Construction Chemicals, Inc., Omaha, NE, CRYSTEX
   2. Non-shrink grout shall be a proportioned and prepackaged cement-based mixture. It shall contain no metallic particles such as aluminum powder and no metallic aggregate such as iron filings. It shall require only the addition of potable water.
   3. Potable water for pre-soaking, mixing, and curing shall be clean and free of oils, acids, alkalis, organics, and any other deleterious matter.
   4. Bleeding: Non-shrink grout shall be free from the emergence of mixing water from within or the presence of water on its surface.
   5. Non-shrink grout shall be in accordance with ASTM C1107.
   6. Consistency: Non-shrink grout shall remain at a minimum flowable consistency for at least 45 minutes after mixing at 45°F to 90°F when tested in accordance with ASTM C230. If at a fluid consistency, it shall be verified in accordance with ASTM C939.
   7. Dimensional Stability (height change): Non-shrink grout shall be in accordance with ASTM C1107, volume-adjusting Grade B or C at 45°F to 90°F. It shall show 90 percent or greater bearing area under bases or baseplates.
   8. Compressive Strength: Non-shrink grout shall show minimum compressive strengths at 45°F to 90°F in accordance with ASTM C1107 for various periods from the time of placement, including 5,000 pounds per square inch at 28 days when tested in accordance with ASTM C109 as modified by C1107.

E. Epoxy Grout:
   1. Consist of mixture of epoxy and sand.
   2. Sand: Clean, bagged, graded, and kiln dried silica sand.

F. Non-shrink Epoxy Grout:
   1. Manufacturers: One of the following or equal:
      a. Five Star Products, Inc., Fairfield, CT, Five Star Epoxy Grout.
      b. Master Builders, Inc., Cleveland, OH, Masterflow 648 CP Plus.
      c. L&M Construction Chemicals, Inc., Omaha, NE, EPOGROUT.

2. Non-shrink epoxy grout shall be a 100-percent-solids, pre-measured, prepackaged system containing a two-component thermosetting epoxy resin and inert aggregate
3. Consistency: Non-shrink epoxy grout shall maintain a flowable consistency for at least 45 minutes at 70°F.
4. Dimensional Stability (height change):
   a. Non-shrink epoxy grout shall have negligible shrinkage or expansion (less than 0.0006 in/in) when tested in accordance with ASTM C531.
5. Compressive Strength: Non-shrink epoxy grout shall show a minimum compressive strength of 10,000 pounds per square inch at 24 hours and 14,000 pounds per square inch at 7 days when tested in accordance with ASTM C579, Method B.
6. Compressive Creep: The compressive creep for non-shrink epoxy grout shall not exceed 0.0027 in/in when tested under a 400 pounds per square inch constant load at 140°F in accordance with ASTM C1181.
7. Thermal Capability: The coefficient of thermal expansion for non-shrink epoxy grout shall not exceed 0.000018 inches per inch per degree Fahrenheit when tested under ASTM C531, Method B.

2.02 MIXES

A. Concrete Mortar Mix:
   1. Use water-cement ratio that is no more than that specified for concrete being repaired.
   2. At Exposed Concrete Surfaces Not to Be Painted or Submerged in Water: Use sufficient white cement to make color of finished patch match that of surrounding concrete.

B. Grout Mix:
   1. For Concrete Repair: Mix in same proportions used for concrete being repaired, with only sufficient water to give required consistency for spreading.
   2. For Spreading over the Surfaces of Construction or Cold Joints: Mix with no more water used than allowed by water-cement ratio specified for concrete.
   3. For Other Applications: Mix in proportions by weight of one part cement to four parts of concrete sand.

C. Dry-pack Mortar and Hydraulic Cement Mix: Use only enough water so that resulting mortar will crumble to touch after being formed into a ball by hand.

D. Non-shrink Grout: Mix in accordance with manufacturer's installation instructions such that resulting mix has fluid or flowable consistency and is suitable for placing by pouring.

E. Epoxy grout: Mix in accordance with manufacturer's installation instructions for mixing.

F. Non-shrink Epoxy Grout: Mix in accordance with manufacturer's installation instructions.

PART 3 – EXECUTION

3.01 EXAMINATION

A. Inspect concrete surfaces to receive grout or mortar and verify that they are free of ice, frost, dirt, grease, oil, curing compounds, paints, impregnations and all loose material or foreign matter likely to affect the bond or performance of grout or mortar.

B. Inspect baseplate and anchor systems for rust, oil, and other deleterious substances that may affect the bond or performance of grout.

C. Confirm that newly placed concrete has been cured sufficiently to attain its design strength and limit further shrinkage.

D. Verify that temperature of cementitious or epoxy grout does not exceed manufacturer's recommendations.

3.02 PREPARATION

A. Surface Preparation:
   1. Roughen all concrete surfaces by heavy sandblasting, chipping, or other mechanical means to assure bond. Loose or broken concrete shall be removed.
   2. All grease, oil, dirt, curing compounds, laitance, and other deleterious materials that may affect bond that were identified in the inspection process shall be completely removed from concrete and bottoms of baseplates. All metal surfaces should have a 2- to 3-mil peak-to-valley profile for epoxy grouts.
   3. For cementitious mortars and grouts, concrete surfaces shall be saturated surface dry. Any standing water shall be removed prior to placing grouts.
   4. For epoxy grouts, do not wet concrete surfaces with water. Instead, where required, wet surfaces with epoxy for horizontal work or epoxy gel for vertical or overhead work prior to placing epoxy grouts.

B. Forms and Headboxes for Grouts (Cementitious or Epoxy):
   1. Forms for grouts shall be built of material with adequate strength to withstand the placement of grouts.
   2. Forms must be rigid and liquid tight. All cracks and joints shall be caulked with an elastomeric sealant. All forms shall be lined with polyethylene for easy grout release. Forms carefully waxed with two coats of heavy-duty paste wax shall also be acceptable.
   3. Forms shall be 4 to 6 inches higher than the baseplate on one side of the baseplate configuration when using head pressure for placement.
   4. A sufficient number of headboxes shall be built to facilitate placement of grouts.
   5. Air relief holes a minimum 1/8 inch in diameter shall be provided when required by a baseplate configuration to avoid entrapping air underneath.

3.03 APPLICATION

A. Cement Mortar and Grout:
   1. For Defective Concrete Repair:
      a. Filling: Filling of voids around items through the concrete.
      b. Grout Spreading: Spread over construction joints, cold joints, and similar type items.
   2. Concrete Surfaces: Apply epoxy bonding agent to clean, roughened, and dry surfaces before placing mortar or grout.
   3. Placing:
      a. Exercise particular care in placing Portland cement mortar or grout since they are both required to furnish structural strength or impermeable water seal or both.
      b. Do not use cement mortar or grout that has not been placed within 30 minutes after mixing.

B. Epoxy Grout:
   1. Apply in accordance with manufacturer's installation instructions.
   2. Use where specified herein or where indicated on the Drawings.

3.04 PLACEMENT

A. The CONTRACTOR shall arrange to have a grout manufacturer's representative present for a preconstruction meeting and during the initial grout placement. Grout shall only be installed after the final equipment alignment is correct and accepted by the ENGINEER.
   1. Grouts shall be mixed in accordance with the manufacturer's recommendations.

2. A mortar mixer with moving paddles shall be used for mixing grouts. For cementitious grouts, pre-wet the mixer and empty out excess water before beginning mixing.
3. Cementitious Grouts:
    a. Non-shrink cementitious grout shall be added to a pre-measured amount of water that does not exceed the manufacturer's maximum recommended water content.
    b. Mix cementitious grouts per manufacturer's instructions for uniform consistency.
    c. Grouts may be dry packed, flowed, or pumped into place. All baseplate grouting shall take place from one side of a baseplate to the other to avoid trapping air. Do not overwork grouts.
    d. Do not retemper grout by adding more water after stiffening.
    e. Hydrostatic head pressure shall be maintained by keeping the level of the grout in the headbox above the bottom of the baseplate. The headbox should be filled to maximum level and the grout worked down to top of baseplate.
4. Epoxy Grouts:
    a. Epoxy grouts shall be mixed in complete units. Do not vary the ratio if components or add solvent to change the consistency of the mix.
    b. Pour the hardener into the resin and mix for at least one minute and until each mixture is uniform in color. Pour the chemical components into the mortar mixer wheelbarrow and add the aggregate. Mix until aggregate is uniformly wetted. Overmixing will cause air entrapment in the mix.
    c. All epoxy grout shall be flowed into place using a headbox. All grouting shall take place from one side of a baseplate to the other in a continuous flow to avoid trapping air.
    d. Hydrostatic head pressure shall be maintained by keeping the level of grout in headboxes above the bottom of baseplates. Headboxes shall be filled to the maximum level and grout worked down to the bottom of the baseplates.
    e. Epoxy grouts shall not be cut back after setting. The final level of grout will be as installed with all chamfer edges built into the formwork.

3.05 CURING

A. Cementitious Grouts:
1. Grouts must be cut back to the lower edge of baseplates after reaching initial set. Provide a 45-degree angle cut back.
2. Clean equipment and tools as recommended by the grout manufacturer.
3. Cure Grouts in accordance with the manufacturer's specifications and recommendations. Keep grout moist for a minimum of 3 days. The method needed to protect grouts will depend on temperature, humidity, and wind. Wet burlap, a soaker hose, sun shading, ponding and in extreme conditions, a combination of methods shall be employed.
4. Grouts shall be maintained above 40°F until they have attained a compressive strength of 3,000 pounds per square inch or above 70°F for a minimum of 24 hours to avoid damage from subsequent freezing.

B. Epoxy Grouts:
1. Cure grouts in accordance with manufacturer's specifications and recommendations. Do not wet cure epoxy grouts.
2. Consult the manufacturer for appropriate cure schedule. In no case should any surface in contact with grout be allowed to fall below 50°F for a minimum of 48 hours after placement.
3. Equipment and tools shall be cleaned immediately with a strong liquid detergent and water solution before grout hardens.

3.06 FIELD QUALITY CONTROL

A. Non-shrink grouts shall be tested for 84 hour compressive strength in accordance with ASTM C109.

B. Non-shrink grouts shall be tested for 24 hour compressive strength in accordance with ASTM C579 (Method B).

END OF SECTION

SECTION 09 9100 – PAINTING

PART 1 – GENERAL

1.01 THE REQUIREMENT

A. Provide all labor, materials, equipment, and services required to do all painting (excluding items otherwise listed in the applicable Sections of Division 09 – Finishes), including preparation, priming and protection of finished surfaces. An extensive and comprehensive painting job will be required and shall include all surfaces which normally are painted.

B. The intent of these Specifications is to obtain the material and workmanship necessary to produce an adequate and acceptable job, and is intended to describe the requirements for both shop and field painting.

C. The intent of this Specification Section is to include all items which are to receive painting and have not been included otherwise in these Specifications.

D. The intent of this Specification shall be to paint all exposed structural steel, miscellaneous ferrous metal, lintels, equipment, piping, all exterior masonry walls, and all other work obviously required or noted to be painted unless otherwise specified (see Section 2.01). The omission of minor items in the schedule of work shall not relieve the obligation to include such items where they come within the general intent of the Specifications as stated herein. All interior surfaces and equipment which have been previously painted shall be repainted or recoated following the proper surface preparation as shown on the Drawings.

E. Review and examine all Divisions and Sections of these Specifications for any additional painting requirements and/or additional surfaces or items to be painted.

F. Apply specified finish coats of paint to all pre-primed work and complete finishing system for unprimed work required to be painted.

G. Backprime, with specified interior first coat material all surfaces of finish trim which will be concealed after installation.

H. Apply specified finish coats of paint to all prepainted surfaces which require only a finish coat. Otherwise, the complete system (as given in Section 2.1) shall be administered.

1.02 RELATED WORK

A. Wherever detailed painting requirements are covered under an equipment or product Specification, the Specifications herein other Sections, govern with respect to surface preparation, paint materials, coats, thicknesses, and coverage.

1.03 ITEMS NOT REQUIRING FIELD PAINTING

A. All new galvanized and stainless steel surfaces (except where noted on Drawings).

B. Valves, fittings, and appurtenances in small diameter plastic piping (less than 3 inches).

C. Prefinished items.

D. Plain copper (except as required for color coding) and stainless steel.

E. Aluminum except where otherwise designated and required to prevent corrosion at contact with dissimilar materials.

F. Concrete floors except where noted.

G. Exterior concrete surfaces except where noted.

H. Finish hardware.

I. Concealed from view items (except where required for color coding) and surfaces, except as specified herein or where previously painted.

J. Packing glands and other adjustable parts and nameplates of mechanical equipment.

K. Mechanical equipment (i.e. pumps, blowers, actuators, etc.)

1.04 DEFINITIONS

A. The term “paint” as used herein includes enamels, epoxy, paints, sealers, fillers, emulsions, and other coatings.

B. MDMTPC = Minimum dry mil thickness per coat.

C. MDFT = Minimum dry film thickness.

D. SSPC = Steel Structures Painting Council.

1.05 QUALITY ASSURANCE

A. Qualification of Painters: All painting shall be done by qualified, skilled, experienced craftsmen. In the acceptance or rejection of completed painting, no allowance will be made for lack of skills on the part of the craftsmen.

B. Paint Labels: Labels on paint containers shall include the following:
   1. Manufacturer's name
   2. Generic type of paint
   3. Manufacturer's stock number
   4. Color
   5. Instructions for thinning where applicable

C. Field Quality Control: Paint film thickness shall be subject to measurement by electrometer, wet film gauge, low or high voltage meter, and/or ENGINEER approved measuring instruments. If dry film thickness is found to be less than specified, or coverage is not uniform, apply additional paint to correct the thickness or appearance at no additional cost to the Owner.

D. Compatibility:
   1. Compatibility of all paints used is required. A compatible paint will be considered a paint which precludes adverse effects related to bonding, drying delamination, scaling, lifting, and bleeding.
   2. In cases where shop-applied primers and coatings on materials and equipment furnished by suppliers are products different from those described in the Specifications, compatibility shall be verified with the specified field-applied coating system.
   3. Where thinning is necessary, only the products of the manufacturer furnishing the paint, and products for thinning purposes only, will be allowed.

E. Thickness and Spreading Rates:
   1. Minimum dry mil thicknesses per coat (MDMTPC) and/or spreading rates in square feet per gallon shall be governed by the manufacturer's current data sheets or literature containing recommendations or instructions regarding these values. These recommended dry mil thickness and/or spreading rate values will be considered requirements to be met same as if set out herein these Specifications and Contract Documents. Do not exceed manufacturer's recommended coverage rates.
   2. The number of coats to be applied are specified herein and shall govern. Where the total dry film thickness is specified, this thickness shall govern over the MDMTPC.

1.06 PRODUCT DELIVERY, HANDLING AND STORAGE

A. Delivery: All materials shall be brought to the project site in the original sealed and labeled containers of the paint manufacturer. All labels shall be legible and intact at time of use.

B. Manufacturer's Instructions: Paint manufacturer's written instructions for proper surface preparation, mixing, thinning, application and drying shall be furnished with the paint, and strictly followed.

C. Storage of Materials:
   1. Store only acceptable materials on project site.
   2. Store only in a suitable and designated area restricted to the storage of paint materials and related equipment.
   3. Comply with all applicable health and fire regulations regarding the storage of paint materials.
   4. Storage of material shall comply with the manufacturer's specifications; however, storage shall be at a minimum temperature of 50°F.

D. Protection of Materials:
   1. Take all necessary precautions to ensure the safe storage and use of paint materials and the prompt and safe disposal of waste.
   2. Painting wastes shall be properly deposited in containers made for this purpose. Do not use plumbing fixtures for disposing of paints wastes.
   3. Take all necessary precautions to protect paint materials before, during and after application and to protect the finished work.

E. Replacement: In the event of damage to paint materials, immediately make all replacements necessary at no additional cost.

F. Product delivery, handling and storage shall be in accordance with Part 1 of this Specification.

1.07 JOB CONDITIONS

A. Environmental Requirements:
   1. Comply with manufacturer's recommendations as to the environmental conditions under which painting systems can be applied.
   2. Do not apply finish in areas where dust and/or mist is being generated.

B. Climatic Conditions: Paint shall not be applied if:
   1. The ambient temperature or temperature of the surface to be painted is below 50°F or below the temperature recommended by the paint manufacturer.
   2. The relative humidity is above 85 percent.
   3. The relative humidity is such that the paint will not dry properly in accordance with the manufacturer's instructions.

C. Projection:
   1. Protect with drop cloths, masking or other acceptable means all surfaces which could be damaged in function or appearance by paint, including surfaces not being painted concurrently and surfaces not to be painted.
   2. Hardware, accessories, fixtures, and similar items shall be removed and replaced after completion of painting.
   3. Spray painting will not be permitted when it will cause damage to adjacent of otherwise located surfaces.
   4. All paint splatters on glass shall be wiped off immediately.

PART 2 – PRODUCTS

2.01 PAINT SYSTEMS

A. General:
   1. All paints of a system shall be by one (1) manufacturer.
   2. "Lift" tests may be requested on various surfaces to be painted to assure bonding compatibility.
   3. Paints containing lead, or other "dangerous" materials, that surpass federal maximum levels shall not be allowed. Oil shall be pure boiled linseed oil.

2.02 COLORS

A. The manufacturer shall be able to furnish all paints for exposed surfaces in a wide range of colors including lighter and darker shades of these colors which may be selected on various surfaces, if not included in the following codes (also note, the below listed may be included in the requirements of the applicable Sections of Division 09 – Finishes):
   1. Safety Color Codes: Comply with Occupational Safety and Health Administration Standards, as applicable, regarding safety color codes.
   2. Piping Color Codes: Colors for process pipe coding shall be in accordance with these Specifications.

PART 3 – EXECUTION

3.01 INSPECTION

A. Examine surfaces scheduled to receive paint and/or coating finishes for conditions that will adversely affect application, permanence, or quality of work and which cannot be put into an acceptable condition through surface preparation.

B. Do not proceed with surface preparation or painting application until conditions are suitable.

C. If surfaces are not thoroughly dry or if they cannot be put in proper conditions to receive paint by customary cleaning methods, the painting applicators shall notify the ENGINEER in writing, requesting necessary corrections.

D. Review the specified or approved painting systems and bring any questions or doubts as to the proper performance to the ENGINEER. Otherwise, assume the responsibility for providing the desired results.

3.02 ACCEPTANCE OF SURFACES

A. The commencement of painting work in any area or space will be construed as acceptance of the surface as being satisfactory.

3.03 SURFACE PREPARATION

A. General:
   1. All surfaces shall be thoroughly cleaned and free of dust, rust, mill scale, loose paint, or oily materials.
   2. References to SSPC refer to Steel Structures Painting Council specifications.
   3. Surfaces shall be primed and/or treated, as specified, as soon after completion of surface preparation as practical, but in any event before any visible or detrimental corrosion or contamination can occur. A prepared surface, which becomes corroded or contaminated, shall be re-prepared before treating and/or priming.

B. Non-submerged Non-Galvanized Structural Steel: All new non-galvanized structural steel for non-submerged service shall have their surfaces prepared according to SSPC-SP6-63, Commercial Blast Cleaning.

C. Submerged Non-Galvanized Structural Steel: All new non-galvanized structural steel and fabricated metals for submerged service of high temperature service shall have their surfaces prepared according to SSPC-SP10-63T Near White Metal Blast Cleaning.

D. Unprimed Metal Surfaces: All unprimed metal surfaces and miscellaneous fabricated metals (exclusive of structural steel and galvanized metal) to be painted shall be thoroughly cleaned according to SSPC-SP2-63 Hand Tool Cleaning or SSPC-SP3-63 Power Tool Cleaning, unless specifically required elsewhere in these Specifications.

E. Non-Ferrous Metals: Non-ferrous metals surface preparation shall be not less than that required by the paint manufacturer.

F. Concrete and Masonry:
   1. All concrete and masonry surfaces shall be cleaned and free from loose particles.
   2. Concrete floors to be painted shall be etched with a 10 percent solution of muriatic acid. If the concrete surface is exceedingly dense, a greater strength acid or a second etching will be required. After etching for a minimum of 30 minutes, wash thoroughly with water to remove all traces of acid. Allow to thoroughly dry at least 72 hours.
   3. Submerged concrete to be coated shall have their surfaces prepared by a light sandblast (Brush Blast), to remove loose coating and provide a textured surface to enhance adherence of the new coating. No sandblasting shall be done on the job in areas containing pumps, motors or other equipment that could be damaged by infiltration of sand particles.

G. Wood Surfaces: Wood surfaces shall be thoroughly cleaned of all extraneous matter and all cracks, nail holes, and other defects properly filled and smoothed. Wood trim shall be sanded to fine finish and wiped clean of dust.

3.04 SHOP PRIMING

A. Shop priming shall be done with primers that are guaranteed by the equipment manufacturer to be compatible with the finish paints to be used.

B. The CONTRACTOR shall coordinate all paint materials supplied in the shop and field.

3.05 APPLICATION

A. On metal surfaces apply each coat of paint at the rate specified by the manufacturer to achieve the minimum dry mill thickness required. One gallon of paint as originally furnished by the manufacturer shall not cover a greater area when applied by spray gun than when applied un-thinned by brush. Deficiencies of film thickness shall be corrected.

B. On masonry, the application rates will vary according to surface texture; however, in no case shall the manufacturer's stated coverage rate be exceeded.

C. On porous surfaces, it shall be the painter's responsibility to achieve a protective and decorative finish either by decreasing the coverage rate of by applying additional coats of paint.

D. Evenly brush out each finish coat and permit to dry per manufacturer's recommendation before applying any subsequent coats.

E. All paints and catalogs shall be maintained at a minimum manufacturer's application temperature before applying.

F. Successive coats of paint shall be tinted so as to make each coat easily distinguishable from each other with the final undercoat tinted to a darker shade than the finish coat.

G. Finish surfaces shall not show brush marks or other irregularities. Undercoats shall be thoroughly and uniformly sanded with No. 00 sandpaper or equal to remove defects and provide a smooth even surface.

H. Painting shall be continuous and shall be accomplished in an orderly manner so as to facilitate inspection. Materials subject to weathering shall be prime coated as quickly as possible. Surfaces of exposed members that will be inaccessible after erection shall be cleaned and painted before erection.

I. All surfaces to be painted as well as the atmosphere in which painting is to be done shall be maintained at the conditions recommended by manufacturer by heating and ventilating, if necessary, until each coat of paint has hardened. Any defective paint shall be removed and the surface repainted.

J. Perform all required back priming work before items are installed.

3.06 REINSTALLATION OF REMOVED ITEMS

A. Following completion of painting in each space, promptly reinstall all items removed for painting, using only workmen skilled in the particular trade.

3.07 CLEANING

A. During the progress of Work, do not allow the accumulation of empty containers or other excess items except in areas specifically reserved for that purpose.

B. Take all precautions to prevent accidental spillage of paint materials. In the event of spilling, immediately remove all spilled materials and the waste and other equipment used to clean up the spill, and wash surfaces to their original undamaged condition.

C. Touch-up and restore finish where damaged.

D. Remove all trash and accumulated materials of a painting nature from premises at the completion of the Work.

E. Paint spots, oil or stains upon adjacent surfaces shall be removed. Any damage to Work of other trades or equipment caused from painting shall be made good at no additional expense.

F. Do not mark surface finish of items being cleaned.

G. Leave entire job clean (including paint storage space).

3.08 FINAL INSPECTION

A. Protect all painted surfaces against damage until the date of final acceptance of the Work.

B. Conduct a final inspection of all painting work and repaint or retouch any areas or surfaces found deficient in complying with these Specifications.

END OF SECTION

SECTION 09 9700 – SPECIAL COATINGS

PART 1 – GENERAL

1.01 THE REQUIREMENT

A. Provide all labor, materials, equipment, and services required for accomplishing special coatings on equipment, tanks, or piping in accordance with these Specifications and Contract Documents.

1.02 SPECIAL NOTICE

A. Because there exists in this project corrosive agents in the liquids and, in certain areas, in the atmosphere, special coatings for protecting the select equipment, structures, and appurtenances are required. The service requirements of the coatings are harsh and only products with an extended history of successful application will be acceptable.

B. Related Sections: Work shall conform to the requirements in applicable Sections of the following Divisions:

Division 01 – General Requirements
Division 05 – Metals
Division 09 – Finishes

C. Wherever detailed coating/painting requirements are covered under an equipment or product specification, the Specifications herein, shall govern over those coating requirements, with respect to surface preparation, coat materials, coats, thickness, and coverage with the exception of manufacturer's supplied coatings and protection. Determine if the manufacturer's supplied coatings are adequate.

1.03 ACCEPTABLE PRODUCTS

A. Specified products are specified as the standard of quality. Products are listed to establish a minimum standard of quality. Equivalent materials of other manufacturers may be submitted on written approval of the ENGINEER. As part of the proof of quality and performance equivalency, the ENGINEER will require at the cost of the CONTRACTOR, certified test reports from a nationally known, reputable, and independent testing laboratory conducting comparative tests as directed by the ENGINEER between the product specified and the requested substitution.

B. Requests for substitution shall include manufacturer's literature for each product giving name, product number, and generic type, descriptive information, solids by volume, recommended dry film thickness and certified lab test reports showing results to equal the performance criteria of the products specified herein. All materials must meet all local, state, and Federal regulations including and not limited to the Air Quality Management District. In addition, a list of five projects shall be submitted in which each product has been used and rendered satisfactory service.

1.04 ITEMS REQUIRING SPECIAL COATING

A. See Coating Schedules as listed in PART 2 – PRODUCTS.

1.05 ITEMS NOT REQUIRING SPECIAL COATING

A. The metal surfaces of stainless steel, chromium plate, galvanized and aluminum that are not now coated will not require field coating. Do not apply coating over any code-required labels, glass items, gauges, and name plates. It is also important not to coat any moving parts or operating units, valves or stems, or any mechanical and electrical parts such as valve and damper operators, linkages. It is the contactor's responsibility to protect any surface that is not to receive a coating.

1.06 QUALITY ASSURANCE

A. Qualification of Coaters: Qualification of Coaters: All coating shall be done by qualified, skilled, and experienced craftsmen. In the acceptance or rejection of completed coating, no allowance will be made for lack of skills on the part of the craftsmen.
   1. SSPC-QP-1 Certified - Field Application to Complex Industrial and Marine Structures
   2. SSPC-QP-3 Certified - Shop Painting Certification

B. Coating Labels: Labels on coating containers shall include the following:
   1. Manufacturer's name
   2. Generic type of coat
   3. Manufacturer's stock number
   4. Color
   5. Instructions for thinning where applicable

C. Field Quality Control: Coating film thickness shall be subject to measurement with electrometer, wet film gauge, low or high voltage meter and/or applicable measuring instruments acceptable to the ENGINEER. If dry film thickness is found to be less than specified, or coverage is not uniform, an additional coating to correct thickness or appearance at no additional cost shall be applied.

D. Compatibility:
   1. Compatibility of all coatings used shall be required. A compatible coating will be considered a coat, which precludes adverse effects related to bonding, drying delamination, scaling, lifting, and bleeding.
   2. In cases where shop-applied primers and coatings on materials and equipment furnished by suppliers are products different from those described in the Specifications, compatibility with the specified field-applied coating system shall be verified by the CONTRACTOR.
   3. Where thinning is necessary, only the products of the manufacturer furnishing the coating, and products for thinning purposes only, will be allowed.

E. Thickness and Spreading Rates:
   1. Minimum dry mil thickness per coat (MDMTPC) and/or spreading rates in square feet per gallon shall be governed by the manufacturer's current data sheets or literature containing recommendations or instructions regarding these values. These recommended dry mil thickness and/or spreading rate values will be considered requirements to be met same as if set out herein; these Do Not exceed manufacturer's recommended coverage rates.
   2. The number of coats to be applied are specified herein and shall govern. Where the total dry film thickness is specified, this thickness shall govern over the MDMTPC.

1.07 PRODUCT DELIVERY, HANDLING AND STORAGE

A. Delivery: All materials shall be brought to the job site in the original sealed and labeled containers of the coating manufacturer. All labels shall be legible and intact at time of use.

B. Manufacturer's Instruction: Coating manufacturer's written instructions for proper surface preparation, mixing, thinning, application and drying shall be furnished with the coating and strictly followed.

C. Storage of Materials:
   1. Store only acceptable materials on project site.
   2. Store only in a suitable and designated area restricted to the storage of coating materials and related equipment.
   3. Comply with all applicable health and fire regulations regarding the storage of coating materials.

4. Storage of material shall comply with the manufacturer's specifications; however, storage shall be at a minimum temperature of 50°F.

D. Protection of Materials:
   1. Take all necessary precautions to ensure the safe storage and use of coating materials and the prompt and safe disposal of waste.
   2. Coating wastes shall be properly deposited in containers made for this purpose.
   3. Take all necessary precautions to protect coating materials before, during and after application and to protect the finished work.

E. Replacement: In the event of damage to coating materials, immediately make all replacements necessary to the approval of the ENGINEER and at no additional cost.

F. Product delivery, handling and storage shall be in accordance with Part 1 of this Section and the manufacturer's recommendations.

1.08 JOB CONDITIONS

A. Environmental Requirements:
   1. Comply with manufacturer's recommendations as to environmental conditions under which coatings and coating systems can be applied.
   2. Do not apply finish in areas where dust and/or mist is being generated.

B. Climatic Conditions: Coating shall not be applied if:
   1. The ambient temperature or temperature of the surface to be coated is below 50°F or below the temperature recommended by the coating manufacturer.
   2. The relative humidity is above 85 percent.
   3. The relative humidity is such that the coating will not dry properly in accordance with the manufacturer's instructions.

C. Protection:
   1. Protect with drop cloths, masking or other acceptable means all surfaces which could be damaged in function or appearance by coating, including surfaces not being coated concurrently and surfaces not to be coated.
   2. Hardware, accessories, fixtures, and similar items shall be removed and replaced after completion of coating.
   3. Spray coating will not be permitted when it will cause damage to adjacent or otherwise located surfaces.
   4. All coating splatters on glass shall be wiped off immediately.

PART 2 – PRODUCTS

2.01 COATING SYSTEMS FOR STEEL - STRUCTURAL, TANKS, ROOF DECKING, PIPE, AND EQUIPMENT

A. Exterior Exposed:
   1. System Type: Aromatic Urethane Zinc-rich Primer/Epoxy/Polyurethane.
   2. Surface Preparation: SSPC-SP 6.
   3. Primer:
      a. Sherwin Williams Corothane Galvapac 2K @ 3.0 – 5.0 mils DFT 2K 100 for Low VOC
      b. Tnemec Series 90-97 Tneme Zinc @ 2.5-3.5 0 mils DFT. 94 H2O for Low VOC
   4. Intermediate Coat:
      a. Sherwin Williams Macropoxy 646; 4.0 – 8.0 mils DFT. 100 for Low VOC
      b. Tnemec Series N69 Hi-Build Epoxoline II; 4.0 to 6.0 mils DFT. L69 for Low VOC
   5. Finish Coat:

a. Sherwin Williams Hi Solids Polyurethane @ 3.0 – 5.0 mils DFT. 250 or 100 for Low VOC
b. Series 1075 Endura-Shield II; 2.5 to 3.5 mils DFT. 1095 for Low VOC

6. Total DFT: 9.5 to 14.5 mils.

B. Interior Exposed:
1. System Type: Epoxy.
2. Surface Preparation: SSPC-SP 6.
3. Primer:
a. Sherwin Williams Macropoxy 646; 4 – 8 mils DFT. M646 100 for Low VOC
b. Tnemec Series N69 Hi-Build Epoxoline II; 3.0 to 5.0 mils DFT. L69 for Low VOC
4. Finish Coat:
a. Sherwin Williams Macropoxy 646; 4 – 8 mils DFT. M646 100 for Low VOC
b. Tnemec Series N69 Hi-Build Epoxoline II; 4.0 to 6.0 mils DFT. L69 for Low VOC
5. Total DFT: 7.0 to 11.0 mils.

C. Immersion, Potable Water:
1. System Type: Epoxy.
2. Surface Preparation: SSPC-SP 10.
3. Primer:
a. Sherwin Williams Macropoxy 5500; 4.0 – 8.0 mils DFT.
b. Tnemec Series N140 Pota Pox Plus; 4.0 to 6.0 mils DFT. L140 for Low VOC
4. Intermediate Coat:
a. Sherwin Williams Macropoxy 5500; 4.0 – 8.0 mils DFT
b. Tnemec Series N140 Pota Pox Plus; 4.0 to 6.0 mils DFT. L140 for Low VOC
5. Finish Coat:
a. Sherwin Williams Macropoxy 5500; 4.0 – 8.0 mils DFT
b. Tnemec Series N140 Pota Pox Plus; 4.0 to 6.0 mils DFT. L140 for Low VOC
6. Total DFT: 12.0 to 18.0 mils.

Or

1. System Type: Ultra High Solids Epoxy.
2. Surface Preparation: Abrasive blast clean per SSPC-SP10, 2.5 – 4 mil profile
3. Primer:
a. For stripe coat application to all welds and irregular surfaces.
b. Sherwin Williams Macropoxy 5500; 4.0 – 6.0 mils DFT
c. Tnemec Series N140 Pota Pox Plus; 4.0 to 6.0 mils DFT. L140 for Low VOC
4. Finish Coat:
a. For finish coat application over all surfaces.
b. Sherwin Williams Sherplate PW or Duraplate UHS; 20.0 – 30.0 mils DFT
c. Tnemec Series 20 or 22; 20.0 - 30.0 mils DFT.
5. Total DFT: 20.0 to 30.0 mils

D. Interior/Immersion, Severe Exposure to H2S:
1. System Type: Modified Epoxy.
2. Surface Preparation: White Metal Blast SSPC-SP 5 with minimum 3.0-mil profile.
3. Primer/Finish (One or More Coats):
a. Sherwin Williams Duraplate 6100 or Novaplate 325; 30.0 – 40.0 mils DFT
b. Tnemec Series 435 Perma-Glaze; 30.0 to 36.0 mils DFT.
4. Total DFT: 30.0 to 36.0 mils.

E. Marginally Prepared Surfaces (Maintenance, Non-Immersion, Interior):
   1. System Type: Mastic epoxy, solvent or water based.
   2. Surface Preparation: In accordance with manufacturer's instructions.
   3. Primer:
      a. Sherwin Williams Macropoxy 646; 4 – 8 mils DFT. M646 100 for Low VOC
      b. Tnemec Series 27 WB Typoxy 4.0 to 6.0 mils DFT.
   4. Finish Coat:
      a. Sherwin Williams Macropoxy 646; 4 – 8 mils DFT. M646 100 for Low VOC
      b. Tnemec Series 27 WB Typoxy 4.0 to 6.0 mils DFT.
   5. Total DFT: 8.0 to 12.0 mils.

F. Marginally Prepared Surfaces (Maintenance, Non-Immersion, Exterior):
   1. System Type: Mastic Epoxy/Polyurethane.
   2. Surface Preparation: In accordance with manufacturer's instructions.
   3. Primer:
      a. Sherwin Williams Macropoxy 646; 4 – 8 mils DFT. M646 100 for Low VOC
      b. Tnemec Series 27 WB Typoxy 4.0 to 6.0 mils DFT.
   4. Finish Coat (Exterior):
      a. Sherwin Williams Hi Solids Polyurethane; 3.0 – 5.0 mils DFT; 250 or 100 for Low VOC
      b. Series 1075 Endura-Shield II; 2.5 to 3.5 mils. DFT 1095 for Low VOC
   5. Total DFT: 6.5 to 9.5 mils.

G. Below Ground Pipe (Heat Resistant to 375°F and Corrosion Resistant):
   1. System Type: Moisture Cure Urethane Zinc Rich Primer/Inorganic Hybrid water borne Epoxy
   2. Surface Preparation: Near White Metal Blast SSPC-SP-10 with an angular anchor profile of 1-2 mils.
   3. Primer:
      a. Sherwin Williams Corothane Galvapac 2K; 3.0 – 5.0 mils DFT. 100 for low VOC.
      b. Tnemec Series 90E-92 Tneme Zinc; 2.5 to 3.5 mils DFT.
   4. Intermediate Coat:
      a. Sherwin Williams N/A
      b. Tnemec Series 1224 Epoxoline WB @ 4.0 – 8.0 mils DFT
   5. Finish Coat:
      a. Sherwin Williams Sherglass FF; 8.0 - 16.0 mils DFT.
      b. Series 1224 Epoxoline WB; 4.0 – 8.0 mils DFT
   6. Total DFT: 10.5 to 19.5 mils.

Or

   1. System Type: Reinforced Novolac Epoxy
   2. Surface Preparation: Near White Metal Blast SSPC-SP-10 with an angular anchor profile of 1-2 mils.
   3. Primer:
      a. Sherwin Williams Epo Phen HT Coating; 7.0 - 9.0 mils DFT.
   4. Finish Coat:
      a. Sherwin Williams Epo Phen HT Coating; 7.0 - 9.0 mils. DFT
   5. Total DFT: 14.0 to 18.0 mils.

2.02 COATING SYSTEMS FOR FACTORY PRIMED STEEL - DOORS, FRAMES, AND MISCELLANEOUS EQUIPMENT

A. Interior Exposed:
1. System Type: Acrylic
2. Surface Preparation: Clean and dry
3. Primer: Factory primed
4. Field Primer:
   a. Sherwin Williams ProCryl Universal Primer; 2.0 - 4.0 mils DFT
   b. Tnemec Series 115 Uni Bond DF; 2.0 to 3.0 mils DFT.
5. Finish Coat:
   a. Sherwin Williams Shercryl HPA; 2.0 – 4.0 mils DFT. Pro Industrial Acrylic for low VOC.
   b. Tnemec Series 1029 Enduratone; 2.0 - 3.0 mils. DFT
6. Total DFT: 4.0 to 6.0 mils (on top of shop primer).

B. Exterior Exposed:
1. System Type: Inorganic Hybrid Water Based Epoxy/Polyurethane
2. Surface Preparation: Clean and dry.
3. Primer: Factory primed.
4. Field Primer:
   a. Sherwin Williams Pro Industrial WB Cat Epoxy B73; 3.0 – 5.0 mils DFT
   b. Tnemec Series 27 Typoxy WB; 3.0 - 5.0 mils DFT.
5. Finish Coat:
   a. Sherwin Williams Pro Industrial WB Acrolon 100 B65; 2.0 – 4.0 mils DFT.
   b. Tnemec Series 1075 Endura-Shield II; 2.5 - 3.5 mils. DFT 1095 for Low VOC
6. Total DFT: 5.5 to 8.5 mils (on top of shop primer).

2.03 COATING SYSTEMS FOR GALVANIZED STEEL AND NONFERROUS METAL - PIPE AND MISCELLANEOUS FABRICATIONS

A. Interior Exposure:
1. System Type: Acrylic
2. Surface Preparation: In accordance with manufacturer’s instructions and ASTM D6386
3. Primer:
   a. Sherwin Williams ProCryl Primer; 2.0 – 3.0 mils DFT
   b. Tnemec Series 115 Uni Bond DF; 2.0 - 3.0 mils DFT
4. Finish Coat:
   a. Sherwin Williams Shercryl HPA; 2.0 – 4.0 mils DFT. Pro Industrial Acrylic for low VOC.
   b. Tnemec Series 1029 Enduratone; 2 .0 - 3 .0 mils DFT.
5. Total DFT: 4 .0 to 6 .0 mils.

B. Exterior Exposure:
1. System Type: Acrylic
2. Surface Preparation: In accordance with manufacturer’s instructions and ASTM D6386
3. Primer:
   a. Sherwin Williams ProCryl Primer; 2.0 – 3.0 mils DFT
   b. Tnemec Series 115 Uni Bond DF; 2 .0 to 3 .0 mils DFT.

4. Finish Coat:
    a. Sherwin Williams Shercryl HPA; 2.0 – 4.0 mils DFT. Pro Industrial Acrylic for low VOC.
    b. Tnemec Series 1029 Enduratone; 2.0 to 3.0 mils. DFT
5. Total DFT: 4.0 to 6.0 mils

2.04 COATING SYSTEMS FOR DUCTILE OR CAST IRON - PIPE, PUMPS, AND VALVES

A. Interior Exposure:
1. System Type: Epoxy
2. Surface Preparation: In accordance with manufacturer's instructions
3. Primer:
    a. Sherwin Williams Macropoxy 646; 4 – 8 mils DFT. M646 100 for Low VOC
    b. Series N69 Hi-Build Epoxoline II; 4.0 to 6.0 mils DFT. L69 for Low VOC
4. Finish Coat:
    a. Sherwin Williams Macropoxy 646; 4 – 8 mils DFT. M646 100 for Low VOC
    b. Series N69 Hi-Build Epoxoline II; 4.0 - 6.0 mils DFT. L69 for Low VOC
5. Total DFT: 8.0 to 12.0 mils.

B. Exterior Exposure:
1. System Type: Epoxy/Polyurethane.
2. Surface Preparation: In accordance with manufacturer's instructions.
3. Primer:
    a. Sherwin Williams Macropoxy 646; 4 – 8 mils DFT. M646 100 for Low VOC
    b. Tnemec Series N69 Hi-Build Epoxoline II; 4.0 - 6.0 mils DFT. L69 for Low VOC
4. Finish Coat:
    a. Sherwin Williams Hi Solids Polyurethane; 3.0 – 5.0 mils DFT. 250 or 100 for low VOC.
    b. Series 1075 Endura-Shield II; 2.5 - 3.5 mils DFT. 1095 for Low VOC
5. Total DFT: 6.5 to 9.5 mils

C. Below Ground:
1. System Type: Coal tar epoxy.
2. Surface Preparation: In accordance with manufacturer's instructions.
3. Prime/Finish Coat:
    a. Sherwin Williams Targuard Coal Tar Epoxy; 16 – 32 mils DFT. 100 for low VOC.
    b. Series 46H-413 Hi-Build Tneme-Tar; 14.0 - 20.0 mils DFT. Series 27 WB Typoxy for Low VOC.
4. Total DFT: 14.0 to 20.0 mils

D. Immersion, Potable Water:
1. System Type: Epoxy.
2. Surface Preparation: In accordance with manufacturer's instructions.
3. Primer:
    a. Sherwin Williams Macropoxy 5500; 4.0 – 6.0 mils DFT
    b. Series N140 Pota Pox Plus; 4.0 to 6.0 mils DFT. L140 for Low VOC
4. Intermediate Coat:
    a. Sherwin Williams Macropoxy 5500; 4.0 – 6.0 mils DFT
    b. Series N140 Pota Pox Plus; 4.0 - 6.0 mils DFT. L140 for Low VOC.
5. Finish Coat:
    a. Sherwin Williams Macropoxy 5500; 4.0 – 6.0 mils DFT
    b. N69 Hi-Build Epoxoline II; 4.0 - 6.0 mils DFT. L140 for Low VOC
6. Total DFT: 12.0 to 18.0 mils

Or

1. System Type: Ultra High Solids Epoxy.
2. Surface Preparation: Abrasive blast clean per SSPC-SP10, 2.5 – 4 mil profile
3. Primer:
    a. For stripe coat application to all welds and irregular surfaces.
    b. Sherwin Williams Macropoxy 5500; 4.0 – 6.0 mils DFT
    c. Tnemec Series N140 Pota Pox Plus; 4.0 to 6.0 mils DFT. L140 for Low VOC
4. Finish Coat:
    a. For finish coat application over all surfaces.
    b. Sherwin Williams Sherplate PW or Duraplate UHS; 20.0 – 30.0 mils DFT
    c. Tnemec Series 20 or 22; 20.0 - 30.0 mils DFT.
5. Total DFT: 20.0 to 30.0 mils

E. Immersion, Severe Exposure to H2S:
1. System type: Modified Polyamine Ceramic Epoxy
2. Surface preparation: In accordance with manufacturer's recommendation.
3. Primer/Finish (One or more coats):
    a. Sherwin Williams Duraplate 6100 or Novaplate 325; 30 – 40 mils DFT
    b. Tnemec Series 431 Perma Glaze; 30-40 mils DFT
4. Total DFT: 30-40 mils.

2.05 COATING SYSTEMS FOR PVC

A. Interior Exposure:
1. System Type: Epoxy.
2. Surface Preparation: Scarify
3. Primer:
    a. Sherwin Williams Macropoxy 646; 4.0 – 8.0 mils DFT. M646 100 for Low VOC
    b. Series N69 Hi-Build Epoxoline II; 4.0 to 6.0 mils DFT. L69 for Low VOC
4. Finish Coat:
    a. Sherwin Williams Macropoxy 646; 4.0 – 8.0 mils DFT. M646 100 for Low VOC
    b. Tnemec Series N69 Hi-Build Epoxoline II; 4.0 to 6.0 mils DFT. L69 for Low VOC
5. Total DFT: 8.0 to 12.0 mils.

B. Exterior Exposure:
1. System Type: Epoxy/Polyurethane.
2. Surface Preparation: Scarify.
3. Primer:
    a. Sherwin Williams Macropoxy 646; 4.0 – 8.0 mils DFT. M646 100 for Low VOC
    b. Series N69 Hi-Build Epoxoline II; 4.0 - 6.0 mils DFT. L69 for Low VOC
4. Finish Coat:
    a. Sherwin Williams Hi Solids Polyurethane; 3.0 – 5.0 mils DFT. 250 or 100 for low VOC.
    b. Series 1075 Endura-Shield II; 2.5 to 3.5 mils. DFT. 1095 for Low VOC
5. Coating provided shall contain UV inhibitor.

2.06 COATING SYSTEMS FOR PRECAST CONCRETE AND CAST-IN-PLACE CONCRETE (REQUIRE WHERE INDICATED IN PLANS)

A. Exterior Exposed:
   1. System Type: Acrylic
   2. Surface Preparation: SSPC-SP 13/NACE 6. Clean and dry
   3. Primer:
      a. Sherwin Williams Loxon XP; 4.0 – 8.0 mils DFT
      b. Tnemec Series 180 W.B. Tneme-Crete; 4.0 to 8.0 mils DFT.
   4. Finish Coat:
      a. Sherwin Williams Loxon XP; 4.0 – 8.0 mils DFT
      b. Tnemec Series 180 W.B. Tneme-Crete; 4.0 to 8.0 mils DFT.
   5. Total DFT: 8.0 to 16.0 mils.

B. Below Grade:
   1. System Type: Coal tar
   2. Surface Preparation: SSPC-SP 13/NACE 6. Clean and dry
   3. Primer:
      a. Sherwin Williams Targuard Coal Tar Epoxy; 8.0 – 16.0 mils DFT. 100 for low VOC
      b. Series 46-465 H.B. Tnemecol. DFT 8.0 to 12.0 mils.
   4. Finish Coat:
      a. Sherwin Williams Targuard Coal Tar Epoxy; 8.0 – 16.0 mils DFT. 100 for low VOC
      b. Tnemec Series 46-465 H.B. Tnemecol. DFT 8.0 to 12.0 mils.
   5. Total DFT: 16.0 to 24.0 mils.

C. Interior Exposed:
   1. System Type: Epoxy
   2. Surface Preparation: SSPC-SP 13/NACE 6. Abrasive Blast Cleaning
   3. Patching:
      a. Sherwin Williams Duraplate 2300 (as needed)
      b. Series 218 MortarClad (as needed)
   4. Primer:
      a. Sherwin Williams Macropoxy 646; 4.0 – 8.0 mils DFT. M646 100 for Low VOC
      b. Tnemec Series N69 Hi-Build Epoxoline II; 4.0 to 6.0 mils DFT. L69 for Low VOC
   5. Finish Coat:
      a. Sherwin Williams Macropoxy 646; 4.0 – 8.0 mils DFT. M646 100 for Low VOC
      b. Tnemec Series N69 Hi-Build Epoxoline II; 4.0 to 6.0 mils DFT. L69 for Low VOC
   6. Total DFT: 8.0 to 12.0 mils.

D. Severe Service – Immersion, H2S Exposure or Chemical Corrosion Protection (Light to Heavy Abrasion):
   1. System I (H2S less than 50 ppm, Light Abrasion)
      a. System Type: Modified Epoxy.
      b. Surface Preparation: SSPC-SP 13/NACE 6. Abrasive blast clean to ICRI 310.2, CSP 4 – 6. Surfacing and Patching:
         1) Sherwin Williams Duraplate 2300; 1/16 inch DFT
         2) Tnemec Series 218 MortarClad; 1/16 inch DFT (nominal 62.5 mils)
      c. Primer/Finish (One or More Coats):
         1) Sherwin Williams Duraplate 6100; 1/16 inch DFT
         2) Tnemec Series 435 Perma-Glaze; 20.0 to 30.0 mils DFT

2. System II (H2S less than 100 ppm, Moderate to Heavy Abrasion)
    a. System Type: Modified Epoxy Mortar
    b. Surface Preparation: SSPC-SP 13/NACE 6. Abrasive blast clean to ICRI 310.2, CSP 4 – 6. Patching:
        1) Sherwin Williams Duraplate 2300; As needed
        2) Tnemec Series 218 MortarClad; As Needed
    c. Series 434 Perma-Shield H2S; 1/8 inch DFT (nominal 125 mils)
3. System III (H2S more than 100 ppm, Moderate to Heavy Abrasion)
    a. System Type: Modified Epoxy Mortar.
    b. Surface Preparation: SSPC-SP 13/NACE 6. Abrasive blast clean to ICRI 310.2, CSP 4 – 6. Patching:
        1) Sherwin Williams Duraplate 2300
        2) Tnemec Series 218 MortarClad; As Needed
    c. Mortar:
        1) Sherwin Williams Duraplate 6100; 1/8 inch DFT (nominal 125 mils)
        2) Series 434 Perma-Shield H2S; 1/8 inch DFT (nominal 125 mils)
    d. Finish (One or More Coats):
        1) Sherwin Williams Duraplate 6100; 20.0 – 30.0 mils DFT
        2) Series 435 Perma-Glaze; 20.0 - 30.0 mils DFT
4. System IV (H2S more than 100 ppm, Moderate to Heavy Abrasion)
    a. System Type: Semi Structural Epoxy
    b. Surface Preparation: SSPC-SP 13/NACE 6. Abrasive blast clean to ICRI 310.2, CSP 4 – 6
    c. Surfacing:
        1) Sherwin Williams Duraplate 2300, ¼ inch DFT nominal 250 mils
    d. Finish (One or More Coats):
        1) Sherwin Williams Duraplate 6100; 125.0 – 150.0 mils DFT
5. Chemical Corrosion Protective Coating
    a. Surface Preparation: SSPC-SP 13/NACE 6. Abrasive blast clean to ICRI 310.2, CSP 4 – 6.
    b. Primer:
        1) Sherwin Williams Duraplate 235 PW, Phenalkamine Epoxy; 1-coat @ 4-8 mils DFT
    c. Finish (One or More Coats):
        1) Sherflex Elastomeric Urethane; Aromatic Hybrid Polyurethane; 1-coat @ 60-80 mils DFT

2.07 COATING SYSTEMS FOR CONCRETE BLOCK MASONRY

A. Exposed, indoors and outdoors, as shown.
    1. System: Acrylic, Concrete: High molecular weight acrylic coating material shall have a minimum solids content of 35 percent by volume. Prime coat shall be an acrylic filler and sealer for concrete surfaces.
        a. Prime coat (Filler/sealer), Tnemec 180 Tneme-Crete, Sanitile 100, or ENGINEER-approved equal.
        b. Finish coats (2 or more, DFT = 3 mils), Tnemec 180 Tneme- Crete, Carbocrylic 3359 MC (DFT = 6 mils) or ENGINEER-approved equal.

B. Submerged in wastewater, including all vertical masonry surfaces above waterline as shown.
   1. System: Epoxy Mortar: High-build, 3-componet amine cured epoxy mortar, shall have a solids content of 100 percent by volume, suitable for long-term immersion and atmospheric exposure to wastewater. Filler-resurfacer compound shall be a 3-component epoxy cementitious thin overlay material used to fill voids and rough areas and must feather-edge capable. Epoxy Glaze (finish) coat shall be a 100-percent-solids epoxy suitable for long-term immersion and atmospheric exposure to wastewater.
      a. Filler/Resurfacre thin Overlay (Thickness = minimum 1/16”), Tnemec 218 MortarClad, or ENGINEER-approved equal.
      b. Epoxy Mortar (DFT = 125 mils) Tnemec 434 Perma-Shield, or ENGINEER-approved equal.
      c. Finish coat (DFT = 15-20 mils), Tnemec 435 Perma-Glaze, or ENGINEER-approved equal.

C. Exterior surfaces, above grade.
   1. System: Waterproofing: Two coats of a clear, non-staining, silane-modified-siloxane masonry waterproofing material. The waterproofing system after application shall be provided with not less than a five-year warranty on the performance of the product.
      a. Where EPA Allows Solvents: Chemstop, "WB Heavy Duty”; Rainguard, "XS", Chemprobe / Prime a Pell H2O; or ENGINEER-approved equal.
      b. Where EPA Prohibits Solvents: Chemstop, "WB Regular / Heavy Duty"; Rainguard's "Blok-Lok"; Rainproof's "Chem-Trete #45", Chemprobe / Prime A Pell H2O; or ENGINEER-approved equal.
   2. Surfaces shall be cleaned with a chemical (approved by waterproofing manufacturer) cleaner and power wash. Surfaces shall be clean and dry before application of waterproofing. Method and rate of application shall be in accordance with manufacturer's published instructions. A manufacturer's representative shall be present during applications if necessary for warranty.

PART 3 – EXECUTION

3.01 INSPECTION

A. Examine surfaces scheduled to receive coating for conditions that will adversely affect application, permanence, or quality of work and which cannot be put into an acceptable condition through surface preparation.

B. Do not proceed with surface preparation or coating application until conditions are suitable.

3.02 ACCEPTANCE OF SURFACES

A. The commencement of coating work in any area or space will be construed as acceptance of the surface as being satisfactory.

3.03 PREPARATION AND APPLICATION

A. Preparation and application shall be in accordance with coating systems (PART 2).

3.04 FINAL INSPECTION

A. Protect all coated surfaces against damage until the date of final acceptance.

B. Conduct a final inspection of all coating work and recoat or retouch any areas or surfaces found deficient in complying with these Specifications.

3.05 PIPING IDENTIFICATION

A. All visible piping ¾-inch and greater which is accessible for maintenance and operations shall be color-coded and identified with appropriate identification markers. Direction of flow arrows are to be included with each identification mark unless otherwise specified.

B. Each marker shall be black lettering on a yellow or white background and have a clearly printed legend to identify the contents of the pipe.

C. Locations for pipe markers to be as follows:

1. Adjacent to each valve (except as plumbing fixtures and equipment).
2. At each branch and riser take-off.
3. At each pipe passage through wall, floor, and ceiling construction.
4. At each pipe passage to underground
5. On all horizontal pipe runs, marked every 30 feet.

3.06 PIPE COLOR CODE

A. All piping color coding shall follow the ANSI/ASME A13.1 Labeling guidelines.

END OF SECTION

SECTION 31 0000 – EARTHWORK

PART 1 – GENERAL

1.01 THE REQUIREMENT

A. Perform all earthwork indicated and required for construction of the WORK, complete and operable in accordance with the Contract Documents and the latest Geotechnical Evaluation and or Soils Report.

1.02 SUBMITTALS

A. Submittals shall be made in accordance with Section 01 3300 – Submittal Procedures.
   1. Excavation Plan and stock pile storage sites.
   2. Backfill Plan

PART 2 – PRODUCTS

2.01 SUITABLE FILL AND BACKFILL MATERIAL REQUIREMENTS

A. General: All excavation or backfill shall conform to the requirements of the Geotechnical Engineer. Fill, backfill, and embankment materials shall be suitable selected or processed clean, fine earth, rock, or sand, free from grass, roots, brush, or other vegetation and approved by the Geotechnical Engineer.

B. Fill and backfill materials to be placed within 6 inches of any structure or pipe shall be free of rocks or unbroken masses of earth materials having a maximum dimension larger than 3 inches.

C. Suitable Materials: Materials not defined as unsuitable in the following Sections are defined as suitable materials and may be used in fills, backfilling and embankment construction subject to the indicated limitations. In addition, when acceptable to the ENGINEER, some of the material listed as unsuitable may be used when thoroughly mixed with suitable material to form a stable composite.

D. Suitable materials may be obtained from on-site excavations, or may be processed on-site materials. If the Geotechnical Engineer determines that excavated material is not suitable then additional compensation may be allowed on site processing or for import materials.

E. The following types of suitable materials are defined, unless otherwise specified in the project Geotechnical Evaluation and or Soils Report.
   1. Type A: Native soil excavated from the site after the site is stripped in accordance with these Specifications. This soil must be approved by the Geotechnical Engineer.
   2. Type B (sand backfill): Sand with 100% passing a 3/8-inch sieve, at least 90% passing a Number 4-sieve, and a sand equivalent value not less than 30.
   3. Type C (crushed rock): Crushed rock shall be imported material that consists of durable rock and gravel that is free of deleterious material and free from slaking or decomposition under the action of alternate wetting and drying. Crushed rock shall meet the following gradation requirements.

Sieve Size	Percentage Passing
1-inch	100
3/4 inch	90 - 100
No. 4	0 - 10
No. 200	0 - 2

   These materials should have a durability index of not less than 40.
   4. Type D (pea gravel or chat backfill): Crushed rock or gravel with 100% passing a ½-inch sieve and not more than 10% passing a Number 4-sieve.

5. Type E (coarse drain rock): Crushed rock or gravel with a Durability Index of not less than 40 meeting the following gradation requirements:

Sieve Size	Percentage Passing
2-inch	100
1½–inch	90 - 100
1-Inch	20 - 55
¾-inch	0 - 15
No. 200	0 - 3

6. Type F (aggregate base): Crushed rock/gravel aggregate base material shall be in accordance with MAG Standard Specification Section 702. Crushed rock and gravel shall conform to the following gradation as listed in MAG Standard Specification 702, Table 702-1:

Percentage by Weight Passing Sieve			
Select Material			
Sieve Size (Square Opening)	Type A	Type B	Aggregate Base
3-inch	100	-	-
1½–inch	-	100	-
1 1/4–inch	-	-	100
30-75	30-70	38-65	
20-60	20-60	25-60	
No. 30	10-40	10-40	10-40
No. 200	0-12	0-12	3-12

7. Type G (topsoil): Shall not be used.
8. Type H (cement-treated backfill): Material which consists of Type E material, which has been cement-treated so that the cement content of the material is not less than 5% by weight when tested in accordance with ASTM D2901 - Cement Content of Freshly Mixed Soil Cement. The ultimate compressive strength at 28 days shall be not less than 400 psi when tested in accordance with ASTM D1633 - Compressive Strength of Molded Soil - Cement Cylinders.
9. Type I (trench plug): Low permeable fill material, a non-dispersible clay material having a minimum plasticity index of 10.

2.02 UNSUITABLE MATERIAL

A. Unsuitable materials include the materials listed below:
   1. Soils defined as unsuitable in the Geotechnical Evaluation and or Soils Report or by the Geotechnical Engineer.
   2. Soils which, when classified under ASTM D2487 - Soils for Engineering Purposes (Unified Soil Classification System), fall in the Classifications of PT, OH, CH, MH, or OL.
   3. Soils, which cannot be compacted sufficiently to achieve the density specified for the intended use.
   4. Materials that contain hazardous or designated waste materials including petroleum hydrocarbons, pesticides, heavy metals, and any material which may be classified as hazardous or toxic according to applicable regulations.
   5. Soils that contain greater concentrations of chloride or sulfate ions, or have a soil resistivity or pH less than the existing on-site soils.
   6. Topsoil, except as allowed below.

2.03 USE OF FILL, BACKFILL AND EMBANKMENT MATERIAL TYPES

A. The types of materials as designated herein for all required fill, backfill and embankment construction hereunder shall be used.

B. Where these Specifications conflict with the requirements of any local agency having jurisdiction or with the requirements of a pipe material manufacturer, the ENGINEER shall be immediately notified. In case of conflict between types of pipe embedment backfills, the agency-specified backfill material if that material provides a greater degree of structural support to the pipe shall be used. In case of conflict between types of trench or final backfill types, the agency-specified backfill material, if that material provides the greater in-place density after compaction shall be used.

C. Fill and backfill types shall be used in accordance with the following provisions as approved by the Geotechnical Engineer:
   1. Embankment fills shall be constructed of Type A materials, as defined herein, or of primarily Type I mixed with lesser amounts of Type A through Type H materials.
   2. Pipe zone backfill, as defined in these Specifications.
   3. Aggregate base materials under pavements shall be Type F material constructed to the thicknesses indicated. For aggregate sub-base shall be Type H material.
   4. Backfill around structures shall be Type I material or Types F or H where indicated on the plans.
   5. Backfill materials beneath structures shall be defined by the Geotechnical Engineer or as follows:
      a. Drain rock materials under hydraulic structures or other water retaining structures with underdrain systems shall be Type C material or where shown.
      b. Under concrete hydraulic structures or other water retaining structures without underdrain systems, Types C or E shall be used. Undisturbed subgrade.
      c. Under structures where groundwater must be removed to allow placement of concrete, Type E material shall be used. Before the Type E material is placed, filter fabric shall be placed over the exposed foundation.
      d. Under all other structures, Type A or F materials shall be used.
   6. Filter fabric, if not specified on the plans, shall be Mirafi 140 N, Mirafi 700X or ENGINEER-approved equal.

2.04 MATERIALS TESTING

A. All soils testing of samples submitted will be done by a testing laboratory with the ENGINEER’s approval and at no additional expense. At its discretion, the ENGINEER may request that samples for testing of any material used in the work be supplied.

B. Particle size analysis of soils and aggregates will be performed using ASTM D422 - Particle-Size Analysis of Soils.

C. Determination of sand equivalent value will be performed using ASTM D2419 - Sand Equivalent Value of Soils and Fine Aggregate.

D. Unified Soil Classification System: References in this Section to soil classification types and standards shall have the meanings and definitions indicated in ASTM D2487. ASTM D2487 in the interpretation of soil classifications shall bind all applicable provisions.

PART 3 – EXECUTION

3.01 EXCAVATION

A. General: Except when specifically provided to the contrary, excavation shall include the removal of all materials of whatever nature encountered, including all obstructions of any nature that would interfere with the proper execution and completion of the WORK. The removal of said materials shall conform to the lines and grades indicated or ordered.

Unless otherwise indicated, the entire construction site shall be stripped of all vegetation and debris, and such material shall be removed from the site prior to performing any excavation or placing any fill. All supports and shoring that may be required for the sides of the excavations shall be furnished, placed and maintained. Excavations shall be sloped or otherwise supported in a safe manner in accordance with applicable State and OSHA safety requirements and the requirements of OSHA Safety and Health Standards for Construction (29CFR1926).

B. Removal and Exclusion of Water: Remove and exclude water, including stormwater, groundwater, irrigation water and wastewater, from all excavations as defined in the contract.

3.02 STRUCTURE, ROADWAY, AND EMBANKMENT EXCAVATION

A. Excavation Beneath Structures and Embankments: Except where otherwise indicated for a particular structure, excavation shall be carried to the grade of the bottom of the footing or slab and prepared in accordance with the Geotechnical Evaluation and or Soils Report.

B. Excavation Beneath Paved Areas: Excavation under areas to be paved shall extend to the bottom of the aggregate base and prepared in accordance with the Geotechnical Evaluation and or Soils Report.

3.03 PIPELINE AND UTILITY TRENCH EXCAVATION

A. As referenced in these Specifications.

3.04 OVER-EXCAVATION NOT ORDERED OR INDICATED

A. Any over-excavation carried below the grade ordered or indicated, shall be backfilled and compacted to the required grade with the indicated material, in accordance with the Geotechnical Engineer’s requirements.

3.05 DISPOSAL OF EXCESS EXCAVATED MATERIAL

A. Obtain OWNER approvals for disposal of excess excavated material in a designated wasting area, as defined in the contract.

3.06 BACKFILL - GENERAL

A. Backfill shall not be dropped directly upon any structure or pipe. Backfill shall not be placed around or upon any structure until the concrete has attained sufficient strength to withstand the loads imposed.

B. Except for drainrock materials being placed in over-excavated areas or trenches, backfill shall be placed after all water is removed from the excavation and the trench sidewalls and bottom have been dried to moisture content suitable for compaction.

C. Immediately prior to placement of backfill materials, the bottoms and sidewalls of trenches and structure excavations shall have all loose sloughing, or caving soil and rock materials removed. Trench sidewalls shall consist of excavated surfaces that are in a relatively undisturbed condition before placement of backfill materials.

3.07 PLACING AND SPREADING OF BACKFILL MATERIALS

A. Backfill materials shall be placed and spread evenly in layers. When compaction is achieved using mechanical equipment, the layers shall be evenly spread so that when each layer compacted shall not exceed 6 inches in thickness. The compaction lift depth may be adjusted at the direction of the Geotechnical Engineer.

B. During spreading, each layer shall be thoroughly mixed as necessary to promote uniformity of material in each layer. Pipe zone backfill materials shall be manually spread

around the pipe so when compacted the pipe zone backfill will provide uniform bearing and side support.

C. Backfill should be compacted within a water content range of 3 percent below to 3 percent above optimum.

3.08 COMPACTION OF FILL, BACKFILL AND EMBANKMENT MATERIALS

A. Each layer of Types A, B, F and G, backfill materials as defined herein, where the material is graded such that at least 10% passes a No. 4 sieve, shall be mechanically compacted to the indicated percentage of density. Equipment that is consistently capable of achieving the required degree of compaction shall be used and each layer shall be compacted over its entire area while the material is at the required moisture content.

B. Each layer of Type C, D and E backfill materials shall be compacted by means of at least 2 passes from a flat plate vibratory compactor. When such materials are used for pipe zone backfill, vibratory compaction shall be used at the top of the pipe zone or at vertical intervals of 24 inches, whichever is the least distance from the sub-grade.

C. Flooding, pending or jetting shall not be permitted.

D. Equipment weighing more than 10,000 pounds shall not be used closer to walls than a horizontal distance equal to the depth of the fill at that time. Hand operated power compaction equipment shall be used where use of heavier equipment is impractical or restricted due to weight limitations. Exception: With the written approval of the Structural Engineer.

E. Backfill around and over pipelines that is mechanically compacted shall be compacted using light, hand operated, vibratory compactors and rollers. After completion of at least 2 feet of compacted backfill over the top of pipeline, compaction equipment weighing no more than 8,000 pounds may be used to complete the trench backfill.

F. Compaction Requirements: The following compaction test requirements shall be in accordance with ASTM D1557 - Laboratory Compaction Characteristics of Soils Using Modified Effort (56,000 ft - lbf/ft3) (2,700 kN-m/m3) for Type A, B, C, E, F, and G materials and in accordance with ASTM D4253 - Maximum Index Density and Unit Weight of Soils Using a Vibratory Table, and D4254 - Minimum Index Density and Unit Weight of Soils and Calculation of Relative Density, for Type C, D, E and H materials. Where agency, utility company, or Geotechnical Evaluation and or Soils Report requirements govern, the highest compaction standards shall apply.

Location or Use of Fill	Percentage of Maximum Density
Final backfill, beneath paved areas or structures	95
Final backfill, not beneath paved areas or structures	90
Embankments and fills	90
Embankments and fills beneath paved areas or structures	90
Backfill beneath structures and hydraulic structures	95
Backfill and fill around structures on reservoir or structure roof	90
Topsoil (Type G material)	80
Aggregate base or sub-base (Type F or H material)	95

3.09 FILL AND EMBANKMENT CONSTRUCTION

A. The area where a fill or embankment is to be constructed shall be cleared, grubbed, and stripped in accordance with these Specifications. Embankment and fill material shall be placed and spread evenly in approximately horizontal layers. Each layer shall be thoroughly mixed and moisture conditioned, as necessary. Unless otherwise approved by the ENGINEER, each layer shall not exceed 6 inches of compacted thickness.

B. Base keys shall be provided at the toes of all fill slopes more than 5 feet high. The keys shall be cut into underlying undisturbed soil. Keys shall be a minimum of 12 feet wide and 4 feet deep measured at the downslope side of the key. Keys shall be sloped back toward the fill slope at a gradient of no less than 2%.

C. When an embankment or fill is to be made and compacted against hillsides or slopes steeper than 4:1, the slopes shall be horizontally benched to key the embankment or fill to the underlying ground. A minimum of 12 inches normal to the slope shall be removed and re-compacted as the embankment or fill is brought up in layers. Material thus cut shall be re-compacted along with the new material. Hillside or fill slopes 4:1 or flatter shall be prepared in accordance with Paragraph A, above.

D. Where embankment or structure fills are constructed over pipelines, the first 4 feet of fill over the pipe shall be constructed using light placement and compaction equipment that does not damage the pipe. Heavy construction equipment shall maintain a minimum distance from the edge of the trench equal to the depth of the trench until at least 4 feet of fill over the pipe has been completed.

E. All permanent fill slopes shall be overbuilt by at least 1 foot and then cut to final grade to provide adequate compaction.

3.10 GRADING

A. General: Uniformly grade areas to a smooth surface, free of irregular surface changes. Comply with compaction requirements and grade to cross-sections, lines, and elevations indicated.
   1. Provide a smooth transition between adjacent existing grades and new grades.
   2. Cut out soft spots, fill low spots, and trim high spots to comply with required surface tolerances.

B. Site Grading: Slope grades to direct water away from buildings/structures and to prevent ponding. Finish subgrades to required elevations within the following tolerances:
   1. Lawn or Unpaved Areas: Plus or minus 1 inch
   2. Walks: Plus or minus 1 inch
   3. Pavements: Plus or minus ½-inch

3.11 FIELD TESTING

A. General: All field soils testing shall be done by a testing laboratory as specified in the Contract Documents.

B. Where soil material is required to be compacted to a percentage of maximum density, the maximum density at optimum moisture content will be determined in accordance with Method C of ASTM D1557. Where cohesionless, free draining soil material is required to be compacted to a percentage of relative density, the calculation of relative density will be determined in accordance with ASTM D4253 and D4254. Field density in-place tests will be performed in accordance with ASTM D1556 - Density and Unit Weight of Soil in Place by the Sand-Cone Method, ASTM D2922 - Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth), or by such other means acceptable to the ENGINEER.

C. In case the test of the fill or backfill show non-compliance with the required density, a remedy as may be required to insure compliance shall be accomplished. Subsequent testing to show compliance shall be performed by a testing laboratory.

D. Provide test trenches and excavations including excavation, trench support and groundwater removal for the ENGINEER's field soils testing operations. The trenches and excavations shall be provided at the locations and to the depths required by the ENGINEER.

END OF SECTION

SECTION 31 2333 – TRENCHING AND BACKFILLING

PART 1 – GENERAL

1.01 THE REQUIREMENT

A. Section Includes: Trench excavation, fine grading, pipe bedding, backfilling, and compaction for the following, including requirements for ditch crossings:
   1. Pipe and electrical conduits.
   2. Manholes, valves, or other accessories.
   3. Potable and non-potable water pipe appurtenances.

B. Soils Report: This work shall conform to the requirements of the latest Geotechnical Evaluation.

1.02 REFERENCES

A. American Society for Testing and Materials (ASTM):

C117	Material Finer than 75-µm (No. 200) Sieve in Mineral Aggregates by Washing
C131	Resistance to Degradation of Small-Size Course Aggregate by Abrasion and Impact in the Los Angeles Machine
C136	Sieve Analysis of Fine and Course Aggregates
D1556	Density and Unit Weight of Soil in Place by the Sand Cone Method
D1557	Laboratory Compaction Characteristics of Soil Using Modified Effort
D2922	Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)
D2937	Density of Soil in Place by the Drive-Cylinder Method
D4318	Liquid Limit, Plastic Limit, and Plasticity Index of Soils
OSHA	Document 2226 Excavation

1.03 SUBMITTALS

A. Submittals shall be furnished in accordance with Section 01 3300 – Submittal Procedures.

B. Products Data: For all proposed bedding and backfill materials as defined in these Specifications.
   1. Material source
   2. Gradation
   3. Testing data

C. Submit shoring and/or bracing details for trench depths greater than 5 ft.

PART 2 – PRODUCTS

2.01 MATERIALS

A. General:
   1. The following types of suitable materials are defined, unless otherwise specified by the Geotechnical Evaluation.
   2. Provide material having maximum particle size not exceeding 2 inches and that is free of leaves, grass, roots, stumps, and other organic matter.
   3. Materials derived from processing demolished or removed asphalt concrete are not acceptable.

B. All products shall comply with applicable Sections of these Specifications, Section 31 0000 – Earthwork, including, but not limited to the following:
   Aggregate Base Course
   Gravel
   Native Material
   Sand
   Select Material

2.02 UNSUITABLE MATERIAL

A. Unsuitable materials include the materials listed below:
   1. Soils as defined unsuitable in the Geotechnical Evaluation or by the Geotechnical Engineer.
   2. Soils which, when classified under ASTM D2487 - Standard Classification of Soils for Engineering Purposes (Unified Soil Classification System), fall in the Classifications of PT, OH, CH, MH or OL.
   3. Soils, which cannot be compacted sufficiently to achieve the density specified for the intended use.
   4. Materials that contain hazardous or designated waste materials including petroleum hydrocarbons, pesticides, heavy metals, and any material which may be classified as hazardous or toxic according to applicable regulations.
   5. Soils that contain greater concentrations of chloride or sulfate ions, or have a soil resistivity or pH less than the existing on-site soils.
   6. Topsoil, except as allowed below.

2.03 USE OF FILL, BACKFILL

A. Where these Specifications conflict with the requirements of any local agency having jurisdiction or with the requirements of a pipe material manufacturer, the ENGINEER shall be immediately notified. In case of conflict between types of pipe embedment backfills, the agency-specified backfill material if that material provides a greater degree of structural support to the pipe shall be used. In case of conflict between types of trench or final backfill types, the agency-specified backfill material, if that material provides the greater in-place density after compaction shall be used.

B. Fill and backfill types shall be used in accordance with the following provisions:
   1. Pipe zone backfill shall consist of the following materials for each pipe material listed below.
      a. Mortar coated pipe, concrete pipe and un-coated ductile iron pipe shall be provided Type C or D pipe bedding and embedment backfill material.
      b. Coal tar enamel coated pipe, polyethylene encased pipe, tape wrapped pipe and other non-mortar coated pipe shall be backfilled with Type B bedding and embedment zone backfill material.
      c. Plastic pipe shall be backfilled with Type B, C, or D bedding and embedment zone backfill material.
      d. Where pipelines are installed on grades exceeding 4%, and where backfill materials are graded such that there is less than 10% passing a Number 4 sieve, trench plugs of Type H or I material shall be provided at maximum intervals of 200 feet unless indicated otherwise.
   2. Allowable trench backfill materials for pipelines as defined under the MAG Standards and Specifications.

2.04 MATERIALS TESTING

A. As defined in these Specifications.

PART 3 – EXECUTION

3.01 PREPARATION

A. General:
   1. All utility piping shall be field surveyed for location of pipe runs and joints prior to backfilling.
   2. Before laying pipes or electrical conduits in fill, place fill and compact it to not less than 1 ft above top of pipe or conduit.
   3. After placing and compacting fill, excavate through fill and fine grade as required in this Section.

3.02 EXCAVATION AND TRENCH PROTECTION:

A. Provide safe working conditions, to prevent shifting of material, to prevent damage to structures or other work, to avoid delay to the work, all in accordance with applicable safety and health regulations. Properly shore, sheet, and brace all excavations which are not cut back to the proper slope and where shown.
   1. Locate all underground utilities and take the required measures necessary to protect them from damage.
   2. Construction and shop drawings containing deviations from OSHA standards or special designs shall be sealed by a licensed Engineer retained by the CONTRACTOR.

B. Stabilize excavation through shoring, sheeting, and bracing as required by OSHA or local standards, whichever is more stringent.
   1. Code of Federal Regulations Title 29 CFR Part 1926, Subpart P, Excavations.
   2. Occupational Safety and Health Administration Document 2226.

3.03 EXCAVATION AND GRADING

A. Exploratory Excavation:
   1. Excavate and expose buried points of connection to existing utilities where indicated on the Drawings. Excavation shall be performed prior to preparation of Shop Drawings for connections and before fabrication of pipe, and the data obtained shall be used in preparing Shop Drawings.
   2. Data, including dates, locations excavated, and sketches, shall be submitted to the ENGINEER within one week of excavation.
   3. Damage to utilities from excavation activities shall be repaired at the CONTRACTOR’s expense.

B. Trench Excavation:
   1. General Requirements:
      a. If, because of soil conditions, safety requirements or other reasons, trench width at top of pipe is increased beyond width specified in the MAG Standards and Specifications, upgrade laying conditions or install stronger pipe designed in conformance with the appropriate pipe Specification Section for the increased trench width, without additional cost.

b. Pipe and Electrical Conduits:
    1) Lay pipe or electrical conduits in open trench.
    2) If bottom of excavation is found to consist of rock or any material that by reason of its hardness cannot be excavated to provide uniform bearing surface, remove such rock or other material to a depth of not less than 4 inches below bottom of pipe and refill to grade with aggregate base course material or sand placed at uniform density, with minimum possible compaction, at no additional cost.
    3) If bottom of excavation is found to consist of soft or unstable material which is incapable of properly supporting pipe, remove such material to a depth and for the length required, as determined by the ENGINEER, and then refill trench to grade with aggregate base course or sand, compacted to 90 percent of maximum density.
    4) Where indicated on the Drawings, cradle pipe in concrete.
c. For Manholes, Valves, or Other Accessories:
    1) Provide excavations sufficient to leave at least 12 inches clear between their outer surfaces and embankment or shoring which may be used to hold banks and protect them.
    2) Do not backfill with earth under manholes, vaults, tanks, or valves.
    3) Fill any unauthorized excess excavation below elevation indicated on the Drawings for foundation of any structure with sand, aggregate base material, bedding material, or concrete at no additional cost.
    4) Backfilling of Manhole Excavation: Conform to backfilling requirements as specified for pipe and utility trench backfill in this Section.
d. Potable and Non-Potable Water Pipe Appurtenances:
    1) Lay in trenches separate from those used for sewers.
    2) Unless otherwise specified or indicated on the Drawings, lay in trenches having cover of not less than 3 feet below surface of ground and located at distance of not less than 6 feet from any parallel sewer trench, or as required by local requirements.
e. At Road Crossings or Existing Driveways:
    1) Make provision for trench crossings at these points, either by means of backfills, tunnels, or temporary bridges.

C. Trench Fine Grading:
1. For Pipes 16 Inches in Nominal Diameter and Under:
    a. Unless otherwise specified, accurately grade bottom of trench to provide uniform bearing and support for each section of pipe, on undisturbed soil at every point along pipe's entire length, except for portions of pipe where it is necessary to excavate for bells and for proper sealing of pipe joints.
2. For Pipe over 16 Inches in Diameter:
    a. Over-excavate bottom of trench by at least 4 inches, or 1/12 outside diameter of pipe, whichever is greater.
    b. Fill overcut with bedding material specified herein, and fine graded as specified above.
    c. Place bedding material at uniform density, with minimum possible compaction.
    d. Where trench excavation is below grade of bedding material, restore trench bottom to proper grade by backfilling and compacting backfill to 95 percent of maximum density, at no additional cost. Use bedding material as specified in this Section.

3. Bell or Coupling Holes:
    a. Dig holes after trench bottom has been graded.
    b. Provide holes of sufficient width to provide ample room for grouting, banding, or welding.
    c. Excavate holes only as necessary in making joints and to ensure that pipe rests upon prepared trench bottom and not supported by any portion of the joint.
4. Depressions for Joints, Other than Bell and spigot:
    a. Make in accordance with recommendations of joint manufacturer for particular joint used.

3.04 DISPOSAL OF EXCESS EXCAVATED MATERIAL

A. Obtain OWNER approvals for disposal of excess excavated material in designated wasting area, as defined in the contract.

3.05 BACKFILL - GENERAL

A. Backfill shall not be dropped directly upon any pipe. Backfill shall not be placed around or upon any structure until the concrete has attained sufficient strength to withstand the loads imposed.

B. Except for drainrock materials being placed in over-excavated areas or trenches, backfill shall be placed after all water is removed from the excavation and the trench sidewalls and bottom have been dried to moisture content suitable for compaction.

C. If a moveable trench shield is used during excavation, pipe installation and backfill operations, the shield shall be moved by lifting the shield free of the trench bottom or backfill and then moving the shield horizontally. No trench shields shall be dragged along the trench causing damage or displacement to the trench sidewalls, the pipe, or the bedding and backfill.

D. Immediately prior to placement of backfill materials, the bottoms and sidewalls of trenches and structure excavations shall have all loose sloughing, or caving soil and rock materials removed. Trench sidewalls shall consist of excavated surfaces that are in a relatively undisturbed condition before placement of backfill materials.

3.06 PLACING AND SPREADING OF BACKFILL MATERIALS

A. During spreading, each layer shall be thoroughly mixed as necessary to promote uniformity of material in each layer. Pipe zone backfill materials shall be manually spread around the pipe so when compacted the pipe zone backfill will provide uniform bearing and side support.

B. Where the backfill material moisture content is below the optimum moisture content, water shall be added before or during spreading until the moisture content is between optimum and 3% over the optimum.

C. Where the backfill material moisture content is too high to permit the specified degree of compaction the material shall be dried until the moisture content is between optimum and 3% over the optimum.

3.07 COMPACTION OF FILL, BACKFILL AND EMBANKMENT MATERIALS

A. Compaction Requirements: Backfill compaction requirements shall be per the Geotechnical Evaluation and or Soils Report and per MAG Standards and Specifications.

3.08 PIPE AND UTILITY TRENCH BACKFILL

A. Pipe Zone Backfill:
   1. The pipe zone is defined as that portion of the vertical trench cross-section lying between a plane below the bottom surface of the pipe and a plane at a point above the top surface of the pipe. The bedding is defined as that portion of pipe zone backfill material between the trench sub-grade and the bottom of the pipe. The embedment is defined as that portion of the pipe zone backfill material between the bedding and a level line.
   2. After compacting the bedding, perform a final trim using a laser or approved method for establishing grade, such that each pipe section when first laid will be continually in contact with the bedding along the extreme bottom of the pipe. Excavation for pipe bells and welding shall be made as required.
   3. The pipe zone shall be backfilled with the indicated backfill material. Care to prevent damage to the pipeline coating, cathodic bonds and the pipe itself during the installation and backfill operations shall be exercised.
   4. If a moveable trench shield is used during backfill operations, the shield shall be lifted to a location above each layer of backfill material prior to compaction of the layer. The pipe or backfill shall not be displaced while the shield is being moved.

B. Trench Zone Backfill: After the pipe zone backfills have been placed, backfilling of the trench zone may proceed. The trench zone is defined as that portion of the vertical trench cross-section lying as indicated between a plane above the top surface of the pipe and a plane at a point, 18 inches below the finished surface grade, or if the trench is under pavement, 18 inches below the roadway sub-grade.

C. Final Backfill: Final backfill is all backfill in the trench cross-sectional area within 18 inches of finished grade, or if the trench is under pavement, all backfill within 18 inches of the roadway sub-grade.

3.09 FIELD QUALITY CONTROL

A. Tests:
   1. Confirmation Tests:
      a. CONTRACTOR’s Responsibilities:
         1) Accomplish specified compaction of trench backfill.
         2) Control operations by confirmation tests to verify and confirm that compaction work complies, and is complying at all times, with requirements specified in this Section concerning compaction, control, and testing.
         3) All field soils testing will be done by a testing laboratory as specified in the Contract Documents.
         4) Copies of Confirmation Test Reports: Submit promptly to the ENGINEER.
      b. Frequency of Confirmation Testing:
         1) Perform testing not less than as follows:
            a) For Trenches: At each test location include tests for each type or class of backfill from bedding to finish grade.
            b) In Open Fields: Two every 1,000 linear feet.
            c) Along Dirt or Gravel Road or off Traveled Right-of-way: Two every 500 linear feet.
            d) Crossing Paved Roads: Two locations along each crossing.
            e) Under Pavement Cuts or Within 2 Feet of Pavement Edges: one location every 400 linear feet.

2. Compliance Tests:
    a. Frequency of Testing: Periodic compliance tests will be made by the
        1) ENGINEER to verify that compaction is meeting requirements previously specified.
    b. If Compaction Fails to Meet Specified Requirements: Perform remedial work by one of the following methods:
        1) Remove and replace backfill at proper density.
        2) Bring density up to specified level by other means acceptable to the ENGINEER.
    c. Retesting:
        1) Costs of Retesting: Costs of retesting required to confirm and verify that remedial work has brought compaction within specified requirements shall be borne by the CONTRACTOR.
        2) CONTRACTOR's Confirmation Tests During Performance of Remedial Work:
            a) Performance: Perform tests in manner acceptable to the ENGINEER.
            b) Frequency: Double amount specified for initial confirmation tests.
3. Leak Testing Pipe:
    a. After Bedding the Pipe, CONTRACTOR Has the Following Option To:
        1) Leak-test pipe.
        2) Backfill to surface, at his own risk, before leak water-testing pipe.
    b. If pipe does not pass test, uncover pipe, locate leaks, repair and retest, repeating until pipe section under test passes.

END OF SECTION

SECTION 32 1216 – AC PAVEMENT AND BASE

PART 1 – GENERAL

1.01 THE REQUIREMENT

A. Perform all WORK associated with Asphalt Concrete (AC) Pavement and base as shown and specified herein including all labor, materials, equipment supplies, and facilities associated with providing a finished product satisfying all the requirements of the Contract Documents.

B. Verify all requirements with latest Geotechnical Evaluation and Report and notify the Engineer immediately if discrepancies exist.

1.02 REFERENCE SPECIFICATIONS, CODES AND STANDARDS

A. Codes**:** All codes, as referenced herein.

B. References**:** These specifications refer to the State of Arizona Department of Transportation (ADOT) Standard Specifications, referred to herein as the Standard Specifications.

1.03 SUBMITTALS

A. Submittals shall be furnished in accordance with Section 01 3300 – Submittal Procedures.

B. Submit, in writing, materials testing reports, mix designs and other pertinent information satisfactory to the ENGINEER demonstrating that materials and methods it proposes to utilize will comply with the referenced provisions of the Standard Specifications, in accordance Submittal Requirements.

PART 2 – PRODUCTS

2.01 DESCRIPTION

A. Asphaltic concrete shall consist of furnishing all materials, mixing, hauling, and placing a mixture of aggregates, mineral admixture, and bituminous material to form a pavement course or to be used for other specified purposes, in accordance with the details shown on the project plans and as directed by the Engineer.

B. The contractor may propose the use of a mix design that has been developed for a previous project. The CONTRACTOR shall provide evidence that the asphalt cement and mineral admixture type and source of supply, and the source and methods of producing mineral aggregate, have not changed since the formulation of the previous mix design. The CONTRACTOR shall also provide current test results for all specified characteristics of the mineral aggregate proposed for use. The ENGINEER will determine if the previously used mix design is suitable for the intended use. The Engineer will determine if the previously used mix design is suitable for the intended use. The ENGINEER will either approve or disapprove the proposed mix design. Should the ENGINEER disapprove the use of the previously used mix design, the contractor shall prepare and submit a new mix design proposal in accordance with the requirements of these specifications.

C. A previously used mix design older than two years from the date it was formulated, sealed, signed, and dated shall not be allowed for use. Any previously used mix design that is older than one year, but less than two years, shall not be allowed for use unless the contractor provides verification testing results. Such testing shall be a one-point verification at the design asphalt content utilizing the proposed mineral aggregate, asphalt cement, and mineral admixture. Once approved for use on a project, a mix design may be used for the duration of the project.

2.02 MATERIALS REQUIREMENTS

A. Mineral aggregate shall conform to the following requirements when tested in accordance with the applicable test methods

MINERAL AGGREGATE CHARACTERISTICS		
Characteristic	**Test Method**	**Requirement**
Combined Bulk Oven Dry Specific Gravity	Arizona Test Method 251	2.350 – 2.850
Combined Water Absorption	Arizona Test Method 251	0 – 2.5%
Sand Equivalent	AASHTO T 176 (After thoroughly sieving the sample, no additional cleaning of the fines from the plus No. 4 material is required)	Minimum 55
Fractured Coarse Aggregate Particles	Arizona Test Method 212	Minimum 70% (plus No. 4 material)

The gradation will be determined in accordance with Arizona Test Method 201 and shall conform to the requirements given below.

Mix Design Grading Limits				
Sieve Size	**Percent Passing**			
	Lift Thickness Less Than or Equal to Two Inches		**Lift Thickness Greater Than Two Inches**	
	Without Admixture	**With Admixture**	**Without Admixture**	**With Admixture**
1 inch	---	---	100	100
¾-inch	100	100	90-100	90-100
½-inch	90 – 100	90 - 100	---	---
3/8-inch	70 – 85	70 – 85	70 – 85	70 – 85
No. 8	41 – 51	42 – 52	41 – 51	42 – 52
No. 200	2.0 – 5.0	3.0 – 6.5	2.0 – 5.0	3.0 – 6.5

B. Bituminous Material

1. Asphalt cement shall be a performance grade (PG) asphalt binder conforming to the requirements of Section 1005 of the Standard Specifications. The type of asphalt binder shall be PG64-22.
2. The percent of asphalt cement used shall be based on the weight of total mix (asphalt cement, mineral aggregate, and mineral admixture).
3. The CONTRACTOR shall provide the laboratory mixing and compaction temperature ranges to the mix design laboratory for each PG asphalt binder used for mix design purposes. The laboratory mixing temperature range is defined as the range of temperatures where the un-aged asphalt binder has a rotational viscosity of 0.17 ± 0.02 Pascal seconds, measured in accordance with AASHTO T 316. The laboratory compaction temperature range is defined as the range of temperatures where the un-aged asphalt binder has a rotational viscosity of 0.28 ± 0.03 Pascal seconds, measured in accordance with AASHTO T 316. The testing required in AASHTO T 316 shall be performed at 275°F and 350°F, and a viscosity· temperature curve developed in accordance with ASTM D2493. The viscosity-temperature curve shall be included in the mix design report. For PG asphalt binders that have a maximum laboratory mixing temperature exceeding 325°F or a maximum laboratory compaction temperature exceeding 300°F the laboratory mixing and compaction temperature ranges shall be specified in writing by the asphalt binder supplier. The laboratory

mixing and compaction temperature ranges, as well as the actual laboratory mixing and compaction temperatures used, shall be reported in the mix design. The Contractor shall ensure that the asphalt binder supplier information required in this paragraph is provided to all appropriate parties in a timely manner, and that copies are included in the mix design report. The laboratory mixing and compaction temperatures are for mix design purposes only. Field mixing and compaction temperatures are specified in Subsection 2.03.

C. Mineral Admixture

1. Mineral admixture shall be either Portland cement, blended hydraulic cement, or hydrated lime conforming to the following requirements:

Material	Requirement
Portland Cement, Type I or II	ASTM C150
Blended Hydraulic Cement, Type IP	ASTM C595
Hydrated Lime	ASTM C1097

2. The mineral admixture content shall be 2.0 percent, by weight, of the mineral aggregate. However, a minimum of 1.0 percent mineral admixture may be used if the Contractor submits test information a lowered percentage of mineral admixture produces mix design results for Index of Retained Strength of at least 60 percent and a Minimum Wet Strength of 150 psi when tested in accordance with Arizona Test Method 802.

D. Mix Design

1. Utilizing mineral aggregate which has been crushed, processed, separated, and stockpiled, a mix design shall be formulated and submitted by the Contractor to the ENGINEER. The mineral aggregate samples used for mix design purposes shall be representative of aggregate materials to be used during production.
2. The mix design shall be based on the mix design criteria and other requirements specified herein, utilizing asphalt cement and mineral admixture of the type and from the sources proposed for use in the production of asphaltic concrete.
3. The mix design shall be prepared under the direct supervision of a professional engineer experienced in the development of mix designs and mix design testing. The mix design shall be provided in a format that clearly indicates all the mix design requirements and shall be sealed, signed, and dated by the mix design engineer.
4. The mix design shall be prepared by a mix design laboratory that has met the requirements of the Department's “System for the Evaluation of Testing Laboratories”. The requirements may be obtained from ADOT Materials Group, 1221 North 21st Avenue, Phoenix, Arizona 85009.
5. Test results used in the formulation of the mix design must be from testing performed no earlier than 45 days prior to the date the mix design is signed by the mix design engineer. Historical abrasion values may be supplied on sources provided the testing was conducted within the past two years.
6. The mix design shall be submitted to the ENGINEER under a cover letter signed by an authorized representative of the contractor.
7. The mix design shall be submitted to the ENGINEER for review a minimum of five working days prior to the start of production.
8. The mix design shall meet the following criteria when tested in accordance with the requirements of the following test methods:

Criteria	Requirement	Arizona Test Method
Voids in Mineral Aggregate: %, Range	14.5 – 18.5	815
Effective Voids: %, Range	5.5 – 6.5	815
Absorbed Asphalt: %, Range	0 – 1.0	815

9. The ENGINEER reserves the right to adjust the asphalt content during production from the mix design value without additional compensation to the contractor in order to obtain desirable effective voids. The ENGINEER may waive the requirements for a mix design if the intended use of the material is temporary in nature.

E. Sampling and testing the materials or mixture for quality control purposes shall be the Contractor's responsibility. The ENGINEER reserves the right to sample and test the materials and mixture when necessary to determine that they reasonably conform to the requirements specified herein.

2.03 CONSTRUCTION REQUIREMENTS

A. General

1. All courses of asphaltic concrete shall be compacted as required, smooth, and true to the required lines, grades, and dimensions.
2. The following smoothness requirements shall be met:
   a. The surface of the final lift of asphaltic concrete placed under this section of the specifications shall be tested and shall not vary by more than 1/8 inch from the lower edge of a ten-foot straightedge when it is placed in the longitudinal direction (including across transverse joints), and when it is placed in the transverse direction across longitudinal joints.
   b. The surface of any lift of asphaltic concrete placed under this section of the specifications, other than the final lift, shall be tested and shall not vary by more than 1/4 inch from the lower edge of a ten-foot straightedge when it is placed in the longitudinal direction (including across transverse joints), and when it is placed in the transverse direction across, longitudinal joints.
   c. All deviations exceeding the specified tolerances above shall be corrected by the contractor, to the satisfaction of the ENGINEER.
3. No fine material which has been collected in the dust collection system shall be returned to the mixture unless the collected fines are accurately and uniformly metered into the mixture.
4. The temperature of asphaltic concrete or mineral aggregate upon discharge from the drier shall not exceed 325°F, unless a higher temperature is recommended in writing by the asphalt binder supplier and approved by the ENGINEER.
5. The moisture content of the asphaltic concrete immediately behind the paver shall not exceed 0.5 percent. The moisture content will be determined in accordance with the requirements of Arizona Test Method 406.
6. Asphaltic concrete shall be placed only when the temperature of the surface on which the asphaltic concrete is to be placed is at least 65°F.
7. At any time, the ENGINEER may require that the work cease or that the work day be reduced in the event that weather conditions, either existing or expected, are anticipated to have an adverse effect upon the asphaltic concrete.
8. All wheels and tires of compactors and other equipment surfaces shall be treated when necessary with a product approved by the ENGINEER in order to prevent the slicking of asphaltic concrete.
9. Asphaltic concrete immediately behind the laydown machine shall be a minimum of 250°F.

10. Just prior to being placed, the asphaltic concrete shall be in a thoroughly mixed condition, free of lumps and crusts and at such a temperature as to be in a free flowing, workable condition.
11. All courses of asphaltic concrete shall be placed and finished by means of self-propelled paving machines except under certain conditions or at certain locations where the ENGINEER deems the use of self-propelled paving machines impractical.
12. Pavers shall be equipped with a screed for the full width being paved, heated if necessary, and capable of spreading and finishing all courses of asphaltic concrete.
13. Pavers shall be equipped with automatic screed controls with sensors for either or both sides of the paver, capable of sensing grade from an outside reference line, sensing the transverse slope of the screed, and providing the automatic signals which operate the screed to maintain the desired grade and transverse slope.
14. Failure of the control system to function properly shall be cause for the suspension of the placing of asphaltic concrete.
15. The base or subgrade upon which asphaltic concrete is to be placed shall be prepared and maintained in a firm condition until asphaltic concrete is placed. It shall not be frozen or excessively wet.
16. Before asphaltic concrete is placed, the surface to be paved shall be cleaned of objectionable material and tacked.
17. Longitudinal joints of each course shall be staggered a minimum of one foot with relation to the longitudinal joint of any immediate underlying course. Longitudinal joints shall be located within one foot of the center of a lane or within one foot of the centerline between two adjacent lanes.
18. The contractor shall schedule paving operations to minimize exposed longitudinal edges. Unless otherwise approved by the ENGINEER, the contractor shall limit the placement of asphaltic concrete courses, in advance of adjacent courses, to one shift of asphaltic concrete production. The contractor shall schedule paving operations in such a manner to eliminate exposed longitudinal edges over weekends or holidays.

B. Compaction
1. Compaction shall consist of an established sequence of coverage using specified types of compactors. A pass shall be defined as one movement of a compactor in either direction. Coverage shall be the number of passes as are necessary to cover the entire width being paved.
2. The rolling sequence, the type of compactor to be used, and the number of coverages required shall be as follows:

Rolling Sequence	**Type of Compactor**		**Number of Coverages**	
	Option No.1	**Option No.2**	**Option No.1**	**Option No.2**
Initial	Static Steel	Vibrating Steel	1	1
Intermediate	Pneumatic Tired	Vibrating Steel	2 – 6*	2 – 4*
Finish	Static	Static Steel	1 - 3	1 - 3
*Based on the roller pattern which exhibits the best performance.				

3. The ENGINEER shall select the option for compaction and, when pneumatic-tired compactors are used, will designate the tire pressure.
4. Steel wheel compactors shall not be used in the vibratory mode for courses of one inch or less in nominal thickness nor when the temperature of the asphaltic concrete falls below 180°F. Steel wheel compactors shall weigh not less than eight tons.

5. Initial and intermediate compaction shall be completed before the temperature of the asphaltic concrete falls below 200°F. All edges shall be rolled with a pneumatic tired compactor, or other methods approved by the ENGINEER, while the mixture is still hot.
6. Compaction will be deemed to be acceptable on the condition that the asphaltic concrete is compacted using the type of compactors specified, ballasted, and operated as specified and with the number of coverages of the compactors as specified.

C. Acceptance: Asphaltic concrete will be accepted complete in place if, in the judgment of the ENGINEER, the asphaltic concrete reasonably conforms to the requirements specified herein. Asphaltic concrete that is not acceptable and is rejected shall be replaced to the satisfaction of the ENGINEER and at no expense to the Owner.

2.04 METHOD OF MEASUREMENT

A. Asphaltic concrete will be measured by the ton for the mixture actually used, which will include the weight of mineral aggregate, bituminous material, and mineral admixture. Measurement will include any weight used in construction of intersections, turnout, curbs, spillways and spillway inlets, ditches, catch basin entrances, median strips, sidewalks or other miscellaneous items or surfaces.

PART 3 – EXECUTION

3.01 CONSTRUCTION REQUIREMENTS FOR NEW ROADWAY PAVEMENT

A. Subgrade Preparation shall comply with the Geotechnical Evaluation.

B. Aggregate Base: Aggregate base shall be provided where shown and to the thickness shown. Construction of the aggregate base course shall be as shown on the plans.

C. Asphalt Concrete:
1. AC paving shall be constructed as shown on the plans.
2. Alternate compacting equipment or substitution of a vibratory roller for a pneumatic-tired roller must be approved by the ENGINEER.
3. All mixtures shall be spread at a temperature of not less than 250°F. Base material compaction shall be completed before the mix reaches 200°F.

D. Pavement Marking: Application of the paint shall be in accordance with the paint manufacturer's instructions. Traffic markings obliterated by the WORK shall be repainted, unless otherwise directed by the ENGINEER.

3.02 CONSTRUCTION REQUIREMENTS FOR PAVEMENT REPAIR

A. Preparation of the site for pavement repair shall be in accordance with the Contract Drawings.

B. New pavement shall be placed according to the provisions of this Section and shall be of similar materials and pavement thickness as existing adjacent pavement except that the new pavement section surface shall be 1/8-inch higher than adjacent pavement.

C. Diamond saw cut joining pavement edges and tack coat edges.

END OF SECTION

SECTION 32 1600 – CURBS, GUTTERS, SIDEWALKS, AND DRIVEWAYS

PART 1 – GENERAL

1.01 SUMMARY

A. Section Includes: Concrete curbs, gutters, sidewalks, valley gutters, driveways, access ramps, and alley intersections.

1.02 SYSTEM DESCRIPTION

A. Performance Requirements: Construct various types of concrete curb, gutter, sidewalk, driveways, and alley intersections to dimensions and details indicated on the Drawings.

1.03 SUBMITTALS

A. Submittals shall be made in accordance with Section 01 3300 – Submittal Procedures.

B. Product Data: Submit data completely describing products.

C. Samples: Submit samples when requested.

PART 2 – PRODUCTS

2.01 MATERIALS

A. Concrete: 4000 psi, conforming to the applicable requirements of these Specifications.

B. Curb Finishing Mortar: 1 part Portland cement to two parts sand.

C. Form Release Material: Light oil or other releasing agent of type which does not discolor concrete or interfere with the application of finishing mortar to curb tops and faces.

D. Joint Materials:
   1. Expansion: Comply with requirements as specified in these Specifications.
   2. Construction: Steel dividers or plastic inserts.

PART 3 – EXECUTION

3.01 EXAMINATION

A. Verification of Conditions: Verify field conditions, including subgrade condition and interferences, before beginning construction.

3.02 PREPARATION

A. Surface Preparation:
   1. Subgrade:
      a. Construct and compact true to grades and lines indicated on the Drawings and requirements as specified in these Specifications.
      b. Remove soft or unsuitable material to depth of not less than 6 inches below subgrade elevation and replace with satisfactory material.
   2. Forms and Subgrade: Water immediately in advance of placing concrete.

3.03 INSTALLATION

A. Special Techniques:
   1. CONTRACTOR's Option:
      a. Construct concrete curbs and gutters by conventional use of forms, or by means of curb and gutter machine when acceptable to the ENGINEER.
      b. When use of machines designed specifically for work of this Section are accepted by the ENGINEER, results must be equal to or better than those produced by use of forms.

c. Applicable requirements of construction that apply to use of forms also apply to use of machines.
d. Discontinue use of machines when results are not satisfactory to the ENGINEER.

B. Forms:
1. Carefully set to line and grade and securely stake in position forms conforming to dimensions of items to be constructed.
2. Thoroughly clean prior to each use and coat with form releasing material.

C. Expansion and Contraction Joints:
1. Expansion Joints:
a. Construct vertically, and at right angles to centerline of street and match joints in adjacent pavement or sidewalks.
b. Constructed at radius points, driveways, alley entrances, and at adjoining structures.
c. Fill joints with expansion joint filler material.
2. Contraction Joints:
a. Constructed not more than 15 feet apart.
b. Make joints of construction joint material, scoring or saw cutting to depth of not less than 1-1/2 inches, and matching joints in adjacent pavement or sidewalk.

D. Concrete:
1. Placing:
a. Thoroughly spade concrete away from forms so that no rock pockets exist next to forms and so that no coarse aggregate will show when forms are removed.
2. Compacting:
a. Compact by mechanical vibrators accepted by the ENGINEER.
b. Continue tamping or vibrating until mortar flushes to surface and coarse aggregate is below concrete surface.
3. Form Removal:
a. Front Form Faces: Do not remove before concrete has taken initial set and has sufficient strength to carry its own weight.
b. Gutter and Rear Forms: Do not remove until concrete has hardened sufficiently to prevent damage to edges. Take special care to prevent damage.
4. Finishing and Curing: Comply with requirements of these Specifications, except as modified here:
a. As soon as curb face forms are stripped, apply finishing mortar to the top and face of curb and trowel to a smooth, even finish. Finish with fine haired broom in direction of work.
b. Where curb is installed without integral gutter, extend finish 2 inches below grade.
c. Edge concrete at expansion joints to 1/4-inch radius.
d. Flow lines of gutters shall be troweled smooth 4 inches out from curb face for integral curb and gutter and 4 inches on both sides of flowline for gutters without curbs.

E. Backfilling: Unless otherwise specified, backfill behind curbs, gutters, or sidewalks with soil native to area and to lines and grades indicated on the Drawings.

3.04 FIELD QUALITY CONTROL

A. Tests:
   1. Curbs, Gutters, and Valley Gutters:
      a. Test face, top, back, and flow line with 10-foot straight edge or curve template longitudinally along surface.
      b. Correct deviations in excess of ¼-inch.
   2. Gutters:
      a. Frequency of Testing: When required by the ENGINEER, where gutters have slope of 0.8 foot per hundred feet or less, or where unusual or special conditions cast doubt on capability of gutters to drain.
      b. Test Method: Establish flow in length of gutter to be tested by supplying water from hydrant, tank truck, or other source.
      c. Required Results:
         1) 1 hour after supply of water is shut off, inspect gutter for evidence of ponding or improper shape.
         2) In event water is found ponded in gutter to depth greater than 1/2 inch, or on adjacent asphalt pavement, correct defect, or defects in manner acceptable to the ENGINEER without additional cost to the Contract.

3.05 ADJUSTING

A. Repair portions of concrete damaged while stripping forms or, when damage is severe, replace such work at no additional cost to the Contract. Evidence of repairs shall not be noticeable in the finished product.

B. Remove and replace sections of work deficient in depth or not conforming to requirements indicated on the Drawings and specified in the Specifications at no additional cost to the Contract. Removal and replacement shall be the complete section between two joints.

END OF SECTION

SECTION 33 0505.31 – PIPELINE HYDROSTATIC TESTING

PART 1 – GENERAL

1.01 THE REQUIREMENT

A. Perform all pipeline flushing and testing, complete, for piping system piping as specified herein and in accordance with the requirements of the Contract Documents.

B. Be responsible for providing conveyance of test water to the point of usage and also for disposal, as required, of water used in the testing operations.

1.02 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS

A. Commercial Standards:

ANSI/AWWA B300	Hypochlorites
ANSI/AWWA B301	Liquid Chlorine
ANSI/AWWA C651	Disinfecting Water Mains
ASTM A746	Ductile Iron Gravity Sewer Pipe
ASTM F1417	Installation Acceptance of Plastic Gravity Sewer Lines Using Low-Pressure Air
NSF/ANSI 60	Drinking Water Treatment Chemicals – Health Effects
NSF/ANSI 61	Drinking Water System Components – Health Effects

1.03 SUBMITTALS

A. Submittals shall be made in accordance with Section 01 3300 – Submittal Procedures.

B. Proposed plans for testing of the sanitary sewer system. The methods used may be air or water as described herein. If water method is used then provide the water conveyance, control, and disposal. Advance written notice of its proposed testing schedule for review and concurrence of the ENGINEER shall be submitted.

PART 2 – PRODUCTS

2.01 MATERIALS REQUIREMENTS

A. Temporary valves, plugs, bulkheads, and other air pressure testing and water control equipment and materials shall be provided, subject to the ENGINEER's review. No materials shall be used which would be injurious to pipeline structure and future function. Air test gauges shall be laboratory-calibrated test gauges and shall be recalibrated by a certified laboratory at the CONTRACTOR’s expense prior to the leakage test, if required by the ENGINEER.

B. All test equipment, chemicals for chlorination, temporary valves, bulkheads, or other water control equipment and materials shall be selected and furnished, subject to the ENGINEER's review. No materials shall be used that would be injurious to the construction or its future function.

C. Chlorine for disinfection may be in the form of liquid chlorine, sodium hypochlorite solution, or calcium hypochlorite granules or tablets.

D. Liquid chlorine shall be in accordance with the requirements of ANSI/AWWA B301. Liquid chlorine shall be used only:
   1. In combination with appropriate gas flow chlorinators and ejectors;
   2. Under the direct supervision of an experienced technician;
   3. When appropriate safety practices are observed.

A. Sodium hypochlorite and calcium hypochlorite shall be in accordance with the requirements of ANSI/AWWA B300.

PART 3 – EXECUTION

3.01 GENERAL – PIPELINE HYDROSTATIC TESTING

A. Unless otherwise specified, water for testing will be furnished by OWNER; however, all necessary provisions for conveying the water from the designated source to the points of use shall be made by the CONTRACTOR.

B. Release of water from pipelines, after testing has been completed, shall be performed as reviewed by the ENGINEER.

C. All testing operations shall be performed in the presence of the ENGINEER.

3.02 TESTING OF SEWER PIPING

A. General: All gravity sewer pipes and service laterals shall be tested for exfiltration and/or infiltration and deflection, as specified. All manholes shall be tested for leakage, as specified. Manholes shall be tested prior to backfill placement. Reference applicable Sections of Division 31 – Earthwork, for pipe leak testing prior to backfill placement. All leakage tests shall be completed and approved prior to placing of permanent resurfacing. When leakage or infiltration exceeds the amount allowed by the Specifications, locate the leaks, and make the necessary repairs or replacements in accordance with the Specifications to reduce the leakage or infiltration to the specified limits. Any individually detectable leaks shall be repaired, regardless of the results of the tests.

B. Leakage Tests: Sanitary sewer systems shall be tested for leakage as follows:
   1. Gravity sewers 24 inches or less in diameter, where difference in elevation between inverts of adjacent manholes is 10 feet or less; water exfiltration test or water infiltration test as approved. The ENGINEER may allow substitution of an air pressure test for the water exfiltration test.
   2. Gravity sewers 24 inches or less in diameter, where difference in elevation between inverts of adjacent manholes is greater than 10 feet: air pressure test or water infiltration test, or as approved.
   3. Gravity sewers greater than 24 inches in diameter: air pressure test or water infiltration test, or as approved.
   4. Pressure sewers (force mains): water pressure test at 120% of maximum operating pressure, measured at the lowest point of the pipeline section being tested.

C. Water Exfiltration Test: Each section of sewer shall be tested between successive manholes by closing the lower end of the sewer to be tested and the inlet sewer of the upper manhole with stoppers. The pipe and manhole shall be filled with water to a point 4 feet above the centerline of the sewer at the center of the upper manhole; or if ground water is present, 4 feet above the average adjacent ground water level, whichever is higher.
   1. The allowable leakage will be computed by the formula:

		$E = 0.000012\ LD\ (H)^{1/2}$
in which	E =	Allowable leakage in gallon per hour of sewer tested
	L =	Length of sewer and lateral connections tested, in feet
	D =	Internal diameter of the pipe in inches
	H =	Difference in elevation between the water surface in the upper manhole and the centerline of the pipe at the lower manhole; or if ground water is present above the centerline of the pipe in the lower manhole, the difference in elevation between the water surface in the upper manhole and ground water at the lower manhole.

D. Water Infiltration Test: If, in the opinion of the ENGINEER, excessive ground water is encountered in the construction of a section of the sewer, the exfiltration test for leakage shall not be used.
   1. The end of the sewer at the upper structure shall be closed sufficiently to prevent the entrance of water, and pumping of ground water shall be discontinued for at least 3 days, after which the section shall be tested for infiltration.
   2. The infiltration into each individual reach of sewer between adjoining manholes shall not exceed that allowed by the formula above, where H is the difference in the elevation between the ground water surface and the invert of the sewer at the downstream manhole.
   3. Unless otherwise specified, infiltration will be measured using measuring devices approved by the ENGINEER.

E. Air Pressure Test: Furnish all materials, equipment, and labor for making an air test. Air test equipment shall be approved by the ENGINEER.
   1. Conduct an initial air test of the sewer main line after densification of the backfill but prior to installation of the lateral connection sewers. Such tests will be considered to be for convenience and need not be performed in the presence of the ENGINEER.
   2. Each section of sewer shall be tested between successive manholes by plugging and bracing all openings in the main sewer line and the upper ends of all house connection sewers. Prior to any air pressure testing, all pipe plugs shall be checked with a soap solution to detect any air leakage. If any leaks are found, the air pressure shall be released, the leaks eliminated, and the test procedure started over again.
   3. The final leakage test of the sewer main line and branching lateral connection sewers, shall be conducted in the presence of the ENGINEER, and shall be performed in accordance with the procedures defined in ANSI/ASTM C828 and ASTM F1417, whichever is applicable.
   4. Joints may be air tested individually, joint by joint, with the use of specialized equipment. The joint testing procedure shall be submitted for the ENGINEER's review prior to testing.

F. Water Pressure Test: Preparatory to testing, the section of the pipeline to be tested shall be filled with water and placed under a slight pressure for at least 48 hours. The pipeline shall then be brought up to the test pressure specified and maintained on the section under test for a period of not less than 4 hours.
   1. Accurate means shall be provided for measuring the quantity of water required to maintain full pressure on the line for the test period, which volume shall not exceed:

		$L = \frac{CN\,D\,(P)^{1/2}}{1850}$
in which	L =	Maximum allowable leakage in gallons per hour for the section of pipeline tested
	N =	Number of joints in length tested
	D =	Diameter of pipe in inches
	P =	Test pressure in psi
	C =	1.0 for reinforced concrete pressure pipe with rubber ring joints, cylinder type
	C =	3.0 for reinforced concrete pressure pipe with rubber joints, non-cylinder type
	C =	0.50 for cast iron pipe with mechanical or rubber gasket joints and asbestos-cement pipe
	C =	1.0 for other type of cast iron joints (calked) and other types of pipe

G. Deflection Test: All flexible and semi-rigid main line pipe shall be tested for deflection, joint displacement, or other obstruction by passing a rigid mandrel through the pipe by hand, not less than 30 days after completion of the trench backfill, but prior to permanent resurfacing. The mandrel shall be a full circle, solid cylinder, or a rigid, non-adjustable, odd-numbered leg (9-leg minimum) steel cylinder, approved by the ENGINEER as to design and manufacture. The circular cross section of the mandrel shall have a diameter of at least 95% of the specified average inside pipe diameter of the pipe and the minimum length of the circular portion of the mandrel shall be equal to the nominal diameter of the pipe. Obstructions encountered by the mandrel shall be corrected.

3.03 GENERAL – PIPELINE HYDROSTATIC TESTING FOR POTABLE WATER

A. Unless otherwise indicated, water for testing and disinfecting water pipelines will be furnished by the OWNER; however, all necessary provisions for conveying the water from the designated source to the points of use shall be made by the CONTRACTOR.

B. All pressure pipelines shall be tested.

C. Disinfection shall be accomplished by chlorination. All chlorinating and testing operations shall be performed in the presence of the ENGINEER.

D. Disinfection operations shall be scheduled by as late as possible during the contract time period so as to assure the maximum degree of sterility of the facilities at the time the WORK is accepted.

E. HYDROSTATIC TESTING OF PIPELINES

Pressure testing may be performed before or after final backfilling. If the pipeline is properly and safely center-loaded, a visual inspection for leaks may be made along the pipeline, while the test section is under test pressure. Any visible leaks shall be repaired and a retest conducted. However, if mechanical compaction is to be used in the backfilling operations per AWWA C600 and C605, the pressure tests shall not be performed until final backfilling is 100% completed including compaction. Backfill and compaction shall be 100% complete for any restrained pipeline sections for the entire designated restrained distance prior to pressure testing. All pipe sections, stub laterals, fire hydrant laterals, blow-offs, and valves encompassed in the test section shall be verified to be open, water filled and pressurized. Actual hydrostatic monitor testing shall not begin until the pipeline has been filled entirely with water for at least 24 hours to allow for air venting and absorption.

1. **Pressure Testing**: Unless otherwise noted in the contract documents, the minimum prescribed test pressure shall be at least 200 psi for lines smaller than 16 inches and 150 psi for lines 16 inches or larger, not to exceed 5 psi over the minimum prescribed test pressure, as measured at the lowest end of the section under test. The duration of each pressure test shall be at least 2 hours, during which time the test section shall not drop below the minimum prescribed test pressure. If the pressure in the pipe test section has not stabilized by the end of the testing period, a hydrostatic retest will be required. Each section of a new line between sectionalizing valves or between the last sectionalizing valve and the end of the project shall be tested separately as required in AWWA C600 and C605, and/or as modified in these specifications, except that any such section less than 500 feet in length may be tested with the adjacent section, if both sections of line have the same pipe class rating. No section greater than 2,640 feet in total pipe length shall be tested without written permission of the ENGINEER. CONTRACTOR shall bleed all air out of new lines being tested. After all air has been determined to have been removed and the pressure has stabilized and maintained constant, the line shall be determined to be ready for testing. The CONTRACTOR shall furnish all necessary apparatus and assistance to conduct the testing.

2. **Testing Allowance / Makeup Water:** If a testing allowance is permitted by the Contracting Agency, the makeup water volume shall be determined after the pressure test has been satisfactorily completed and all backfilling and compaction has been completed to top of trench. The allowance shall be defined as the maximum quantity of additional water necessary to be supplied into the pipe section under test to restore the ending test pressure to the beginning test pressure, after the pipeline has been filled with water and all air expelled. The duration of each makeup water test shall be at least 2 hours. To pass the allowance testing, the quantity of makeup water from the pipeline shall not exceed the makeup water quantity allowed by the following formula:

$$\frac{A = LD\sqrt{P}}{148{,}000}$$

Where

A = testing allowance (makeup water), gallons per hour.

L = length of pipe tested, feet.

D = nominal diameter of pipe, inches.

P = test pressure, pounds/square inch.

If the pipeline under test contains sections of various diameters, the testing allowance will be the sum of the computed allowance for each size. Should the test on any section of the pipeline require more makeup water than allowed by the above formula, the CONTRACTOR shall locate and repair the defective pipe, fittings, or joint until the makeup water volume is within the specified allowance. All repairs and re-tests, if required, shall be made at the CONTRACTOR's expense

F. DISINFECTING PIPELINES

1. General**:** All potable water pipelines except those appurtenant to hydraulic structures shall be disinfected in accordance with the requirements of NSF/ ANSI 60 & 61 AND AWWA C651 (Latest Version) Standards.
2. Sampling Ports**:** Provide sampling ports along the pipeline as defined on AWWA C651. Taps may be made at man-ways and air valves to help facilitate the spacing requirement.
3. New water mains shall be physically isolated from active distribution systems until initial disinfection and satisfactory bacteriological results have been completed.
4. Disinfection**:** The method of chlorination used shall be approved by the Contracting Agency and must conform to NSF/ANSI 60 & 61 and the AWWA C651 (Latest Version) Standards. The OWNER/ENGINEER shall determine the number and locations for sample risers. The CONTRACTOR is responsible for supplying equipment to properly dose the new main with a chlorine concentration not less than 10 parts per million (ppm). The OWNER/ENGINEER will verify the chlorine level is at 10 ppm at time of dosing and verify that after 24 hours of high chlorine solution sitting in the pipes that the chlorine concentration is at 10 ppm or greater. All new valves, hydrants and other appurtenances shall be operated fully to ensure full disinfection from the chlorine solution. After 24-hour verification is complete, the water main shall be completely flushed of the high chlorine concentration. A chlorine neutralizing agent may be required during flushing discharge. Check with the OWNER/ENGINEER to confirm.
   a. Methods of Applying Chlorine: One of the following methods of application of chlorine shall be used, subject to the approval of the Contracting Agency.
      1) Liquid chlorine gas-water mixture.
      2) Calcium or sodium hypochlorite and water mixture.

b. Point of Application: The preferred point of application of the chlorinating agent is at the beginning of the pipeline extension or any valved section of it and through a corporation stop inserted in the top of the newly laid pipe. The water injector for delivering the chlorine-bearing water into the pipe should be supplied from a tap or other potable water source on the pressure side of the gate valve controlling the flow into the pipeline extension.

c. Rate of Application: Water from the existing distribution system or other approved potable water source of supply shall be controlled so the rate of flow shall not exceed 500 gpm, unless approved by the OWNER/ENGINEER, through a suitable measuring device into the newly laid pipeline during the application of chlorine. The rate of chlorine solution flow shall be in such proportion to the rate of water entering the pipe that the chlorine dose applied to the water entering the newly laid pipe shall produce at least 10 ppm of residual chlorine after 24 hours standing in the pipe. This may be expected with an application of 50 ppm, although some conditions may require more. On lines 12 inches in diameter or less, determination of the rate of flow of water into the line to be treated may be made by starting with the line full of water and measuring the rate of discharge at a hydrant located at the end of the pipe farthest away from the point of chlorine application. For lines larger than 12 inches in diameter, the disinfection operation is generally started with the line empty.

d. Retention Period: The highly chlorinated water shall be retained in the pipe long enough to destroy all non-spore-forming bacteria. This period should be at least 24 hours and no more than 48 hours. If the circumstances are such that less than a 24-hour retention period must be used and upon approval by the OWNER/ENGINEER, the chlorine concentration shall be increased to 100 ppm not to exceed 300 ppm and retained for at least 2 hours. Under these conditions, special care should be taken to avoid chemical attack on pipes, valves, hydrants, and other appurtenances.

e. Short Pipe Sections / Laterals / Stubs: For short sections of new pipelines of up to twenty feet or less in length and where the new line cannot be isolated for testing or installation of a temporary backflow and metering set-up is not possible or feasible, the following procedure may be used with OWNER/ENGINEER approval on a case-by-case basis. Various modifications may be necessary or required depending on specific circumstances. This does not apply to small diameter domestic copper water services of up to two inches.

   1) 100% of all new pipe materials/fittings used in the installation and tie-in from the existing main line to the backflow assembly on fire lines and up to the first meter, connection on domestic water lines shall be disinfected. Any new tie-in valves at the main line shall remain completely closed.
   2) All new pipe materials/fittings used in the installation and tie-in are to be disinfected by swabbing with a chlorine solution of at least 200 ppm using NSF/ANSI 60 and 61 approved equipment, materials, and chemicals. The chlorine solution shall be tested by the OWNER/ENGINEER or designated representative to ensure that it meets the strength requirements. Inspector shall witness the swabbing procedure and document results. A new swabbing device should be used for each new line.
   3) The new lines and fittings shall remain empty and closed to the atmosphere for 24 hours to allow the high chlorine treatment sufficient time to disinfect.

4) After the 24-hour period, the new valves shall be operated, and the ends of the lines shall be opened at the largest port available to allow initial flushing of the high chlorine solution. The Contracting Agency shall test this first flow of water to verify that at least 10 ppm of chlorine is still present. The line can then continue to be sufficiently flushed until the chlorine levels are below 2.0 ppm as verified by the Contracting Agency.
5) The new lateral valves at the main tie-in shall then be closed and remain closed after flushing; the new lateral line shall remain charged with water and allowed to sit for an additional 24 hours.
6) After 24 hours, the OWNER/ENGINEER shall check the chlorine residual levels and collect microbiological samples for lab testing as detailed herein.
7) The new lateral valves at the main tie-in shall remain closed until the OWNER/ ENGINEER receives the laboratory results that show a negative or "Absent" reading for both Total Coliform and E. Coli.

f. Final Flushing, Sampling and Testing**:** Following chlorination, all treated water in the newly laid pipeline shall be thoroughly flushed until the replacement water throughout the new pipeline can be proved, by laboratory testing, comparable in quality to the water served to the public from the existing water system. Prior to sampling for laboratory testing, the residual chlorine throughout the length of the pipeline shall be reduced to 2.0 ppm or less per Regulatory Agency allowances. Once the required residual chlorine level in the pipeline is achieved, bacteriological samples shall be taken as required by Regulatory Agency.

G. CONNECTIONS TO EXISTING SYSTEM

Any temporary air release blow-offs and test sampling risers shall be left exposed, accessible, and protected during backfill operations until all testing is complete. After all testing has been completed and passed acceptance, all temporary blow-offs and sampling risers shall be properly lowered and terminated. Connections to existing pipelines or existing valves shall not be made until after all new pipe main line or specific sections thereof, has satisfactorily passed all required hydrostatic and disinfection tests and the Regulatory Agency gives approval to make the final connections and put new water mainline into service.

END OF SECTION

SECTION 33 0519 – DUCTILE IRON PIPE

PART 1 – GENERAL

1.01 THE REQUIREMENT

A. Provide ductile iron pipe and perform all appurtenant work, complete in place, in accordance with the Contract Documents.

1.02 REFERENCE SPECIFICATIONS, CODES AND STANDARDS

A. Commercial Standards:

ANSI/AWWA	
C104/A21.4	Cement-Mortar Lining for Ductile-Iron Pipe and Fittings for Water
C105/A21.5	Polyethylene Encasement for Ductile-Iron Piping for Water and Other Liquids
C110/A21.10	Ductile-Iron and Gray-Iron Fittings, 3 inches through 48 inches for Water and Other Liquids
C111/A21.11	Rubber-Gasket Joints for Ductile-Iron and Gray-Iron Pressure Pipe and Fittings
C115/A21.15	Flanged Ductile-Iron and Gray-Iron Pipe with Threaded Flanges
C150/A21.50	Thickness Design of Ductile-Iron Pipe
C151/A21.51	Ductile-Iron Pipe, Centrifugally Cast in Metal Molds or Sand-Lined Molds, for Water or Other Liquids
C153/A21.53	Ductile-Iron Compact Fittings, 3 inches through 12 inches for Water and Other Liquids
AWWA	
C209	Cold-Applied Tape Coatings for the Exterior of Special Sections, Connections, and Fittings for Steel Water Pipelines
C214	Tape Coating Systems for the Exterior of Steel Water Pipelines
C600	Installation of Ductile Iron Water Mains and Their Appurtenances
ASTM	
A746	Ductile Iron Gravity Sewer Pipe
C150	Specification for Portland Cement

1.03 SUBMITTALS

A. Submittals shall be made in accordance with Section 01 3300 – Submittal Procedures.

B. Shop Drawings: Submit shop drawings of pipe and fittings in accordance with the requirements in Section 01 3300 – Submittal Procedures, the requirements of the referenced standards, and the following supplemental requirements as applicable:
   1. Dimensional drawings of all valves, fittings, and appurtenances.
   2. For pipe 24 inches in diameter and larger, line layout and marking diagrams which indicate the specific number of each fitting and the location and the direction of each fitting in the completed line. In addition, the line layouts shall include: the pipe station and invert elevation at all changes in grade or horizontal alignment; all elements of curves and bends, both in horizontal and vertical alignment; and the limits of each reach of restrained joints, or of concrete encasement.

1.04 QUALITY ASSURANCE

A. All pipe shall be subject to inspection at the place of manufacture in accordance with the provisions of the referenced standards, as supplemented by the requirements herein.

B. During the manufacture of the pipe, the ENGINEER shall be given access to all areas where manufacturing is in process and shall be permitted to make all inspections necessary to confirm compliance with the Specifications.

PART 2 – PRODUCTS

2.01 GENERAL

A. Mortar-lined ductile iron pipe shall conform to ANSI/AWWA C151, C104 and C105, subject to the following supplemental requirements. The pipe shall be of the diameter and class noted in the Contract Documents. The pipe shall be furnished complete with rubber gaskets, with all specials and fittings provided as required under the Contract Documents.

B. Markings: Legibly mark specials 24 inches in diameter and larger in accordance with the laying schedule and marking diagram. All fittings shall be marked at each end with top field centerline.

C. Handling and Storage: The pipe shall be handled by devices acceptable to the ENGINEER, designed and constructed to prevent damage to the pipe coating/exterior. The use of equipment that might injure the pipe coating/exterior will not be permitted. Stockpiled pipe shall be suitably supported and shall be secured to prevent accidental rolling. All other pipe handling equipment and methods shall be acceptable to the ENGINEER.

D. Laying Lengths: Maximum pipe laying lengths shall be 20 feet with shorter lengths provided as required by the Drawings.

E. Finish: The pipe shall have smooth, dense interior surfaces, and shall be free from fractures, excessive interior surface crazing, and roughness.

F. Closures and Correction Pieces: Closures and correction pieces shall be provided as required so that closures may be made due to different headings in the pipe laying operation and so corrections may be made to adjust the pipe laying to conform to pipe stationing shown on the Drawings. The locations of correction pieces and closure assemblies are shown on the Drawings. Any change in location or number of said items shall be acceptable to the ENGINEER.

2.02 PIPE DESIGN CRITERIA

A. General: Ductile iron pipe shall be designed in accordance with the requirements of ANSI/AWWA C150 as applicable and as modified in this Section.

B. Pipe Wall Thickness for Internal Pressure: The pipe shall be designed with a net thickness to withstand the design pressure in accordance with the hoop stress formula.

C. Pipe Wall Thickness for External Load: The pipe shall also be designed with a net thickness to withstand external loads using ANSI/AWWA C150 Design Equation (2) with the appropriate bending moment and deflection coefficients for Laying Condition Types 4 and 5 as applicable.

D. The pipe deflection shall be checked using ANSI/AWWA C150 Design Equation (3) and the coefficients stated above. The allowable deflection shall not exceed the manufacturer’s recommended amount.

E. In lieu of ANSI/AWWA C150 Design Equation (4), the earth loads will be computed using the following 2 equations for trench or embankment loading as applicable:

1. Trench Condition:

$$W_d = C_d w B_d^2$$

Where: W_d = Earth Load in pounds per linear foot
C_d = Calculation Coefficient
Ku' = [0.13]
w = [120] lb/ft^3
B_d = Trench width at top of pipe, feet

2. Positive Projecting Embankment Condition:

$$W_c = C_c w B_c^2$$

Where: W_c = Earth Load in pounds per linear foot
C_c = Calculation Coefficient (based on r_{sd}P of 0.25)
Ku = [0.19]
w = [120] lb/ft^3
B_c = Outside diameter of pipe, feet

F. The above 2 formulas are based on a depth of cover of 10 feet or greater. For depths of cover of less than 10 feet, HS-20 live load shall be included. For depths of cover of 3 feet or less, HS-20 live load plus impact shall be included. The determination of live load and impact factors shall be as recommended by AASHTO in "Standard Specifications for Highway Bridges."

G. If the calculated deflection exceeds 0.0225 times the nominal diameter, the pipe class shall be increased.

H. Minimum Pipe Wall Thickness: In addition to the requirements of this Section, the minimum wall thickness shall be in accordance with Table 50.5 of ANSI/AWWA C150.

2.03 MATERIALS

A. Ductile Iron Pipe: Pipe materials shall conform to the requirements of ANSI/AWWA C151.

B. Cement: Cement for mortar lining shall conform to the requirements of ANSI/AWWA C104, provided, that cement for mortar lining shall be Type II or V. Cement shall not originate from kilns that burn metal-rich hazardous waste fuel, nor shall a fly ash or pozzolan be used as a cement replacement.

2.04 SPECIALS AND FITTINGS

A. Fittings for ductile iron pipe shall conform to the requirements of ANSI/AWWA C153/A21.53 for diameters 3 inches through 24 inches and shall have a minimum pressure rating of 350 psi. Ductile iron fittings larger than 24 inches shall conform to the above referenced standard with the necessary modifications for the larger size.

2.05 DESIGN OF PIPE

A. General: The pipe furnished shall be ductile iron pipe, with rubber-gasketed joints or as specified on the plans.

B. The pipe shall be designed, manufactured, tested, inspected, and marked according to applicable requirements previously stated and except as hereinafter modified, shall conform to ANSI/AWWA C151.

C. Pipe Dimensions: The pipe shall be of the diameter and class shown. The minimum wall thickness for each pipe size shall be as specified or shown.

D. Fitting Dimensions: The fittings shall be of the diameter and class shown.

E. Joint Design: Ductile iron pipe and fittings shall be furnished with mechanical joints, push-on joints, flanged joints, and restrained joints as required.
   1. Mechanical and push-on joints shall conform to ANSI/AWWA C111/A21.11.
   2. Mechanical and push on joints gaskets shall be “fast Grip” Gaskets by American Ductile Iron Pipe, or “Field Locks” Gaskets by U.S. Pipe, or equal.
   3. Restrained joints shall be "Lok-Ring" Restrained Joint by American Ductile Iron Pipe, "TR FLEX" Restrained Joint by U.S. Pipe, or ENGINEER-approved equal. Provide as indicated on the plans.
   4. Flanged joints shall conform to ANSI/AWWA C115/A21.15. Special ductile iron flanges to match up to 250 psi valve and equipment flanges shall meet ANSI/AWWA C110 and be specially drilled to ANSI/ASME B16.1 Class 250 standard dimensions with raised face.

F. For bell-and-spigot ends with rubber gaskets, the clearance between the bells and spigots shall be such that when combined with the gasket groove configuration and the gasket itself, will provide watertight joints under all operating conditions when properly installed. Require the pipe manufacturer to submit details complete with significant dimensions and tolerances and to submit performance data indicating that the proposed joint has performed satisfactorily under similar conditions. In the absence of a history of field performance, the results of a test program shall be submitted.

G. Shop-applied interior linings and exterior coatings shall be held back from the ends of the pipe as shown or as otherwise acceptable to the ENGINEER.

2.06 CEMENT-MORTAR LINING

A. Cement-Mortar Lining for Shop Application: Except as otherwise provided herein, interior surfaces of all ductile iron pipe, fittings and specials shown on the plans shall be cleaned and lined in the shop with cement-mortar lining applied centrifugally in conformity with ANSI/AWWA C104. During the lining operation and thereafter, the pipe shall be maintained in a round condition by suitable bracing or strutting. The lining machines shall be of a type that has been used successfully for similar work. Every precaution shall be taken to prevent damage to the lining. If lining is damaged or found faulty at delivery site, the damaged or unsatisfactory portions shall be replaced with lining conforming to these Specifications.

B. The minimum lining thickness shall be as follows:

Nominal Pipe Diameter (inches)	**Minimum Lining Thickness (inches)**
3 - 12	$^{1}/_{8}$
14 - 24	$^{3}/_{16}$
30 - 54	$^{1}/_{4}$

C. Protection of Pipe Lining/Interior: All shop-applied cement mortar lining shall be given a seal coat of asphaltic material in conformance with ANSI/AWWA C104.

2.07 EXTERIOR COATING OF PIPE

A. Exterior Coating of Exposed Piping: The exterior surfaces of pipe which will be exposed to the atmosphere inside structures or above ground shall be thoroughly cleaned and then given a shop coat of rust-inhibitive primer conforming to the requirements of these Specifications.

B. Exterior Coating of Buried Piping: The exterior coating shall be an asphaltic coating approximately 1mil thick. Where noted as required by the ENGINEER, pipe will be encased in polyethylene sleeves.

PART 3 – EXECUTION

3.01 INSTALLATION OF PIPE

A. Handling and Storage: All pipe, fittings, etc., shall be carefully handled and protected against damage, impact shocks, and free fall. All pipe handling equipment shall be acceptable to the ENGINEER. Pipe shall not be placed directly on rough ground but shall be supported in a manner that will protect the pipe against injury whenever stored at the trench site or elsewhere. No pipe shall be installed where the lining or coating show defects that may be harmful as determined by the ENGINEER. Such damaged lining or coating shall be repaired, or a new undamaged pipe shall be furnished and installed.

B. All pipe that is damaged prior to Substantial Completion shall be repaired or replaced.

C. Inspect each pipe and fitting prior to installation to ensure that there are no damaged portions of the pipe.

D. Before placement of pipe in the trench, each pipe or fitting shall be thoroughly cleaned of any foreign substance, which may have collected thereon, and shall be kept clean at all times thereafter. For this purpose, the openings of all pipes and fittings in the trench shall be closed during any interruption to the WORK.

E. Pipe Laying: The pipe shall be installed in accordance with ANSI/AWWA C600.

F. Pipe shall be laid directly on the bedding material. No blocking will be permitted, and the bedding shall be such that it forms a continuous, solid bearing for the full length of the pipe. Excavations shall be made as needed to facilitate removal of handling devices after the pipe is laid. Bell holes shall be formed at the ends of the pipe to prevent point loading at the bells or couplings. Excavation shall be made as needed outside the normal trench section at field joints to permit adequate access to the joints for field connection operations and for application of coating on field joints.

G. Each section of pipes 24 inches in diameter and larger shall be laid in the order and position shown on the laying schedule. In laying pipe, it shall be laid to the setline and grade, within approximately one inch plus or minus. On grades of zero slopes, the intent is to lay to grade.

H. Where necessary to raise or lower the pipe due to unforeseen obstructions or other causes, the ENGINEER may change the alignment and/or the grades. Such change shall be made by the deflection of joints, by the use of bevel adapters, or by the use of additional fittings. However, in no case shall the deflection in the joint exceed the maximum deflection recommended by the pipe manufacturer. No joint shall be misfit any amount that will be detrimental to the strength and water tightness of the finished joint.

I. Except for short runs that may be permitted by the ENGINEER, pipes shall be laid uphill on grades exceeding 10%. Pipe that is laid on a downhill grade shall be blocked and held in place until sufficient support is furnished by the following pipe to prevent movement. All bends shall be properly installed as shown.

J. Shallow buried pipes and pipes underneath structures shall be concrete encased where noted in the Contract Documents.

K. Cold Weather Protection: No pipe shall be installed upon a foundation into which frost has penetrated or at any time that there is a danger of the formation of ice or penetration of frost at the bottom of the excavation. No pipe shall be laid unless it can be established that the trench will be backfilled before the formation of ice and frost occurs.

L. Pipe and Specials Protection: The openings of all pipe and specials shall be protected with suitable bulkheads to prevent unauthorized access by persons, animals, water, or any undesirable substance. At all times, means shall be provided to prevent the pipe from floating.

M. Pipe Cleanup: As pipe laying progresses, the pipe interior shall be kept free of all debris. Completely clean the interior of the pipe of all sand, dirt, mortar splatter and any other debris following completion of pipe laying, pointing of joints and any necessary interior repairs prior to testing and disinfecting the completed pipeline.

3.02 RUBBER GASKETED JOINTS

A. Rubber Gasketed Joints: Immediately before jointing pipe, the bell end of the pipe shall be thoroughly cleaned, and a clean rubber gasket lubricated with an approved vegetable-based lubricant shall be placed in the bell groove. The spigot end of the pipe shall be carefully cleaned and lubricated with a vegetable-based lubricant. The spigot end of the pipe section shall then be inserted into the bell of the previously laid joint and telescoped into its proper position. Tilting of the pipe to insert the spigot into the bell will not be permitted.

3.03 INSTALLATION OF PIPE APPURTENANCES

A. Protection of Appurtenances: Where the joining pipe is tape-coated, buried appurtenances shall be coated with cold-applied tape in accordance with ANSI/AWWA C209, Type II. Where pipe is encased in polyethylene sleeves, buried appurtenances shall also be encased in polyethylene.

B. Installation of Valves: All valves shall be handled in a manner to prevent any injury or damage to any part of the valve. All joints shall be thoroughly cleaned and prepared prior to installation. Adjust all stem packing and operate each valve prior to installation to insure proper operation.

C. All valves shall be installed so that the valve stems are plumb and, in the location, shown.

END OF SECTION

SECTION 33 0531 – POLYVINYL CHLORIDE (PVC) PIPE

PART 1 – GENERAL

1.01 REQUIREMENT

A. Polyvinyl chloride pressure pipe for water distribution, in nominal diameters 4 inches through 60 inches.

B. Polyvinyl chloride sewer pipe for gravity sewers in nominal diameters 4 inches through 48 inches.

C. Polyvinyl chloride pressure pipe for sewers force mains in nominal diameters 4 inches through 60 inches.

D. Pipe 3 inch or smaller: Shall comply with these Specifications.

1.02 REFERENCES

A. Commercial Standards:

ANSI A 21.16 (AWWA C116)	Protective Fusion Bonded Epoxy Coating for the Interior and Exterior Surfaces of Ductile Iron and Grey Iron Fittings for Water Supply Service.
ASTM	
D1248	Polyethylene Plastics Molding and Extrusion Materials.
D1784	Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds.
D2241	Poly (Vinyl Chloride) (PVC) Pressure-Rated Pipe (SDR Series).
D2321	Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications.
D2444	Determination of the Impact Resistance of Thermoplastic Pipe and Fittings by Means of a Tup (Falling Weight).
D2680	Acrylonitrile-Butadiene-Styrene (ABS) and Poly (Vinyl Chloride) (PVC) Composite Sewer Piping.
D2774	Underground Installation of Thermoplastic Pressure Piping.
D3034	Type PSM Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings.
D3139	Joints for Plastic Pressure Pipes Using Flexible Elastomeric Seals.
D3212	Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals.
F477	Elastomeric Seals (Gaskets) for Joining Plastic Pipe.
F679	Poly (Vinyl Chloride) (PVC) Large-Diameter Plastic Gravity Sewer Pipe and Fittings.
F794	Poly (Vinyl Chloride) (PVC) Profile Gravity Sewer Pipe and Fittings Based on Controlled Inside Diameter.
F949	Poly (Vinyl Chloride) (PVC) Corrugated Sewer Pipe with Smooth Interior and Fittings.
AWWA C110	American National Standard for Ductile-Iron and Gray-Iron Fittings, 3 Inches Through 48 Inches for Water.
AWWA C605	Underground Installation of PVC Pressure Pipe and Fittings for Water.
AWWA C651	Disinfecting Water Mains.
AWWA C111	Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings.
AWWA C900-16	Polyvinyl Chloride (PVC) Pressure Pipe and Fabricated Fittings, 4 Inches Through 60 Inches.

AWWA C909	Molecularly-Oriented Polyvinyl Chloride (PVCO) Pressure Pipe, 4 Inches through 12 Inches (100mm through 300 mm), for Water Distribution.
PPI TR3	Developing Recommended Hydrostatic Design Stresses for Thermoplastic Pipe Materials.
UNI-B-13	Joint Restraint Devices for Use with Polyvinyl Chloride Pipe.

1.03 SUBMITTALS

A. Submittals shall be made in accordance with Section 01 3300 – Submittal Procedures.

B. Submit shop drawings showing design of new pipe and fittings indicating alignment and grade, laying dimensions, fabrication, fittings, flanges, and special details.

1.04 QUALITY CONTROL

A. Submit manufacturer's certifications that PVC pipe and fittings meet requirements of this Section and AWWA C900 and AWWA C909 for pressure pipe applications, or appropriate ASTM standard specified for gravity sewer pipe.

B. Submit manufacturer's certification that PVC pressure pipe for water lines and force mains has been hydrostatically tested at factory in accordance with AWWA C900, AWWA C909, and this Section.

C. When foreign manufactured material is proposed for use, have material tested for conformance to applicable ASTM requirements by certified independent testing laboratory located in United States. Certification from another source is not acceptable. Furnish copies of test reports to ENGINEER for review. Cost of testing paid by CONTRACTOR.

PART 2 – PRODUCTS

2.01 MATERIAL

A. Use PVC compounds in manufacture of pipe that contain no ingredient in amount that has been demonstrated to migrate into water in quantities considered to be toxic.

B. Furnish PVC pressure pipe manufactured from Class 12454-A or Class 12454-B virgin PVC compounds as defined in ASTM D1784. Use compounds pre-qualified for a 4,000 psi hydrostatic design basis, and a maximum hydrostatic design stress of 2,000 psi for water at 73°F per requirements of PPI TR3. Provide pipe which is homogeneous throughout, free of voids, cracks, inclusions, and other defects, uniform as commercially practical in color, density, and other physical properties. Deliver pipe with surfaces free from nicks and scratches with joining surfaces of spigots and joints free from gouges and imperfections which could cause leakage.

C. Fusible PVC pipes shall meet ASTM D2241/ D1785, CSA B137.3, AWWA C900, NFS 61 (potable water), and ASTM Cell Classification 12454.

D. PVC Solvent Weld Schedule Pipe shall meet:
1. PVC Schedule 40 and 80: ASTM D1785/ D2665 / D2241
2. Cellular Core PVC Sch 40: ASTM F891
3. PVC Schedule 30: ASTM D2949
4. PVC Perforated Drain Pipe: ASTM D2729
5. ABS Sch 40: ASTM D2661
6. Cellular Core ABS Sch 40: ASTM F628

E. Standard PVC laying length shall be 14 or 20 ft +/- 1”. Fusible PVC pipe shall be manufactured in a standard 40’ nominal length, or custom lengths as specified in the plans. Solvent Weld Pipe shall be manufactured in standard laying length of 10 ft and 20 ft.

F. Do not use PVC for offset sections with depth of cover greater than 20 feet or less than 4

feet, unless acceptable by manufacturer. Do not use PVC in potentially petroleum-contaminated areas.

G. PVC in areas exposed to direct sunlight shall be protected with UV-inhibitor coating.

2.02 Pipe Class and Working Pressures:

A. Pipe Pressure Class shall be as noted per plan and shall meet the requirements in the following Table 1.

Table 1 – Pipe Pressure Class

APPLICATION	ASTM or AWWA DESIGNATION	SDR (Max.)/ STIFFNESS (MIN.)	DIAMETER SIZE RANGE
PRESSURE/ GRAVITY	C900 C900 C900	DR 25/ Class 165 psi DR 18/ Class 235 psi DR 14/ Class 305 psi	4" to 60” 4" to 42 4” to 30”
GRAVITY	D3034 D3034	SDR 35/ 46 psi SDR 26/ 115 psi	4" to 15" 4" to 15"
GRAVITY	F679 F679	PS46/ 46 psi PS 115/ 115 psi	18” to 48” 18" to 48"
CORRUGATED GRAVITY	F949 F949	N/A / 46 psi N/A / 115 psi	4" to 48" 4" to 48"
CORRUGATED GRAVITY	F794 F794	N/A / 46 psi N/A / 115 psi	4" to 48" 8" to 15"

2.03 PRESSURE SERVICE PIPE

A. All potable water pipe shall bear National Sanitation Foundation Seal of Approval (NSF-PW) and meet the requirements of AWWA C900, ANSI/ NSF 61.

B. For PVC C900, pipeline curves and bend can be made by deflecting joints by no more than 1.5 deg. Do not exceed maximum deflection recommended by pipe and fitting manufacturer. Submit details of other methods of providing curves and bends for review by ENGINEER.

C. For PVC Solvent Weld Pipe (12” and smaller), pipeline curves can be made by bending the pipe within the limits of pipe curvature found in Table 2 below.

2.04 GRAVITY SEWER PIPE

A. When solid wall PVC pipe 18 inches to 27 inches in diameter is required in SDR 26, provide pipe conforming to ASTM F679, except provide wall thickness as required for SDR 26 and pipe strength of 115 psi.

B. No deflection at joint shall be allowed for pipe sizes 12” or smaller. Pipeline curves shall be accomplished through bending of the pipe within the limits of pipe curvature as shown in the following Table:

Table 2 – Pipe Bend Curvature

PIPE SIZE (IN)	MIN RADIUS (FT)	OFFSET/ 20 FT (IN)	OFFSET/ 14 FT (IN)
4	100	23.9	11.7
6	150	16	7.8
8	200	12	5.9
10	250	9.6	4.7
12	300	8	3.9

C. For pipes 15” – 36” maximum angular deflection at joint shall be 1.5 degrees or as approved by pipe manufacturer.

D. For sewers up to 12 inches in diameter crossing over water lines, or crossing under water lines with less than 2 feet separation, provide minimum 150 psi pressure-rated pipe conforming to ASTM D2241 with suitable PVC adapter couplings. Pipes shall be encased in concrete, unless noted otherwise.

2.05 GASKETS

A. For pressure pipe, integral gasket bell and spigot “push-on” joint shall conform to ASTM D3139.

B. For gravity pipe, locked-in gaskets joints shall meet ASTM D3212 for joint tightness (22” Hg vacuum and a 25-ft head pressure test)

C. Gaskets shall meet the requirements of ASTM F477.

D. Flat Face Mating Flange: Full faces 1/8-inch-thick ethylene propylene (EPR) rubber.

E. Raised Face Mating Flange: Flat ring 1/8-inch ethylene propylene (EDR) rubber, with filler gasket between OD of raised face and flange OD to protect flange from bolting moment.

F. Lubricant for rubber-gasketed joints: Water soluble, non-toxic, non-objectionable in taste and odor imparted to fluid, non-supporting of bacteria growth, having no deteriorating effect on PVC or rubber gaskets.

G. Manufacturer shall test sample from each batch conforming to requirements ASTM D2444.

2.06 JOINTS AND FITTINGS:

A. Flanged or bolted mechanical joint or push-on joint ductile or gray iron fittings shall conform to ANSI/AWWA C110/A21.10 or C153/A21.53 and ANSI/ AWWA C111/A21.11. All iron fittings shall be cement mortar lined and tar (seal) coated in accordance with ANSI/AWWA C104/A21.4

B. PVC pipe fittings shall be full-bodied, either injection molded or factory fabricated, and shall meet AWWA C907. Saddle-type tee or wye fittings are not acceptable, unless noted otherwise.

C. Fusible PVC pipe lengths shall be assembled in the field with butt-fused joints. The Contractor shall follow the pipe supplier’s written guidelines for this procedure.

D. Solvent Weld PVC pipes shall utilize solvent weld on bell end, plain end, and socket type fittings and shall meet ASTM D2564.

E. Provide approved restrained joint fittings as required and as shown on plans. Restraining devices shall meet or exceed the requirements of ASTM F1674 or UNI-Bell B-13 "Recommended Standard Performance Specification for Joint Restrainers for Use with PVC Pipe."

F. Exterior Protection: Provide polyethylene wrapping of ductile-iron fittings.

2.07 Hydrostatic Test: AWWA C900, AWWA C909, ANSI A21.10 (AWWA C110); at point of manufacture; submit manufacturer's written certification.

PART 3 – EXECUTION

3.01 PROTECTION

A. Store pipe under cover out of direct sunlight and protect from excessive heat or harmful chemicals in accordance with manufacturer's recommendations.

3.02 INSTALLATION

A. Install PVC pipe in accordance with these Specifications, ASTM D2321 for Sewer Pipe, and manufacturer's recommendations.

B. Install PVC water service pipe to clear utility lines and have minimum depth of cover 48” below major streets, unless otherwise required by Drawings.

C. Avoid imposing strains that will overstress or buckle pipe when lowering pipe into trench.

D. Hand shovel pipe bedding under pipe haunches and along sides of pipe barrel and compact to eliminate voids and ensure side support.

F. Allow PVC pipe to cool to ground temperature before backfilling when assembled out of trench to prevent pullout due to thermal contraction.

3.03 PVC RESTRAINED MECHANISM

A. Do not apply lubricant to spline or pipe or coupling spline grooves.

B. Do not use excessive force while inserting the spline through coupling.

C. Insert spline until it is fully seated around circumference of pipe.

D. Field Cutting of Pipe Ends:
   1. Perform by workers certified by manufacturer.
   2. Use a PVC pipe cutter and provide square ends.
   3. Use manufacturer approved power routing and grooving tool to field fabricate required pipe groove.

END OF SECTION

SECTION 33 0561 – CONCRETE MANHOLES

PART 1 – GENERAL

1.01 SUMMARY

A. Section Includes: Manholes for sanitary sewer system assemblies.

1.02 REFERENCES

A. Soils Report: This work shall conform to the requirements of the latest Geotechnical Evaluation.

B. American National Standards Institute (ANSI)

C. AASHTO: American Association of State Highway and Transportation Officials Standard Specification for Highway Bridges

D. American Society for Testing and Materials (ASTM):

A48	Gray Iron Castings
A193	Alloy Steel and Stainless Steel Bolting Materials for High-Temperature Service.
A615	Standard Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement
C14	Concrete Sewer, Storm Drain, and Culvert Pipe.
C387	Packaged, Dry, Combined Materials for Mortar and Concrete.
C478	Precast Reinforced Concrete Manhole Sections.

1.03 SUBMITTALS

A. Submittals shall be furnished in accordance with Section 01 3300 – Submittal Procedures.

B. Shop Drawings:
1. Submit drawing of each manhole with plan and sections showing manhole dimensions and actual installation.
2. Submit testing plan, documentation methods, and proposed schedule.

PART 2 – PRODUCTS

2.01 MANHOLES

A. Manhole Bases: The base of all manholes shall be either cast-in-place concrete or precast concrete, except for manholes housing air and vacuum release valve assemblies.
1. Precast concrete bases shall have the base slab integral with the sidewalls. The base slab shall be 6 inches minimum thickness with No. 4 reinforcement steel bars at 8 inches on centers each way in the center of the slab. The base reinforcement steel shall be tied to the wall steel.
2. Bases for manholes housing air and vacuum release valve assemblies shall consist of a drain gravel base and precast or cast-in-place concrete ring foundation.

B. Precast Manhole Sections: Precast manhole sections conforming to ASTM C478 shall be either 48-inch, 60-inch, 72-inch, or 84-inch internal diameter with 5-inch minimum walls or as otherwise shown for special purposes. The top and bottom of all sections shall be parallel.

C. Eccentric Sections: Eccentric cones shall be provided for all manholes except as otherwise shown on the Drawings. Cones shall have the same wall thickness and reinforcement as the precast manhole section.

D. Manhole Grade Rings:
1. Manhole grade rings for extensions shall be a maximum 6 inches high. Extensions will be limited to 15 inches.

2. Finish grade for solid covers shall be ½-inch below flush in concrete or asphalt concrete paved areas, and 6 inches above finish grade in unpaved areas, except flush where gated covers are specified.
3. Grade rings shall have anchor bolt holes for bolt-down frames and covers.
4. Finish installation in accordance with MAG standard Detail 420-2

E. Factory Testing: Prior to delivery of precast manhole sections, yard tests shall be conducted at the point of manufacture. Precast sections to be tested shall be selected at random from stockpiled material to be supplied for the job. All test specimens shall be mat tested, and shall meet the permeability test requirements of ASTM C14.

F. Joints of Manhole Sections: Tongue-and-groove type sealed with either mortar or preformed plastic joint material.
1. Mortar: Standard premixed mortar conforming to ASTM C387 or proportion 1 part portland cement to 2 parts clean, well-graded sand which will pass a 1/8-inch screen. Admixtures may be used not exceeding the following percentages of weight of cement: Hydrated lime, 10 percent; diatomaceous earth or other inert materials, 5 percent. Consistency of mortar shall be such that it will readily adhere to the manhole section if using the standard tongue-and-groove type joint. Mortar mixed for longer than 30 minutes shall not be used.
2. Preformed Plastic Gaskets: Preformed plastic gaskets may be used in lieu of mortar type joints.
    a. Manufacturers:
        1) Kent-Seal No. 2, Hamilton Kent Manufacturing Company, Box 178, Kent, OH 44240;
        2) Ram-Nek, K. T. Snyder Company, Inc., Central National Bank Building, Houston, TX 77002;
        3) or ENGINEER-approved equal, meeting all requirements of Federal Specification SS-S-00210.

G. Pipe connections to manholes shall be as specified by the pipe manufacturer. Inlet and outlet pipes shall extend through the walls of the structures for a sufficient distance beyond the outside surface to allow for connections, but shall be cut off flush with the wall on the inside surface. For concrete structures, the mortar shall be placed around these pipes so as to form a tight, neat connection.

H. Manhole frames and covers shall be cast iron as detailed on the Drawings and elsewhere in these Specifications and Contract Documents.

1. Use castings for frames, grates, rings, and covers conforming to ASTM A48, Class 35B. Provide locking covers if indicated on Drawings.

2. Use clean castings capable of withstanding application of AASHTO M306 - 40,000-pound proof loading without detrimental permanent deformation.

3. Fabricate castings to conform to shapes, dimensions, and with wording or logos shown on Drawings. Standard dimensions for manhole covers are 32 inches in diameter.

4. Cast iron castings shall be tough, close-grained gray iron, sound, smooth, clean, free from blisters, blowholes, shrinkage, cold shuts, and all defects, and shall conform to ASTM A48, Class 30B. Plane or grind bearing surfaces to ensure flat, true surfaces.

5. Bolt-down covers shall be used on all electrical vaults and where indicated on Drawings.

6. Capscrews and washers shall be Type 316 stainless steel conforming to ASTM A193. Countersink bolt holes in cover so that the top of the capscrews are below the top plane of the cover. Frames for bolt-down covers shall be supplied with four ¾-inch-diameter Type 316 stainless steel anchor bolts, nuts, and washer as detailed on the Drawings.

7. Nominal inside opening of the frame shall be 24 inches, unless noted otherwise. Provide a blind pick hole or lifting lug in the cover. Do not provide lifting rings or vent holes in covers unless specifically required.

2.02 CLEANOUTS

A. Covers shall be true and seat within frame at all points.

B. Cleanout frames and covers shall be Pinkerton Foundry No. A-469 or D&L Supply No. H-8024, or ENGINEER-approved equal.

PART 3 – EXECUTION

3.01 INSTALLATION

A. Manholes:
1. Concrete Base: Vibrate to densify poured in-place concrete and screed so that the first precast manhole section to be placed has a level, uniform bearing for the full circumference.
2. Deposit sufficient mortar on base to assure watertight seal between base and manhole wall or place the first precast section of manhole in concrete base before concrete has set. First section shall be properly located and plumb.
3. Carefully inspect precast manhole sections to be joined. Sections with chips or cracks in the tongue shall not be used. Clean ends of sections before assembly. Align manhole steps vertically.
4. Joints with preformed plastic gaskets shall be installed in strict conformance with the manufacturer's recommendations. Only pipe primer furnished by the gasket manufacturer will be approved.
5. For mortar joints, thoroughly wet joint with water prior to placing mortar. Place mortar on groove of lower section. Set next section in place. Fill joint completely with mortar of the proper consistency. Trowel interior and exterior surfaces smooth on standard tongue-and-groove joints. Prevent mortar from drying out, and cure by applying an approved curing compound or comparable approved method. Chip out and replace all cracked or defective mortar.

B. Construct manhole inverts with smooth transitions to ensure an unobstructed flow through manhole. Remove all sharp edges or rough sections which tend to obstruct flow. Do not lay pipe through manholes. Trowel all mortar surfaces smooth.

C. Install frames and covers. Frames shall be set in a bed of mortar with the mortar carried over the flange of the ring. Install bolt-down manholes as shown or as recommended by manufacturer. Provide a minimum of one 6-inch-high grade ring under the frame and cover. Extend anchor bolts through the grade ring to the frame. Hook the anchor bolt under the grade ring.

D. Manholes shall be tested as required by these Specifications and Contract Documents.

3.02 CLEANOUTS AND VAULTS

A. Construct in accordance with details as indicated on the Drawings.

3.03 CLEANING

A. Construction debris and other foreign matter shall be removed to the satisfaction of the ENGINEER.

B. Install cover drain pipe to minimum 12” x 12” x 12” drain rock approximately 10 feet from manhole on down slope.

C. Install top of manholes at 6 inches above finish grade or surface. Install surveyor markings to establish finish grade.

END OF SECTION

SECTION 40 0500.13 – COMMON WORK RESULTS FOR PROCESS PIPING

PART 1 – GENERAL

1.01 THE REQUIREMENT

A. Provide all piping systems indicated, complete and operable, in accordance with these Specifications and Contract Documents.

B. The mechanical drawings define the general layout, configuration, routing, method of support, pipe size and pipe type. The mechanical drawings are not pipe construction or fabrication drawings. Details for construction shall be developed as necessary to construct all mechanical piping systems, to accommodate the specific equipment provided, and to provide all spools, spacers, adapters, and connectors for a complete and functional system.

C. American Iron and Steel (AIS) requirement applies to this Section. All iron and steel products used in this project must be produced in the United States.

1.02 SUBMITTALS

A. Submittals shall be furnished in accordance with Section 01 3300 – Submittal Procedures.

B. Shop Drawings shall contain the following information:

1. Drawings: Layout drawings including all necessary dimensions, details, pipe joints, fittings, specials, bolts and nuts, gaskets, valves, appurtenances, anchors, guides, and material lists. Fabrication drawings shall indicate all spool pieces, spacers, adapters, connectors, fittings and supports to accommodate the equipment and valves in a complete and functional system.

C. Certifications: All necessary certificates, test reports, and affidavits of compliance shall be obtained.

PART 2 – PRODUCTS

2.01 GENERAL

A. Extent of Work: Pipes, fittings and appurtenances shall be provided in accordance with the requirements of these Specifications and as indicated.

B. Pipe Supports: Pipes shall be adequately supported, restrained, and anchored in accordance with these Specifications, and as indicated.

C. Lining: Application, thickness and curing of pipe lining shall be in accordance with these Specifications, unless otherwise indicated.

D. Coating: Application, thickness and curing of pipe coating shall be in accordance with these Specifications, unless otherwise indicated. Pipes above ground or in structures shall be field-coated in accordance these Specifications.

E. Pressure Rating: Piping systems shall be designed for the maximum expected pressure as defined in accordance with these Specifications, or as indicated on the Piping Schedule.

F. Inspection: Pipe shall be subject to inspection at the place of manufacture. During the manufacture of the pipe, the ENGINEER shall be given access to all areas where manufacturing is in progress and shall be permitted to make all inspections necessary to confirm compliance with requirements.

G. Tests: Except where otherwise indicated, materials used in the manufacture of the pipe shall be tested in accordance with the applicable specifications and standards. Welds shall be tested as indicated.

H. Welding Requirements: Welding procedures used to fabricate pipe shall be prequalified under the provisions of ANSI/AWS D1.1 - Structural Welding Code. Welding procedures shall be reviewed for longitudinal and girth or spiral welds for pipe cylinders, spigot, and bell ring attachments, reinforcing plates and ring flange welds, and plates for lug connections.

I. Welder Qualifications: Welding shall be done by skilled welders and welding operators who have had adequate experience in the methods and materials to be used. Welders shall be qualified under the provisions of ANSI/AWS D1.1 by an independent local, approved testing agency not more than 6 months prior to commencing work on the pipeline. Machines and electrodes similar to those used in the WORK shall be used in qualification tests. Qualification testing of welders and materials used during testing are part of the WORK.

2.02 PIPE FLANGES

A. General: Flanges shall have flat faces and shall be attached with bolt holes straddling the vertical axis of the pipe unless otherwise indicated. Attachment of the flanges to the pipe shall conform to the applicable requirements of ANSI/AWWA C207. Flange faces shall be perpendicular to the axis of the adjoining pipe. Flanges for miscellaneous small pipes shall be in accordance with the standards indicated for these pipes.

B. Pressure Ratings:
   1. 150 psi or less: Flanges shall conform to either ANSI/AWWA C207 - Steel Pipe Flanges for Waterworks Service--Sizes 4-inch. Through 144-inch, Class D, or ANSI/ASME B16.5 - Pipe Flanges and Flanged Fittings, 150-lb class.
   2. 150 psi to 275 psi: Flanges shall conform to either ANSI/AWWA C207 Class E or Class F, or ANSI/ASME B16.5 150-lb class.
   3. 275 psi to 700 psi: Flanges shall conform to ANSI/ASME B16.5, 300-lb class.
   4. Selection based on test pressure: AWWA flanges shall not be exposed to test pressures greater than 125 percent of rated capacity. For higher test pressures, the next higher rated AWWA flange or an ANSI-rated flange shall be selected.

C. Blind Flanges: Blind flanges shall be in accordance with ANSI/AWWA C207, or as indicated for miscellaneous small pipes.

D. Flange Coating: Machined faces of metal blind flanges and pipe flanges shall be coated with a temporary rust-inhibitive coating to protect the metal until the installation is completed.

E. Flange Bolts: Bolts and nuts shall conform to these Specifications. Bolts and nuts shall be installed with anti-seize per Loctite, or ENGINEER-approved equal (or thread locker to be confirmed with WWTP Operations). Studs and bolts shall extend through the nuts a minimum of ¼-inch. All-thread studs shall be used on all valve flange connections, where space restrictions preclude the use of regular bolts.

F. Insulating Flanges: Insulated flanges shall have bolt holes ¼-inch diameter greater than the bolt diameter.

G. Insulating Flange Sets: Insulating flange sets shall be provided where indicated or as needed. Each insulating flange set shall consist of an insulating gasket, insulating sleeves and washers and a steel washer. Insulating sleeves and washers shall be one piece when flange bolt diameter is 1½-inch or smaller and shall be made of acetal resin. For bolt diameters larger than 1½-inch, insulating sleeves and washers shall be 2-piece and shall be made of polyethylene or phenolic material. Steel washers shall be in

accordance with ASTM A325 - Structural Bolts, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength. Insulating gaskets shall be full-face.

H. Flange Gaskets:
   1. Gaskets for flanged joints used in general water and wastewater service shall be full-faced type, with material and thickness in accordance with ANSI/AWWA C207. Blind flanges shall have gaskets covering the entire inside face of the blind flange and shall be cemented to the blind flange. Ring gaskets shall not be permitted, unless otherwise indicated.
   2. Gaskets for flanged joints used in chemicals, air, solvents, hydrocarbons, steam, chlorine, and other fluids shall be made of materials compatible with the service, pressure, and temperature.

2.03 THREADED INSULATING CONNECTIONS

A. General: Threaded insulating bushings, unions, or couplings, as appropriate, shall be used for joining threaded pipes of dissimilar metals and for piping systems where corrosion control and cathodic protection are involved.

B. Materials: Threaded insulating connections shall be of nylon, Teflon, polycarbonate, polyethylene, or other non-conductive materials, and shall have ratings and properties to suit the service and loading conditions.

2.04 MECHANICAL-TYPE COUPLINGS (GROOVED OR BANDED PIPE)

A. General: Cast mechanical-type couplings shall be provided where indicated. The couplings shall conform to the requirements of ANSI/AWWA C606 - Grooved and Shouldered Joints. Bolts and nuts shall conform to the requirements of these Specifications. Gaskets for mechanical-type couplings shall be compatible with the piping service and fluid utilized, in accordance with the coupling manufacturer's recommendations. The wall thickness of grooved piping shall conform with the coupling manufacturer's recommendations to suit the highest expected pressure. To avoid stress on equipment, equipment connections with mechanical-type couplings shall have rigid-grooved couplings or flexible type coupling with harness in sizes where rigid couplings are not available, unless thrust restraint is provided by other means. Mechanical-type couplings shall be bonded. The Subcontractor shall have the coupling manufacturer's service representative verify the correct choice and application of couplings and gaskets, and the workmanship, to assure a correct installation. To assure uniform and compatible piping components, all grooved fittings, couplings, and valves shall be from the same manufacturer.

2.05 SLEEVE-TYPE COUPLINGS

A. Construction: Sleeve-type couplings shall be provided where indicated, in accordance with ANSI/AWWA C219 - Standard for Bolted Sleeve-Type Couplings for Plain-End Pipe. Couplings shall be steel with steel bolts, without pipe stop. Couplings shall be of sizes to fit the pipe and fittings indicated. The middle ring shall be not less than ¼-inch thick or at least the same wall thickness as the pipe to which the coupling is connected. If the strength of the middle ring material is less than the strength of the pipe material, the thickness of the middle ring shall be increased to have the same strength as the pipe. The coupling shall be either 5 or 7 inches long for sizes up to and including 30 inches and 10 inches long for sizes greater than 30 inches, for standard steel couplings, and 16 inches long for long-sleeve couplings. The followers shall be single-piece contoured mill sections welded and cold-expanded as required for the middle rings, and of sufficient strength to accommodate the number of bolts necessary to obtain adequate gasket pressures without excessive rolling. The shape of the follower shall be of such design as to provide positive confinement of the gasket. Bolts and nuts shall conform to

the requirements of these Specifications. Buried sleeve-type couplings shall be epoxy-coated at the factory as indicated.

B. Pipe Preparation: Where indicated, the ends of the pipe shall be prepared for flexible steel couplings. Plain ends for use with couplings shall be smooth and round for a distance of 12 inches from the ends of the pipe, with outside diameter not more than 1/64-inch smaller than the nominal outside diameter of the pipe. The middle ring shall be tested by cold-expanding a minimum of one percent beyond the yield point, to proof-test the weld to the strength of the parent metal. The weld of the middle ring shall be subjected to air test for porosity.

C. Gaskets:
   1. Gaskets for sleeve-type couplings shall be rubber-compound material that will not deteriorate from age or exposure to air under normal storage or use conditions. Gaskets for wastewater and sewerage applications shall be Buna "N," Grade 60, or ENGINEER-approved equivalent suitable elastomer. The rubber in the gasket shall meet the following specifications:
      a. Color: Jet Black
      b. Surface: Non-blooming
      c. Durometer Hardness: 74 plus and minus 5
      d. Tensile Strength: 1000 psi Minimum
      e. Elongation: 175 percent Minimum
   2. The gaskets shall be immune to attack by impurities normally found in water or wastewater. All gaskets shall meet the requirements of ASTM D2000 - Classification System for Rubber Products in Automotive Applications, AA709Z, meeting Suffix B13 Grade 3, except as noted above. Where sleeve couplings are used in water containing chloramine or other fluids, which attack rubber materials, gasket material shall be compatible with the piping service and fluid utilized.

D. Insulating Couplings: Where insulating couplings are required, both ends of the coupling shall have a wedge-shaped gasket which assembles over a rubber sleeve of an insulating compound in order to obtain insulation of all coupling metal parts from the pipe.

E. Restrained Joints: Sleeve-type couplings on pressure lines shall be harnessed unless thrust restraint is provided by other means. Harnesses shall be designed by the pipe manufacturer in accordance with AWWA Manual M11, or as indicated. Harness sets shall be designed for the maximum test pressure of the pipe in which they are installed. Where harness sets are installed near the suction and discharge of the pump, harness bolts shall have zero elongation to prevent misalignment of the pump imparted by the thrust within the piping system.

2.06 DISMANTLING JOINTS

A. General: Dismantling joints shall be provided where indicated, and provide up to 5” of longitudinal adjustment and up to 2 degrees of misalignment in flanged piping systems. The flange spool shall meet the requirements of AWWA Class D Ring Flange, compatible with ANSI Class 125 and 150 bolt circles. The end and body ring shall meet the requirements of ASTM A536 ductile iron meeting or exceeding Grade 65-45-12 for 3” to 12” sizes and ASTM A36 Carbon Steel with AWWA C207 Class D flanges for 14” to 72” sizes. Dismantling joints shall be provided with gaskets compounded for water and sewer service in accordance with ASTM D2000. Dismantling joints shall have a fusion bonded epoxy coating. Bolts and nuts (including tie-rods) shall conform to these Specifications. Dismantling joints shall be per Romac Industries, or ENGINEER-approved equal.

2.07 EXPANSION JOINTS

A. Piping subject to expansion and contraction shall be provided with sufficient means to compensate for such movement without exertion of undue forces to equipment or structures. This may be accomplished with expansion loops, bellow-type expansion joints or sliding-type expansion joints. Expansion joints shall be of stainless steel, monel, rubber, or other materials best suited for each individual service.

2.08 PIPE THREADS

A. Pipe threads shall be in accordance with ANSI/ASME B1.20.1 - Pipe Threads, General Purpose (inch), and be made up with Teflon tape or chemical sealant unless otherwise indicated.

2.09 PIPE INSULATION

A. Pipe thermal insulation for exterior freeze protection shall be self-sealing, flexible, tubular polyolefin/ polyethylene foam insulation. The insulation shall have a low thermal conductivity (not to exceed 0.04 W/mK) and shall have a service temperature range between -330°F and 120°F. Minimum thickness shall be 1 inch. Insulation shall be acceptable for use with heat tracing/ heat tape.

B. Where called out in the Contract Documents, heat tape shall be provided for freeze protection. Heat tape shall be wrap-type cable with built-in thermostat for automatic heat control and energy efficiency. It shall be used in conjunction with foam insulation. The low wattage design shall utilize a 120-volt power with outlet plug. Heat tape shall be manufactured by Wrap-On Co., Inc., or ENGINEER-approved equal.

C. Where called out in the Contract Documents, Pipe insulation for personnel protection against high temperature shall be provided. Protective insulation shall be fiber glass bonded with a thermosetting resin with a jacket designed to protect personnel again accidental contact with hot pipes. The insulation shall be designed to be used on systems operating up to 1000°F. Minimum thickness shall be 1 inch.

2.10 GENERAL

A. Pipes, fittings, and appurtenances shall be installed in accordance with these Specifications.

B. Lined Piping Systems: The lining manufacturer shall take full responsibility for the complete, final product and its application. Pipe ends and joints of lined pipes at screwed flanges shall be epoxy-coated to assure continuous protection.

C. Core Drilling: Where core drilling is required for pipes passing through existing concrete, core drilling locations shall be determined by radiograph of concrete construction to avoid damage to embedded raceways and reinforcing bars.

D. Cleanup: After completion of the WORK, cuttings, joining and wrapping materials, and other scattered debris shall be removed from the Site. The entire piping system shall be handed over in a clean and functional condition.

PART 3 – EXECUTION

3.01 INSTALLATION OF PIPE

A. Piping shall be installed in accordance with manufacturers' recommendation and these Specifications.

END OF SECTION

SECTION 40 0519 – DUCTILE IRON PIPE

PART 1 – GENERAL

1.01 DESCRIPTION

A. Furnish and install all ductile iron pipe and fittings in accordance with this section.

1.02 REFERENCES

A. Standards of the following agencies are referenced herein: American National Standards Institute (ANSI), American Society for Testing and Materials (ASTM), American Water Works Association (AWWA), Ductile Iron Pipe Research Association (DIPRA).

B. Referenced standards shall be the latest revision.

In case of conflict with referenced standards, the provisions of this section shall prevail.

1.03 SUBMITTALS

A. In accordance with Section 01 3300 – Submittal Procedures.

B. Catalog data sheets naming each product to be used identified by manufacturer and type number and additional documentation as required to demonstrate full compliance with this specification.

PART 2 – MATERIALS

2.01 DUCTILE IRON PIPE

A. Pipe shall conform to the following standards as applicable:
1. AWWA C104: Cement-Mortar Lining for Ductile-Iron Pipe and Fittings for Water.
2. AWWA C111: Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings
3. AWWA C115: Flanges Ductile-Iron Pipe with Threaded Flanges
4. AWWA C150: Thickness Design of Ductile-Iron Pipe
5. AWWA C151: Ductile-Iron Pipe, Centrifugally Cast, for Water of Other Liquids
6. AWWA C606: Grooved and Shouldered Joints

B. Pipe wall thickness for push-on joint and mechanical joint pipe shall be Pressure Class 350 psi minimum, or as indicated in the Contract Documents.

C. Unless otherwise noted or required, all pipe shall have a cement mortar lining with asphaltic seal coat.

Nominal Pipe Diameter (inches)	Minimum Lining Thickness (inches)
3 - 12	$^{1}/_{8}$
14 - 24	$^{3}/_{16}$
30 - 54	$^{1}/_{4}$

2.02 FITTINGS AND SPECIALS

A. Fittings and specials shall be ductile iron and shall conform to the following standards as applicable:
1. AWWA C104: Cement-Mortar Lining for Ductile-Iron Pipe and Fittings for Water.
2. AWWA C110: Ductile-Iron and Gray Iron Fittings, 3 inches through 48 inches, for Water and Other Liquids.
3. AWWA C111: Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings.
4. AWWA C153: Ductile-Iron Compact Fittings, 3 inches through 24 inches and 54 inches through 64 inches for Water Service.

5. AWWA C606: Grooved and Shouldered Joints.

B. Unless otherwise noted or required, either standard or compact fittings may be used.

C. Unless otherwise noted, all fittings shall have a cement mortar lining with asphaltic seal coat.

D. Grooved and flanged fittings shall have center to end dimensions in accordance with AWWA C111, wall thickness in accordance with AWWA C153, and shall be Class 350 minimum, or as indicated in the Contract Documents.

2.03 GROOVED JOINT COUPLINGS

A. In accordance with ASSA C606, except as modified herein.

B. Coupling body shall be ductile iron, ASTM A536

C. All bolts and nuts shall be 316 stainless steel conforming to ASTM A193, Grade B8M, for bolts and ASTM A194, Grade 8M, for nuts.

2.04 TYPE OF JOINTS

A. Buried joints shall be push-on, mechanical joint, or flexible grooved joint unless otherwise shown or required for installation.

B. Exposed joints shall be flanged or rigid grooved unless otherwise shown or required for the installation.

2.05 RESTRAINED PUSH-ON JOINTS

A. Where specified, called for on the drawings, or otherwise required for thrust restraint, push-on joints shall be Flex-Ring as manufactured by American Ductile Iron Pipe, TR Flex as manufactured by US Pipe, or ENGINEER-approved equal. Restrained joint shall provide for joint deflection after assembly.

2.06 RESTRAINED MECHANICAL JOINTS

A. Where specified, called for on the drawings or otherwise required fro thrust restraint, mechanical joints shall be made using retainer glands with set screws or clamping lugs. Retainer glands shall be as manufactured by EBAA Iron; Tyler Pipe, or ENGINEER-approved equal.

2.07 FLANGE GASKETS

A. Full face or ring, except that ring gaskets shall be used for sizes 14-inch and greater. Gaskets shall be 1/8-inch thick synthetic rubber for test pressures up to 250 psi. For test pressures greater than 250 psi, provide suitable gasket as recommended by manufacturer.

2.08 FASTENERS EXCEPT GROOVED COUPLINGS

A. 316 stainless steel conforming to ASTM A193, Grade B8M, for bolts and ASTM A194, Grade 8M, for nuts. Bolts and nuts shall be installed with anti-seize per Loctite, or ENGINEER-approved equal (or thread locker to be confirmed with WWTP Operations).

B. Washers, where required, shall be of the same material as the nuts.

2.09 POLYETHYLENE ENCASEMENT

A. Buried pipe and fittings shall be protected by polyethylene encasement in accordance with AWWA C105.

2.10 GLASS LINING

A. Where specified or called for on the drawings, ductile iron pipe shall be glass-lined.

B. Glass lining shall consist of vitreous and inorganic material applied to the internal surfaces of pipe and fittings that have been prepared by blasting. The items shall be exposed to an appropriate maturing temperature (above 1400°F), at which point the vitreous and inorganic material fuses to the base metal, forming an integral molecular bond with the base metal. Subsequent coatings will be processed in a similar manner, forcing an integral molecular bond with the base coast. The entire coating shall be a minimum of 10 mils thick.

C. Lining shall have a hardness of 5 to 6 on the Mohs scale and a density of 2.5-3.0 g/cm³ measured by ASTM D792. The glass lining shall be capable of withstanding a thermal shock of 350°F without crazing, blistering, or spalling. It shall be resistant to corrosion between pH 3 and pH 10 at 125°F.

D. There shall be no visible loss of surface gloss on the lining after immersing a production run sample in an 8% sulfuric acid solution at 125°F for 15 minutes. When tested according to ASTM C283, it shall show a weight loss of not more than 3 mg/in².

E. Provide continuous coverage as tested by a low voltage wet sponge holiday detector. Only isolated voids due to casting anomalies and representing less than 0.1% of the total glassed surface shall be permitted.

F. Glass lining shall be Ferrock MEH-32 as provided by Fast Fabricators/Water Works Manufacturing, Vitco, or ENGINEER-approved equal.

2.11 Direct Tap

A. Ductile iron pipe shall have a minimum wall thickness allowed by ANSI/AWWA C151/A21.51.

B. The maximum direct tap sizes for 3 though 24-inch ductile iron pipe shall be per the following table.

Sizes (in)	Pressure Class				
	150	200	250	300	350
	Maximum Direct Tap Size (in)				
3	-	-	-	-	3/4
4	-	-	-	-	3/4
6	-	-	-	-	1
8	-	-	-	-	1
10	-	-	-	-	1
12	-	-	-	-	1 ¼
14	-	-	1 ¼	1 ½	1 ½
16	-	-	1 ½	2	2
18	-	-	2	2	2
20	-	-	2	2	2
24	-	2	2	2	2

C. All classes of ductile iron pipe 24 inches or larger in diameter can be direct tapped for 2-inch corporation stop.

PART 3 – EXECUTION

3.01 INSTALLATION OF PIPE

A. Handling and Storage: All pipe, fittings, etc., shall be carefully handled and protected against damage, impact shocks, and free fall. All pipe handling equipment shall be acceptable to the ENGINEER. Pipe shall not be placed directly on rough ground but shall be supported in a manner that will protect the pipe against injury whenever stored at the trench site or elsewhere. No pipe shall be installed where the lining or coating show defects that may be harmful as determined by the ENGINEER. Such damaged lining or coating shall be repaired, or a new undamaged pipe shall be furnished and installed.

B. All pipe that is damaged prior to Substantial Completion shall be repaired or replaced.

C. Inspect each pipe and fitting prior to installation to ensure that there are no damaged portions of the pipe.

D. Before placement of pipe in the trench, each pipe or fitting shall be thoroughly cleaned of any foreign substance, which may have collected thereon, and shall be kept clean at all times thereafter. For this purpose, the openings of all pipes and fittings in the trench shall be closed during any interruption to the WORK.

E. Pipe Laying: The pipe shall be installed in accordance with ANSI/AWWA C600.

F. Pipe shall be laid directly on the bedding material. No blocking will be permitted, and the bedding shall be such that it forms a continuous, solid bearing for the full length of the pipe. Excavations shall be made as needed to facilitate removal of handling devices after the pipe is laid. Bell holes shall be formed at the ends of the pipe to prevent point loading at the bells or couplings. Excavation shall be made as needed outside the normal trench section at field joints to permit adequate access to the joints for field connection operations and for application of coating on field joints.

G. Each section of pipes 24 inches in diameter and larger shall be laid in the order and position shown on the laying schedule. In laying pipe, it shall be laid to the setline and grade, within approximately one inch plus or minus. On grades of zero slopes, the intent is to lay to grade.

H. Where necessary to raise or lower the pipe due to unforeseen obstructions or other causes, the ENGINEER may change the alignment and/or the grades. Such change shall be made by the deflection of joints, by the use of bevel adapters, or by the use of additional fittings. However, in no case shall the deflection in the joint exceed the maximum deflection recommended by the pipe manufacturer. No joint shall be misfit any amount that will be detrimental to the strength and water tightness of the finished joint.

I. Except for short runs that may be permitted by the ENGINEER, pipes shall be laid uphill on grades exceeding 10%. Pipe that is laid on a downhill grade shall be blocked and held in place until sufficient support is furnished by the following pipe to prevent movement. All bends shall be properly installed as shown.

J. Shallow buried pipes and pipes underneath structures shall be concrete encased where noted in the Contract Documents.

K. Cold Weather Protection: No pipe shall be installed upon a foundation into which frost has penetrated or at any time that there is a danger of the formation of ice or penetration of frost at the bottom of the excavation. No pipe shall be laid unless it can be established that the trench will be backfilled before the formation of ice and frost occurs.

L. Pipe and Specials Protection: The openings of all pipe and specials shall be protected with suitable bulkheads to prevent unauthorized access by persons, animals, water, or any undesirable substance. At all times, means shall be provided to prevent the pipe from floating.

M. Pipe Cleanup: As pipe laying progresses, the pipe interior shall be kept free of all debris. Completely clean the interior of the pipe of all sand, dirt, mortar splatter and any other debris following completion of pipe laying, pointing of joints and any necessary interior repairs prior to testing and disinfecting the completed pipeline.

3.02 RUBBER GASKETED JOINTS

A. Rubber Gasketed Joints: Immediately before jointing pipe, the bell end of the pipe shall be thoroughly cleaned, and a clean rubber gasket lubricated with an approved vegetable-based lubricant shall be placed in the bell groove. The spigot end of the pipe shall be carefully cleaned and lubricated with a vegetable-based lubricant. The spigot end of the pipe section shall then be inserted into the bell of the previously laid joint and telescoped into its proper position. Tilting of the pipe to insert the spigot into the bell will not be permitted.

3.03 INSTALLATION OF PIPE APPURTENANCES

A. Protection of Appurtenances: Where the joining pipe is tape-coated, buried appurtenances shall be coated with cold-applied tape in accordance with ANSI/AWWA C209, Type II. Where pipe is encased in polyethylene sleeves, buried appurtenances shall also be encased in polyethylene.

B. Installation of Valves: All valves shall be handled in a manner to prevent any injury or damage to any part of the valve. All joints shall be thoroughly cleaned and prepared prior to installation. Adjust all stem packing and operate each valve prior to installation to insure proper operation.

C. All valves shall be installed so that the valve stems are plumb and, in the location, shown.

END OF SECTION

SECTION 40 0551 – COMMON WORK RESULTS FOR PROCESS VALVES

PART 1 – GENERAL

1.01 THE REQUIREMENT

A. Furnish and install all valves, actuators, and appurtenances, complete and operable, in accordance with the Contract Documents. These specifications shall not apply to valves, actuators, and appurtenances to be provided by process equipment vendors as part of process systems or equipment already approved by the ENGINEER.

B. The provisions of this Section shall apply to all valves and valve actuators except where otherwise indicated. Valves and actuators in particular locations may require a combination of units, sensors, limit switches, and controls indicated in other Sections of the Specifications.

C. American Iron and Steel (AIS) requirement applies to this Section. All iron and steel products used in this project must be produced in the United States.

D. Where a valve is to be supported by means other than the piping to which it is attached, the CONTRACTOR shall obtain from the valve manufacturer a design for support and foundation that satisfies the criteria in the applicable Sections of Division 46 – Water and Wastewater Equipment. The design, including drawings and calculations sealed by an engineer, shall be submitted with the Shop Drawings. When the design is approved, the support shall be provided.

E. Unit Responsibility: A single manufacturer shall be made responsible for coordination of design, assembly, testing, and furnishing of each valve; however, the CONTRACTOR shall be responsible for compliance with the requirements of each valve section. Unless indicated otherwise, the responsible manufacturer shall be the manufacturer of the valve.

F. Single Manufacturer: Where two or more valves of the same type and size are required, the valves shall be furnished by the same manufacturer.

1.02 SUBMITTALS

A. General: Submittals shall be furnished in accordance with Section 01 3300 – Submittal Procedures.

B. Shop Drawings: Shop Drawings shall contain the following information:
   1. Valve name, size, Cv factor, pressure rating and identification number (if any).
   2. Complete information on valve actuator, including size, Manufacturer, model number, limit switches, and mounting.
   3. Cavitation limits for all control valves.
   4. Assembly drawings showing part nomenclature, materials, dimensions, weights, and relationships of valve handles, handwheels, position indicators, limit switches, integral control systems, needle valves, and control systems.

C. Technical Manual: The Technical Manual shall contain the required information for each valve.

D. Spare Parts List: A Spare Parts List shall contain the required information for each valve assembly, where indicated.

1.03 QUALITY ASSURANCE

A. Valve manufacturer and model shall be as described in the Drawings or ENGINEER-approved equal.

1.04 SPARE PARTS

A. The CONTRACTOR shall furnish the required spare parts suitably packaged and labeled with the valve name, location, and identification number. The CONTRACTOR shall also furnish the name, address, and telephone number of the nearest distributor for the spare parts of each valve. Spare parts are intended for use by the OWNER after expiration of the correction of defects period.

PART 2 – PRODUCTS

2.01 PRODUCTS

A. General: Valves and gates shall be new and of current manufacture. Shut-off valves 6 inches and larger shall have actuators with position indicators. Buried valves shall be provided with valve boxes and covers containing position indicators and valve extensions. Manual shut-off valves mounted higher than 7 feet above working level shall be provided with chain actuators. Valves with no clear way to determine position shall be provided with position indicators. Stem extensions shall be provided on valves where operation of the valve cannot be easily accomplished from ground level.

B. Valve Actuators: Unless otherwise indicated, valve actuators shall be in accordance with these Specifications.

C. Valve Labeling: A label shall be provided on all shut-off valves and control valves except for hose bibs. The label shall be of 1/16-inch plastic or steel, minimum 2 inches by 4 inches in size and shall by permanently attached to the valve or on the wall adjacent to the valve as directed by the ENGINEER.

D. Valve Testing: As a minimum, unless otherwise indicated or recommended by the ENGINEER, valves 3 inches in diameter and smaller shall be tested in accordance with manufacturer's standard and 4 inches in diameter and larger shall be factory tested as follows:
   1. Hydrostatic Testing: Valve bodies shall be subjected to internal hydrostatic pressure equivalent to twice the water rated pressure of the valve. Metallic valves rating pressures shall be at 100°F and plastic valves shall be 73°F, or at higher temperature according to type of material. During the hydrostatic test, there shall be no leakage through the valve body, end joints, or shaft seals, nor shall any part of the valve be permanently deformed. The duration shall be sufficient time to allow visual examination for leakage. Test duration shall be at least 10 minutes.
   2. Seat Testing: Valves shall be tested for leaks in the closed position with the pressure differential across the seat equal to the water rated pressure of the valve. The duration of test shall be sufficient time to allow visual examination for leakage. Test duration shall be at least 10 minutes. Leakage past the closed valve shall not exceed 1 fluid ounce per hour per inch diameter for metal seated valves and drop-tight for resilient seated valves.
   3. Performance Testing: All valves shall be shop operated from fully closed to fully open position and reverse under no-flow conditions in order to demonstrate the valve assembly operates properly.

E. Valve Marking: Valve bodies shall be permanently marked in accordance with MSS SP25 - Standard Marking Systems for Valves, Fittings, Flanges, and Unions.

2.02 MATERIALS

A. General: Materials shall be suitable for the intended application. Materials not indicated shall be high-grade standard commercial quality, free from defects and imperfections that might affect the serviceability of the product for the purpose for which it is intended. Unless otherwise indicated, valve and actuator bodies shall conform to the following requirements:
   1. Cast Iron: Close-grained gray cast iron, conforming to ASTM A48 - Gray Iron Castings, Class 30, or to ASTM A126 - Gray Iron Castings for Valves, Flanges and Pipe Fittings.
   2. Ductile Iron: ASTM A536 - Ductile Iron Castings, or to ASTM A395 - Ferritic Ductile Iron Pressure-Retaining Castings for Use at Elevated Temperatures.
   3. Steel: ASTM A216 - Steel Castings, Carbon Suitable for Fusion Welding for High-Temperature Service, or to ASTM A515 - Pressure Vessel Plates, Carbon Steel, for Intermediate- and Higher-Temperature Service.
   4. Bronze: ASTM B62 - Composition Bronze or Ounce Metal Castings, and valve stems not subject to dezincification shall conform to ASTM B584 - Copper Alloy Sand Castings for General Applications.
   5. Stainless Steel: Stainless steel valve and operator bodies and trim shall conform to ASTM A351 - Steel Castings, Austenitic, for High-Temperature Service, Grade CF8M, or shall be Type 304 or 316 stainless steel.
   6. PVC: Poly Vinyl Chloride materials for valve body, flanges, and cover shall conform to Cell Classification 12454.
   7. CPVC: Chlorinated Poly Vinyl Chloride materials for valve body, flanges, and cover shall conform to Cell Classification 23447.
   8. NSF Standard 14 and 61: All materials shall be listed for use in contact with potable water, where applicable.

B. Bodies: Valve bodies shall be cast, molded (in the case of plastic valves), forged, or welded of the materials indicated, with smooth interior passages. Wall thicknesses shall be uniform in agreement with the applicable standards for each type of valve, without casting defects, pinholes, or other defects that could weaken the body. Welds on welded bodies shall be done by certified welders and shall be ground smooth. Valve ends shall be as indicated, and be rated for the maximum temperature and pressure to which the valve will be subjected.

C. Bonnets: Valve bonnets shall be clamped, screwed, or flanged to the body and shall be of the same material, temperature, and pressure rating as the body. The bonnets shall have provision for the stem seal with the necessary glands, packing nuts, or yokes. Below grade valves with above grade worm gear drives/handwheels or electric actuators shall include extended bonnets for mating up to the worm gear drives/handwheel or electric actuators.

D. Stems: Valve stems shall be of the materials indicated, or, if not indicated, of the best commercial material for the specific service, with variable stem packing, O-rings, Chevron V-type packing, or other suitable seal. Where subject to dezincification, bronze valve stems shall conform to ASTM B62, containing not more than 5 percent of zinc or more than 2 percent of aluminum, with a minimum tensile strength of 30,000 psi, a minimum yield strength of 14,000 psi, and an elongation of at least 10 percent in 2 inches. Where dezincification is not a problem, bronze conforming to ASTM B584 may be used, except that zinc content shall not exceed 16 percent.

E. Stem Guides: Stem guides shall be provided, spaced 10-feet on centers unless the manufacturer can demonstrate by calculation that a different spacing is acceptable. Submerged stem guides shall be 304 stainless steel.

F. Internal Parts: Internal parts and valve trim shall be as indicated for each individual valve. Where not indicated, valve trim shall be of Type 316 stainless steel or other best suited material.

G. Nuts and Bolts: Nuts and bolts on valve flanges and supports shall be in accordance with these Specifications.

H. Coatings: Valve coatings shall be in accordance with these Specifications, or as recommended by the valve manufacturer.

I. Environment: Submerged valves shall be of stainless-steel construction as recommended by the valve manufacturer or as approved by the ENGINEER.

2.03 VALVE ACCESSORIES

Valves shall be furnished complete with the accessories required to provide a functional system.

PART 3 – EXECUTION

3.01 VALVE INSTALLATION

A. General: Valves, actuating units, stem extensions, valve boxes, and accessories shall be installed in accordance with the Manufacturer's written instructions and as indicated. Gates shall be adequately braced to prevent warpage and bending under the intended use. Valves shall be firmly supported to avoid undue stresses on the pipe.

B. Access: Valves shall be installed with easy access for actuation, removal, and maintenance and to avoid interference between valve actuators and structural members, handrails, or other equipment.

C. Valve Accessories: Where combinations of valves, sensors, switches, and controls are indicated, the CONTRACTOR shall properly assemble and install such items so that systems are compatible and operating properly. The relationship between interrelated items shall be clearly noted on Shop Drawing submittals.

END OF SECTION

SECTION 40 0557 – ACTUATORS FOR PROCESS VALVES AND GATES

PART 1 – GENERAL

1.01 THE REQUIREMENT

A. Provide all valve and gate actuators and appurtenances, complete and operable, in accordance with the Contract Documents.

B. The provisions of this Section shall apply to all valves and gates, except where otherwise indicated in the Contract Documents.

C. Single Manufacturer: Where two or more valve or gate actuators of the same type or size are required, the actuators shall all be produced by the same Manufacturer.

1.02 SUBMITTALS

A. General: Submittals shall be furnished in accordance with Section 01 3300 – Submittal Procedures and these Specifications. The shop drawing shall substantiate compliance with the Contract Documents requirements.

B. Shop Drawings: Shop Drawings of all actuators shall be submitted together with the valve and gate submittals as a complete package.

C. Operation & Maintenance Manuals: Operation and Maintenance Manual shall be furnished in accordance with these Specifications.

PART 2 – PRODUCTS

2.01 GENERAL

A. General: Unless otherwise indicated, all shut-off and throttling valves, and externally actuated valves and gates, shall be provided with manual or power actuators. All actuators shall be complete and operable with mounting hardware, motors, gears, controls, wiring, solenoids, hand wheels, levers, chains, and extensions, as applicable. All actuators shall be capable of holding the valve in any intermediate position between fully open and fully closed without creeping or fluttering.

B. Manufacturers: Where indicated, certain valves and gates may be provided with actuators manufactured by the valve or gate Manufacturer. Where actuators are furnished by different manufacturers, coordinate selection to have the fewest number of manufacturers possible.

C. Materials: All actuators shall be current models of the best commercial quality materials and liberally sized for the maximum expected torque. All materials shall be suitable for the environment in which the valve or gate is to be installed.

D. Mounting: All actuators shall be securely mounted by means of brackets or hardware specially designed and sized for this purpose and of ample strength. The word "open" shall be cast on each valve or actuator with an arrow indicating the direction to open in the counter-clockwise direction. All gear and power actuators shall be equipped with position indicators. Where possible, manual actuators shall be located between 48 and 60 inches above the floor or permanent working platform.

E. Standard: Unless otherwise indicated and where applicable, all actuators shall be in accordance with ANSI/AWWA C540 - AWWA Standard for Power-Actuating Devices for Valves and Sluice Gates.

F. Functionality: Electric, pneumatic, and hydraulic actuators shall be coordinated with the power requirements of these Specifications.

2.02 MANUAL ACTUATORS

A. General: Unless otherwise indicated, all valves and gates shall be furnished with manual actuators. Valves in sizes up to and including 8 inches shall have direct acting lever of the Manufacturer's best standard design. Larger valves and gates shall have gear-assisted manual handwheel actuators, with an operating pull of maximum 60 pounds on the rim of the handwheel. All buried and submerged gear-assisted valves, all gates, all gear-assisted valves for pressures higher than 250 psi, all valves 30 inches in diameter and larger, and where so indicated, shall have worm-gear actuators, hermetically-sealed and grease-packed, where buried or submerged. All other valves 10 inches to 24 inches in diameter may have traveling-nut actuators, worm-gear actuators, spur- or bevel-gear actuators, as appropriate for each valve.

B. Buried Valves: Unless otherwise indicated, all buried valves shall have extension stems (or bonnets where shown on the plans) to grade, with square nuts or floor stands, position indicators, and cast-iron or steel pipe extensions with valve boxes, covers and operating keys. Where so indicated, buried valves shall be in cast-iron, concrete, or similar valve boxes with covers of ample size to allow operation of the valve actuators. Covers of valve boxes shall be permanently labeled as requested by the OWNER, or the ENGINEER. Wrench-nuts shall comply with AWWA C500 - Metal Seated Gate Valves for Water Supply Service, and a minimum of 2 operating keys, or one key per 10 valves, whichever is greater, shall be furnished to the OWNER.

C. Buried and Submerged Actuators: Buried and submerged valve actuators and gear assemblies shall be provided with Type 304 and/or 316 stainless steel bolting and trim, and shall be rated for continuous submerged service. If buried, the valve actuator shall be suitable for a submerged service at a water depth of 10 feet (minimum). If submerged, the actuator shall be suitable for a submerged service at a water depth of 30 feet (minimum).

2.03 ELECTRIC ACTUATORS

A. General: The CONTRACTOR shall verify with the vendor/manufacturer that each electric actuator (supplied and installed) delivers the necessary torque requirements for opening and closing the corresponding valve that it is actuating, and provide supporting documentation to the ENGINEER. Electric actuators shall be suitable as specified on the plans for use on 115VAC, 1-phase, or 480 VAC, 3-phase, 60Hz power supply. The actuator shall include an internal high-torque reversible electric motor, terminal block, heat-treated alloy steel gearing, a minimum of two (2) 1/2" NPT conduit connections, reduction gearing, valve stem drive nut/bushing, position limit switches, mechanical overload torque switches, ductile iron gear case, automatic de-clutchable handwheel, and a two- (2-) year original manufacturer’s warranty. In order to maintain the integrity of the enclosure, setting of the torque levels, position limits and configuration of the indication contacts, etc. shall be carried out without the removal of any actuator covers over an Infrared interface. Sufficient commissioning tools shall be provided with the actuators and must meet the enclosure protection and certification levels of the actuators. Commissioning tools shall not form an integral part of the actuator and must be removable for secure storage/authorized release. In addition, provision shall be made for the protection of configured actuator settings by a means independent of access to the commissioning tool. The actuator shall include a device to ensure that the motor runs with the correct rotation for the required direction of valve travel irrespective of the connection sequence of the power supply.

B. Actuator Sizing: The actuator shall be sized to guarantee valve closure at the specified differential pressure and temperature. The safety margin of motor power available for seating and unseating the valve shall be sufficient to ensure torque switch trip at maximum valve torque with the supply voltage 10% below nominal. For linear operating valves, the operating speed shall be such as to give valve closing and opening at approximately 10-12 inches per minute unless otherwise noted. Actuator manufacturer/vendor shall confirm appropriate opening and closing times for the valve the actuator is operating.

C. Gears: Motor speed reduction shall be by means of a gear train consisting of hardened steel spur gears and self-locking worm and worm gear set. The worm shall be heat treated alloy steel and have worm thread surface rolled or ground. The worm gear shall be bronze. Non-metallic gears in the power train are not acceptable.

D. Environmental: Actuators shall be suitable for indoor and outdoor use. The actuator shall be capable of functioning in an ambient temperature ranging from -33°C (-27°F) to 70°C (158°F), up to 100% relative humidity. Actuators for hazardous area applications shall meet the area classification, gas group and surface temperature requirements specified in data sheet.

E. Rotating Components: All gearing and shafting shall be supported on anti-friction bearings. All thrust components shall be supported by use of tapered roller bearings.

F. Handwheel Drive: The actuator shall be furnished with a handwheel located in a 90-degree plane from the actuator output drive, with a maximum rim pull requirement of 60 pounds for valve travel loads. An external manual declutch lever shall be included to place actuator in the manual mode. The lever shall not require more than a 10-pound force to engage even when the valve has been tightly seated. The lever is to be padlockable in either handwheel or motor mode. Operation by motor shall not cause the handwheel to rotate, or operation of the handwheel shall not cause the motor to rotate. Handwheel shall operate in the clockwise direction to close.

G. Lubrication: All gearing and bearings shall be grease lubricated and suitable for year-round service based on prevailing ambient temperature conditions.

H. Electric Motors: The motor shall an integral part of the actuator, designed specifically for valve actuator applications. It shall be a low inertia high torque design, class F insulated with a class B temperature rise giving a time rating of 15 minutes at 40°C (104°F) at an average load of at least 33% of maximum valve torque. Temperature shall be limited by thermostats embedded in the motor end windings and integrated into its control. Electrical and mechanical disconnection of the motor should be possible without draining the lubricant from the actuator gear case.

I. Motor Protection: Protection shall be provided for the motor as follows:
   1. Stall – the motor shall be de-energized within 8 seconds in the event of a stall when attempting to unseat a jammed valve.
   2. Over temperature – thermostat will cause tripping of the motor. Auto-reset on cooling
   3. Single phasing – lost phase protection.
   4. Direction – phase rotation correction.

J. Limit Switches: Limit switches shall be geared to the drive mechanism and in step with actual valve position at all times, whether operation is by power or manual mode. Switches shall be activated by a rotor type design. Contacts shall be silver and have a rating of 10 amps at 120/230 VAC, a minimum of (3) N.O. and (3) N.C. contacts shall be provided for each direction of travel. Should auxiliary limit switch contacts for intermediate switch positions be required, please specify here. The limit switch gear mechanism shall be enclosed to prevent entrance of foreign matter or wire entanglement. Use of cams or screws to set switches or designs requiring battery back-up methods to ensure position

control in the event of a power failure, are unacceptable. Torque and turns limitation to be adjustable as follows:

1. Position setting range – multi-turn: 2.5 to 100,000 turns, with resolution to 15 deg. of actuator output.
2. Position setting range – direct drive part turn actuators: 90° +/-10°, with resolution to 0.1 deg. of actuator output.
3. Torque setting: 40% to 100% rated torque.

K. Torque Switches: The actuator shall include a variable torque switch to interrupt the motor power circuit when an obstruction is encountered in either direction of travel or when torque seating of valves is required for tight shut off. The torque switch shall have a calibrated dial for adjustment and have means to ensure maximum actuator rating is not exceeded. Contacts shall have the same construction and rating as the limit switch. Mechanical torque springs for load control shall be field replaceable without need of actuator dismantling or removal of the worm assembly. Torque control designs which do not employ mechanical torque springs are unacceptable.

L. Position Indication: Local position indication for quarter turn valves shall be by an indicator dial located on the gear operator and graduated in 25-degree increments. For rising stem multi-turn actuators, a dial window indicator shall be located on the limit switch compartment cover and labeled 0 to 100% open and graduated in 1% increments. Four contacts shall be provided which can be selected to indicate any position of the valve. Provision shall be made for the selection of a normally closed or open contact form. Contacts shall maintain and update position indication during hand wheel operation when all external power to the actuator is isolated. The contacts shall be rated at 5A, 250V AC, 30V DC. As an alternative to providing valve position any of the four above contacts shall be selectable to signal one of the following:

1. Valve opening, closing, or moving
2. Thermostat tripped, lost phase
3. Motor tripped on torque in mid travel, motor stalled
4. Remote selected
5. Actuator being operated by hand wheel
6. Provision shall be made in the design for an additional 4 contacts having the same functionality. Provision shall be made in the design for the addition of a contactless transmitter to give a 4-20mA analogue signal corresponding to valve travel for remote indication when required. The transmitter will auto range to the set limits.

M. Integral Starter and Transformer: The reversing starter, control transformer and local controls shall be integral with the valve actuator suitably housed to prevent breathing and condensation. The starter shall be suitable for 1,200 starts per hour (minimum) and of rating appropriate to motor size. The controls supply transformer shall be fed from two of the incoming three phases and incorporate overload protection. It shall have the necessary tappings and be adequately rated to provide power for the following functions:

1. Energization of the contactor coils.
2. 24V DC output for remote controls.
3. Supply for all the internal electrical circuits.

2.04 ELECTRICAL CONTROLS

A. At a minimum, the actuator shall be furnished with power and control terminal strips, limit switches, torque switches, all housed in a control compartment. The rectangular enclosure shall have a bonded O-ring seal and a hinged cover. Cover bolting shall be captive stainless hex head screws.

B. Controls shall be an integrated modular package, completely wired and be easily removable or replaceable, as a complete package, by removal of four (4) captive screws.

Motor leads and power supply leads will be terminated to the terminal strips located on the modular control package. Power supply terminals (5 points minimum) and control supply terminal (48 points minimum) shall be physically isolated from each other to protect against transient voltages. The terminal strips shall be completely shrouded with a high impact resistant plastic to avoid accidental terminal contact by personnel. The module is to include a snubber circuit to provide control voltage protection for switches and electronic modules for voltage surges. All electrical components of the modular package, such as reversing contactor, transformer, etc., shall be unidirectional plug connected to provide easy removal and replacement without concerns for proper wiring connections. All optional control requirements such as modulating control, 2-wire control, interposing relays, etc. shall be plug-in printed circuit type boards having gold plated contact connectors. Unless otherwise specified, all PC boards must be temperature rated -40°C to +70°C. Ease of replacement or upgrading shall be of paramount consideration.

2.05 OPEN-CLOSE SERVICE CONTROLS

A. Reversing Contactor: Control voltage shall be 120 volts, 50 or 60 Hz. N.O. Seal-in contacts for momentary contact pushbutton control and N.C. contacts for electrical interlock shall be supplied. The following options are available with the integral reversing starter: Motor Overload Relays, Auxiliary Starter Contacts, Phase Sentry.

B. Control Power Transformer: The transformer assembly shall provide 120, 18 and 12 Vac. It shall be epoxy impregnated and encapsulated to prevent moisture incursion and shall be completely wired as an assembly and plug connected to the modular package.

C. Pushbuttons: Each actuator shall be supplied with open-stop-close pushbuttons furnished integrally mounted. Pushbuttons shall be double O-ring sealed and include a protective silicone boot. Seal material shall be resistant to ozone and ultraviolet light. When integrally mounted pushbuttons are specified, the design shall permit operation of the buttons when the electrical enclosure cover is open.

D. Indicating Lights: The actuator shall include two (2) long life high intensity LED type pilot lights to indicate open, closed, and intermediate valve position (both lights on). Red shall indicate valve open and green shall indicate valve closed. An additional LED pilot light shall be furnished to indicate power is on. A fourth optional LED pilot light is available to indicate torque switch trip.

E. Selector Switch: The actuator shall include a 3-position selector switch, for local (hand)-off-remote (auto) control. If specified, the switch shall be padlockable in any position. A tumbler keylock option may be specified.

2.06 ACTUATORS FOR MODULATION DUTY

A. The starter shall be suitable for 1,200 starts per hour.

B. Control Module: For modulating applications, the control module shall be of the electronic solid-state type to control the position of an AC valve operator motor. Provide input/output per Contract Documents, including but not limited to: 4-20 mA analog input position control from PLC; 4-20 mA analog output position indication to PLC; and digital outputs to PLC for motor running, ready mode, remote mode, over torque condition and trouble. Position control shall be within +/- 2 percent of signal position.

Input Signal: The control unit shall be suited to receive an input set-point from an external 4-20 mA DC source or 120 VAC OPEN and CLOSE digital commands to remotely operate the motor in the forward and reverse directions, whichever is required for modulating purposes.

C. The controller shall compare the input signal with the feedback signal to produce an error signal. The controller shall cause the motor to move the valve or gate in a direction so as to reduce the magnitude of the error signal. The controller positioning accuracy shall be plus or minus 1.0 percent of travel or better. Operating speeds, unless otherwise stated, shall be 90 degrees per minute for rotary operators. It shall be possible to adjust Dead Band (0-9.9% of travel) and a Motion Inhibit Timer (2-99 secs), and select action upon loss of signal.

2.07 MANUFACTURERS

A. Beck, Rotork - IQT, or ENGINEER-approved equal.

PART 3 – EXECUTION

3.01 SERVICES OF MANUFACTURER

A. Field Adjustments: Field representatives of manufacturers of valves or gates with pneumatic, hydraulic, or electric actuators shall adjust actuator controls and limit-switches in the field for the required function.

B. Performance Test Certificate: Each actuator must be performance tested and individual test certificates shall be supplied free-of-charge. The test equipment should simulate a typical valve load and the following parameters should be recorded:
   1. Current at maximum torque setting
   2. Torque at maximum torque setting. Torque curves for both open and close strokes for each MOV shall be provided.
   3. Flash Test Voltage
   4. Actuator Output Speed or Operating Time; in addition, the test certificate should record details of specification, such as closing direction, and wiring diagram code number.

3.02 INSTALLATION

A. All valve and gate actuators and accessories shall be installed in accordance with these Specifications. Actuators shall be located to be readily accessible for operation and maintenance, without obstructing walkways. Actuators shall not be mounted where shock or vibrations will impair their operation, nor shall the support systems be attached to handrails, process piping, or mechanical equipment.

B. Coordinate all installation with the valve supplier. The supplier shall be responsible for fabrication, coordination, and assembly for a complete operating system.

C. Inspection, Startup, and Field Adjustment: An authorized representative of the Manufacturer shall visit the site and witness the following:
   1. Installation of the equipment for not less than 1 day.
   2. Inspection, checking, and adjusting the equipment for not less than 1 day.
   3. Startup and field-testing for proper operation for not less than 1 day.

END OF SECTION

SECTION 40 0523.04 – PLUG VALVES

PART 1 – GENERAL

1.01 THE REQUIREMENT

A. Provide plug valves and appurtenances, complete and operable, in accordance with the Contract Documents.

1.02 SUBMITTALS

A. Furnish submittals in accordance with Section 01 3300 – Submittal Procedures.

1.03 OPERATION AND MAINTENANCE MANUAL

A. Provide six (6) hard copies plus one (1) electronic version in PDF format.

B. Operation and Maintenance Manual shall be furnished in accordance with these Specifications.

1.04 QUALITY ASSURANCE

A. The manufacturer shall provide a 2-year equipment warranty.

1.05 SPARE PARTS

A. Spares shall be as requested by the ENGINEER. Payment for spares shall be made in accordance with the General Conditions.

B. A list of spare parts for each piece of equipment shall be obtained from the manufacturer and submitted at the same time as Shop Drawings. The name, address, and telephone number of the nearest distributor for each piece of equipment shall be furnished.

PART 2 – PRODUCTS

2.01 ECCENTRIC PLUG VALVES

A. General: Plug valves shall be of the quarter-turn, non-lubricated, eccentric type with resilient faced plug. Plug valves shall be designed for a working pressure of 175 psi for valves 12” and smaller, 150 psi for valves 14” and larger. Valves shall provide tight shut-off at rated pressure. Valves 20” and smaller shall have round port design. 24” and larger valves shall have rectangular port design. Minimum port area for all valves shall be 80% of corresponding pipe area.

B. Valve Body: The plug valve body shall be cast iron ASTM A126 Class B with welded-in overlay of greater than 90% nickel alloy content on all surfaces contacting the face of the plug. Sprayed, plated, nickel welded rings or seats screwed into the body are not acceptable. All cover bolts shall be corrosion resistant. The “SEAT END” of the valve shall be designated on the valve body.

C. Coating: Plug valves shall be coated in accordance with these Specifications.

D. Valve Plug: The valve plug shall be cast iron ASTM A126 Class B, with Buna N resilient seating surface to mate with the body seat.

E. Valve Connections: Flanged valves shall be drilled in compliance with ANSI B16.1, Class 125. Mechanical joint valves shall comply with AWWA C111. Threaded valves shall have NPT full size inlets with hexagonal wrench connection.

F. Valve Bearings: Plug valves shall be furnished with permanently lubricated sleeve type bearings conforming to AWWA C504. Bearings shall be of sintered, oil impregnated type 316 stainless steel ASTM A743 Grade CF-8M or bronze ASTM B127.

G. Valve Bonnet shall be in accordance with these Specifications.

H. Valve Shaft Seals: Valve shaft seals shall be of the “U” cup type, in accordance with AWWA C504. Seals shall be self-adjusting and repackable without removing the bonnet from the valve.

I. Valve Actuators: Valves 2.5” and smaller shall be provided with a hand lever. Valves 3” and larger shall be specified as equipped with either a handwheel or 2” square nut for direct quarter-turn operation.
   1. Where specified, a totally enclosed and sealed worm gear actuator with position indicator and externally adjustable open and closed stops shall also be included. The worm segment gear shall be ASTM A536 Grade 65-45-12 ductile iron with precision bore and keyway for connection to the valve shaft. All buried valves shall be provided with worm and gear actuators suited for the intended service. All gear actuators shall be designed to withstand, without damage, a rim pull of 200 lbs for handwheels and an input torque of 300 ft-lbs for nuts.
   2. Buried service actuators shall be packed with grease and sealed for temporary submergences to 20 feet of water. Exposed worm shafts shall be stainless steel.

J. Electric Actuators: When specified, electric actuators shall be in accordance with these Specifications.

K. Manufacturers:
   1. VAL-MATIC
   3. Dezurik
   4. ENGINEER-approved equal

PART 3 – EXECUTION

3.01 GENERAL

A. Valves shall be installed in accordance with provisions of these Specifications.

END OF SECTION

SECTION 40 0563 – BALL VALVES

PART 1 – GENERAL

1.01 THE REQUIREMENT

A. Provide ball valves and appurtenances, complete and operable, in accordance with the Contract Documents.

B. American Iron and Steel (AIS) requirement applies to this Section. All iron and steel products used in this project must be produced in the United States.

1.02 SUBMITTALS

A. Furnish submittals in accordance with Section 01 3300 – Submittal Procedures.

PART 2 – PRODUCTS

2.01 GENERAL

A. The ball valve type and its actuator shall be as indicated in the contract documents. All actuators shall be in accordance with these Specifications.

2.02 BALL VALVES (3- TO 12-INCH)

A. Construction: Ball valves shall be full bore with a design working pressure of 150 psig. Valve construction shall conform to the following:
   1. Top Flange shall be design for direct mounting of actuator and gear operators. Top flange shall provide easy access for adjustment of gland bolts. Design shall conform to EN ISO 5211.
   2. Valve Design shall conform to ASME B16.34-2004/ API 6D / BS EN ISO 17292 Class 150.
   3. Valve end-to-end dimensions shall be per ASME b16.10 / API 6D.
   4. Valve Body shall be flanged, two-piece design in cast construction and shall be coated with two-coat zinc-rich epoxy paint.
   5. Ball shall be floating design, stainless steel with superior finish and sphericity to ensure extended seat life and low operating torque.
   6. Stem shall be stainless steel, heavy duty construction with double “D” (sizes up to 4”) and round and keyed (sizes 6” and greater) configurations.
   7. Seat shall be contoured and be reinforced with PTFE seat.
   8. Body joint bolting shall conform to ASTM A193 B7/ ASTM A194 2H for carbon steel bodies and ASTM A193 GR.B8/ ASTM A194 GR.8 for stainless steel bodies.
   9. Actuators: Unless otherwise indicated, ball valves shall have manual hand lever or wheel actuators.

B. Manufacturers, or ENGINEER-approved equal:
   1. Apollo
   2. Nibco
   3. Valtorc

2.03 BALL VALVES (SMALLER THAN 3-INCH)

A. Construction: Ball valves, smaller than 3-inch, for general purpose use, shall be heavy-duty type for industrial service, with butt weld, grooved, threaded, or soldered ends to match the piping. The bodies shall be cast red bronze conforming to ASTM B584. The ball and threaded pack gland shall be brass with a reinforced PTFE seat ring. The stem shall be of silicon bronze. All valves shall have a pressure rating of minimum 125 psi steam, and 200 psi cold water, unless otherwise indicated.

B. Construction (Thermoplastic Ball Valves): PVC and CPVC ball valves, smaller than 3-inch, for general purpose use, shall be heavy-duty type for industrial service, with butt socket, threaded, or flanged ends to match the piping. The ball valves shall be true union type constructed from PVC Type I, ASTM D1784, or CPVC Type IV, ASTM D1784. All O-rings shall be EPDM or Viton. All ½" to 2" valves shall be pressure rated at 235 psi and all 2-1/2" to 3" valves shall be pressure rated at 150 psi, unless otherwise indicated.

C. Manufacturers, or ENGINEER-approved equal:
   1. Nibco
   2. Apollo
   3. Asahi
   4. Spears

2.04 CURB STOP BALL VALVES

A. Construction: Curb stop ball valves smaller than 3-inch shall be shall be heavy-duty type for industrial service, with butt socket, threaded, or flanged ends to match the piping. If Curb Stop ball valve is connecting to plastic piping, stainless steel insert stiffeners are required. Curb stop ball valve to be made of heavy cast bronze body, end piece to be epoxied into body. A fluorocarbon coated brass ball to eliminate corrosion and electrolysis associated with common plug type curb stops. Curb stops shall be 90-degree rotation for open/close, one-piece cap and stem, double Buna-N Stem O-rings to assure permanent water seal at top. Curb stop ball valves shall be designed and manufactured to conform to AWWA Standard C800-89 (ASTM B62-Index 115-85-5-5-5). Valves shall be individually inspected and tested by the manufacture for leaks by air pressure under water.

B. Manufacturers, or ENGINEER-approved equal:
   1. Ford
   2. Mueller Company
   3. Legend

PART 3 – EXECUTION

3.01 GENERAL

A. Ball valves shall be installed in accordance with the provisions of these Specifications. Care shall be taken that valves in plastic lines are well supported at each end of the valve.

END OF SECTION

SECTION 40 0567 – SPECIALIZED PRESSURE AND FLOW-CONTROL VALVES

PART 1 – GENERAL

1.01 THE REQUIREMENT

A. Provide all miscellaneous valves and appurtenances, complete and operable, in accordance with the Contract Documents.

B. American Iron and Steel (AIS) requirement applies to this Section. All iron and steel products used in this project must be produced in the United States.

1.02 SUBMITTALS

A. Furnish submittals in accordance with Section 01 3300 – Submittal Procedures.

1.03 OPERATION AND MAINTENANCE MANUAL

A. Provide two (2) hard copies plus one (1) electronic version in PDF format.

B. Operation and Maintenance Manual shall be furnished in accordance with these Specifications.

1.04 QUALITY ASSURANCE

A. Manufacturer and model shall be described on the Drawings or ENGINEER-approved equal.

B. The manufacturer shall provide a 2-year equipment warranty.

1.05 SPARE PARTS

A. Spares shall be as requested by the ENGINEER. Payment for spares shall be made in accordance with these Specifications and the Contract Documents.

B. A list of spare parts for each piece of equipment shall be obtained from the manufacturer and submitted at the same time as Shop Drawings. The name, address, and telephone number of the nearest distributor for each piece of equipment shall be furnished.

PART 2 – PRODUCTS

2.01 AIR-VACUUM AND AIR-RELEASE VALVES

A. Air and Vacuum Valves: Air and vacuum valves shall be capable of venting large quantities of air while pipelines are being filled, and allowing air to re-enter while pipelines are being drained. They shall be of the size indicated, with flanged or screwed ends to match piping. Bodies shall be of high-strength cast iron. The float, seat, and all moving parts shall be constructed of Type 316 stainless steel. Seat washers and gaskets shall be of a material insuring water tightness with a minimum of maintenance. Valves shall be designed for minimum 150 psi water-working pressure, unless otherwise indicated.

B. Air-Release Valves: Air-release valves shall vent accumulating air while system is in service and under pressure and be of the size indicated and shall meet the same general requirements as indicated for air and vacuum valves except that the vacuum feature will not be required. Valves shall be designed for a minimum water-working pressure of 150 psi, unless otherwise indicated.

C. Combination Air Valves: Combination air valves shall combine the characteristics of air and vacuum valves and air release valves by exhausting accumulated air in systems under pressure and releasing or re-admitting large quantities of air while a system is being filled or drained, respectively. Valves shall have the same general requirements as indicated for air and vacuum valves.

D. Valves shall be manufactured by ARI, or ENGINEER-approved equal, and designed for a minimum water-working pressure of 150 psi, unless otherwise indicated.

E. ARV valves shall be protected with a lockable cover. The cover shall be provided with air vents and a drain port. The cover shall be easily removed by the operator for maintenance purposes.

F. Where noted in plans, an underground air combination valve system shall be installed. The system shall feature the following:
   1. compact submerged vault assembly eliminating the need for human-assessible manholes.
   2. Integral gear box shut-off valve to allow above-ground operation of the valve and eliminate confine space entry.
   3. Air valve extraction with built-in safeguard for extraction under pressure.
   4. All connection fitted with quick connect/ release couplings.
   5. In traffic location, assembly shall be protected with H20-rated precast cover and manhole lid to eliminate direct traffic load on assembly.
   6. Underground valve system shall at a minimum consists of the following:
      a. Polyethylene chamber assembly and cover
      b. Sliding disc valve assembly for shutoff and operation
      c. Back-flushing assembly
      d. 316 SS Air combination valve meeting the requirements of these specifications
      e. Underground assembly shall be manufactured by ARI or approved equal.

PART 3 – EXECUTION

3.01 INSTALLATION

A. Valves shall be installed in accordance with the manufacturer's printed recommendations, and with provisions of these Specifications.

END OF SECTION

SECTION 40 0597 – IDENTIFICATION FOR PROCESS PIPING

PART 1 – GENERAL

1.01 THE REQUIREMENT

A. The CONTRACTOR shall furnish, paint, mark, and paint/install identification devices for all exposed piping and piping in accessible chases and areas above ceilings with panels, and valves using, lettering, flow direction arrows, and related permanent identification devices, and all appurtenant works, in accordance with the requirements of the Contract Documents.

1.02 REFERENCE SPECIFICATIONS, CODES AND STANDARDS

A. Comply with the reference specifications of the General Requirements.

B. OCSD TAGGING PROCEDURE

1.03 CONTRACTOR SUBMITTALS

A. Submittals shall be made in accordance with Section 01 3300 – Submittal Procedures.

B. The CONTRACTOR shall submit samples of all types of identification devices to be used in the work.

C. QUALITY ASSURANCE (NOT USED)

PART 2 – PRODUCTS

2.01 IDENTIFICATION OF PIPING

A. All exposed piping and piping in accessible chases and areas above ceilings with panels, including stainless steel, galvanized steel, copper, CPVC, and Fiberglass RTR piping, shall be completely and totally painted for identification purposes. Piping all be identified with lettering or tags designating the service of each piping system, shall have flow directional arrows. All piping scheduled to be color-coded shall be completely painted or coated with the colors indicated in the schedule below.

B. Each pipe identification shall consist of color-coding in accordance with Subsection 3.04 IDENTIFICATION SCHEDULE, a painted label, and a directional flow arrow. Piping identification shall be located in accordance with Subsection 3.03 PIPE IDENTIFICATION LOCATION.

C. For cases where there are insulated lines wrapped with aluminum sheathing, stainless steel sheathing, or gray fabric, the background color shall be applied to a 24-inch length of pipe section and color band centered within the 24 inch field of background color.

D. Paint Colors: Paint colors shall conform to the following designations:

Color	**Mgf./No.**
Paper White	DuPont 40P-1031
	Tnemec F075-WH01A
	Dunn Edwards IP630-SY-1
Dark Brown	DuPont 40P-1039
	Tnemec F075-D2526A
	Dunn Edwards IP630-SY-25
Safety Red	DuPont 333-23664
	Tnemec F075-S1170A
	Dunn Edwards IP630-SY-19

Safety Orange	DuPont 40P-1030 Tnemec F075- S1169A Dunn Edwards IP630- VD9222
Light Gray	DuPont 333-23662 Tnemec F075- A2606A Dunn Edwards IP630- RL7422
Caribbean Blue	DuPont 40P-1048 Tnemec F075-B2478A Dunn Edwards IP630-UD10264
Safety Blue	DuPont 40P-1048 Tnemec F075-B2477A Dunn Edwards IP630-VD10265
Spectra Master (Dark Blue)	DuPont 40P-1496 Tnemec F075-B2476A Dunn Edwards IP630-SY-23
Custom Formula (Purple)	DuPont 40P-1628 Tnemec F075-R1217A Dunn Edwards IP630-SY-13
Cool Green	DuPont 40P-1008 Tnemec F075-S1168A Dunn Edwards IP630-UL9585
Safety Yellow	DuPont 333-23663 Tnemec F075-S1167A Dunn Edwards IP630-UD9223

E. Lettering

1. Identification labels and directional arrows shall be painted directly on piping using stencils or makers.
2. Pipe identification markers shall be vinyl or polyester construction with an adhesive strip, coiled to wrap completely around the pipe (no straps) and have subsurface printing. Pipe less than six inches shall have lettering to meet ANSI A13.1 standards.
3. The size of the letters for identification labels shall be as follows:

PIPE OUTSIDE DIAMETER*	LETTER SIZE
5/8” to 1 1/4”	1/2” high
1 1/2” to 3”	1” high
Over 3”	2” high

*Outside pipe diameter shall include insulation and jacketing.

4. Identification markers shall have letters, directional arrows and colors as follows:

Plant Water	Black Letters on Yellow Field
Industrial Water	Black Letters on Yellow Field
Potable Water	White Letters on Green Field
Reclaimed Water	Black Letters on Yellow Field
Fire Protection Water	White Letters on Red Field
High Pressure Air	White Letters on Blue Field
Instrument Air	White Letters on Blue Field
Sludge	Black Letters on Yellow Field
Steam	Black Letters on Yellow Field
Drain	Black Letters on Yellow Field
Acid	Black Letters on Yellow Field

Caustic Solution	Black Letters on Yellow Field
Polymer	Black Letters on Yellow Field
Ferric Chloride	Black Letters on Yellow Field
Sodium Hypochlorite	Black Letters on Yellow Field
Hydrogen Peroxide	Black Letters on Yellow Field
Digester Gas	Black Letters on Yellow Field
Natural Gas	Black Letters on Yellow Field
Electrical	Per Specification Division 26

PART 3 – EXECUTION

3.01 GENERAL

A. All labels shall be installed in accordance with the manufacturer's printed instructions, and shall be neat and uniform in appearance. All such tags or labels shall be readily visible from all normal working locations.

3.02 VALVE TAGS

A. Valve tags shall be permanently attached to the valve or structure as specified in the OCSD TAGGING PROCEDURES.

B. The wording on the valve tags shall describe the exact function of each valve, e.g., "HWR-BALANCING," "CLS THROTTLING", "RAS-PUMP SHUT-OFF," etc.

3.03 PIPE IDENTIFICATION LOCATION

A. Straight lines of pipe shall be identified at intervals of 20 feet maximum, and at least once in each room unless otherwise directed by the ENGINEER.

B. Piping shall also be identified at a point approximately within 2 feet of all turns, ells, valves, and the upstream side of all distribution fittings or branches and on both sides of each floor, wall, or barrier through which the line passes.

3.04 IDENTIFICATION SCHEDULE

A. Application of identifying devices shall conform to the following color codes, or match existing color code as directed by the ENGINEER.

MATERIAL IN PIPE	**COLOR**
Potable Water (RP Device)	Caribbean Blue
Fresh Water (Air Gap)	Caribbean Blue
Industrial and/or Cooling Water	
LPE	Purple (Custom Formula)
MPE	Purple (Custom Formula)
HPE	Purple (Custom Formula)
HPE (continuously chlorinated)	Purple (Custom Formula)
Fire Water	Caribbean Blue
Industrial Water	Dark Blue
Cooling Water Supply-Plant Effluent	Safety Blue
Cooling Water Return-Plant Effluent	Safety Blue
Cooling Water Return-Industrial Water	Dark Blue
Cooling Water Supply-Industrial Water	Dark Blue
Reclaimed Water	Purple (Custom Formula)
Final Effluent	Safety Blue
Irrigation (continuously chlorinated eff.)	Purple (Custom Formula)

Chemical Supply Lines (Extremely Dangerous)	
Chlorine (gas or liquid)	Cool Green
Chlorine Solution	Cool Green
Sodium Hydroxide	Cool Green
Chlorinator Vent and Detection Lines	Cool Green
Hydrazine	Cool Green
Lime Slurry	Cool Green
Sodium Hypochlorite	Cool Green
Ferric Chloride	Cool Green
Ferrous Chloride	Cool Green
Phosphoric Acid	Cool Green
Concentrated Sulfuric Acid	Cool Green
Dilute Sulfuric Acid	Cool Green
Chemical Draw and Vent	Cool Green
Dilute Acid	Cool Green

Chemical Supply Lines	
Polymer-Anionic	Cool Green
-Cationic	Cool Green
-Nonionic	Cool Green
-Dist.	Cool Green
-Effluent	Cool Green
Chemical Draw and Vent	Cool Green
Sulfite/Bisulfite Scrubbing Liquid	Cool Green
Stratford Solution (Scrubbing Liquor)	Cool Green

Sludge/Ash Transport and Process Lines	
Blended Sludge	Light Gray
Bottom Sludge	Light Gray
Centrate (from digested sludge dewatering)	Light Gray
Centrate (H_2S Scrubbing)	Light Gray
Circulated Sludge	Light Gray
Digested Sludge	Light Gray
Sulfur Slurry (H_2S Scrubber)	Light Gray
Filtrate	Light Gray
Raw Sludge	Light Gray
Screened Digested Sludge	Light Gray
Activated Sludge	Light Gray
Digester Cleanings	Light Gray
Digested Sludge to Screenings	Light Gray
Digested Sludge to Blending Tanks	Light Gray
Digested Sludge Recirculated/Transfer	Light Gray
Digested Sludge Withdrawal	Light Gray
Thickened Waste Activated Sludge	Light Gray
Return Activated Sludge	Light Gray
Thickener Subnatant	Light Gray
Thickener Subnatant Overflow	Light Gray
Cyclone Effluent	Light Gray
Grit	Light Gray
Mixed Liquor	Light Gray
Thickener Pressurized Recycle	Light Gray
Scum	Light Gray

Sludge/Ash Transport and Process Lines	
Ash (hydraulic)	Light Gray
Processed Condensate	Safety Blue
Process Effluent	Safety Blue
Final Clarifier Influent	Safety Blue

Pneumatic Transport Lines	
Sludge Derived Fuel	Cool Green
Hot Ash	Cool Green
Sand Transport	Cool Green

Air and Vacuum Supply Lines	
Oxygen (gaseous)	Cool Green
Oxygen (liquid)	Cool Green
Combustion Air	Paper White
Compressed Air (non-instrument)	Paper White
Instrument Air	Paper White
Process Air	Paper White
Product Air	Paper White
Foul Air	Paper White
Nitrogen (liquid)	Cool Green
Nitrogen (gaseous)	Cool Green
Vacuum	Paper White
Vent Duct	Paper White

Boiler Waters	
Boiler Feedwater Makeup	Caribbean Blue
Boiler Feedwater	Caribbean Blue
Continuous Blow-down	Dark Blue
Demineralized Water	Dark Blue
H. P. Condensate	Dark Blue
L. P. Condensate	Dark Blue
M. P. Condensate	Dark Blue
Intermittent Blow-down	Dark Blue
Softened Water	Dark Blue
Reverse Osmosis Treated Water (permeate)	Purple (Custom Formula)

Steam	
L. P. Steam	Safety Red
M. P. Steam	Safety Red
H. P. Steam	Safety Red

Lube and Hydraulic Oils	
Hydraulic Oil Supply	Safety Yellow
Hydraulic Oil Return	Safety Yellow
Lube Oil	Safety Yellow
Drain Oil	Safety Yellow
Oil Vapor	Safety Yellow
Grease	Safety Yellow
Defoamant-Sludge Blending Tanks (Kerosene)	Safety Yellow

Fuel Supply	
Natural Gas/LNG/Propane	Safety Yellow
Digester Gas: LP, MP, and HP	Safety Yellow
Diesel	Safety Yellow

Lab	
Distilled Water	Dark Blue
Salt Water	Dark Blue

Miscellaneous	
Equipment Vent	same as equipment
Sample Line	same as line or equipment being sampled
Spare Chemical	same as chemical

Sanitary Sewer/Storm Drains	
Roof Drain	Dark Brown or same color as bldg. walls
Plant Drain	Dark Brown
Storm Drain	Dark Brown
Sump Pump Discharge	Dark Brown
Sanitary Sewer	Dark Brown
Sanitary Vent	Dark Brown
Influent Raw Sewage (up to primary tanks)	Light Grey
Demineralized Waste	Dark Brown
Reverse Osmosis Reject	Dark Brown

END OF SECTION

Appendix A - Geotechnical Report

San Luis West
WWTP Improvements

101 Cesar Chavez Blvd.
San Luis, Arizona 85349

Geotechnical Investigation

GTS Job No: 24-034-G
April 2025

06-12-2025

Exp 06-30-2025

Prepared for:
Pacific Advanced Civil Engineering, Inc.
8723 E Via De Commercio, #A-204
Scottsdale, Arizona 85258

Prepared by:
Geotechnical Testing Services, Inc
1044 East 21st Street
Yuma, Arizona 85365

Geotechnical Testing Services, Inc. 1044 East 21st Street Yuma, Az. 85365
Materials Testing Laboratory Phone (928) 329-4695 Fax (928) 329-4782

June 12, 2025

Pacific Advanced Civil Engineering, Inc.
8723 E Via De Commercio, #A-204
Scottsdale, Arizona 85258

Attention: Mr. Duong Do

Reference: San Luis West WWTP Improvements
101 Cesar Chavez Blvd.
San Luis, Arizona 85349

Dear Mr. Do:

Geotechnical Testing Services is pleased to present the attached Geotechnical Investigation for the referenced project.

The purpose of our investigation was to evaluate the subsurface soil conditions at the proposed site in order to develop geotechnical recommendations to aid in the project design and construction.

Based on the results of our field and laboratory testing it is our opinion that the referenced project may be constructed provided that the recommendations presented in this report are incorporated.

We appreciate the opportunity to provide our services for the project. If you have any questions regarding this report or if we may be of any assistance, please contact me.

Sincerely,

Geotechnical **T**esting **S**ervices**, I**nc.

Courtney M. Arviso P.E.
President

Exp 06-30-2026

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Appendix A – Vicinity Map, Site Plan and Bore Log

Appendix B – Laboratory Test Data

GTS Report No: 24-034-G

1. INTRODUCTION

1.1 General

This report presents the findings of our Geotechnical Investigation for the San Luis Wastewater Treatment Plant Improvements which is located at 101 Ceaser Chavez Blvd., in San Luis, Arizona (see Appendix A). The purpose of our investigation was to explore the subsurface conditions of the proposed site at various locations. This exploration was used to develop Geotechnical Engineering recommendation.

1.2 Project Description

It is our understanding that the proposed project will consist of various concrete structures and buildings. The building will be constructed out of masonry exterior walls, steel frame interior columns and a roof system and concrete slab on grade. The maximum uniform wall loads are expected to be approximately 4-6 kips per linear foot. The maximum column loads are expected to be approximately 10-15 kips. If any of the above design assumptions change during the final design stage, our office should be notified to review and possibly revise our recommendations.

2. FIELD EXPLORATION

Geotechnical Testing Services advanced seven (7) test bore holes within the proposed new project area to a depth of fifteen (15) feet below the existing grade (See Appendix A).

All the boreholes were advanced using a CME-55 drill rig. Samples were obtained from all the boring locations using either a split spoon or ring sampler or from the auger cuttings.

A staff engineer maintained logs of bore holes during the exploration. The final form of the subsurface logs was edited after reviewing the retrieved samples and the laboratory data. In addition, standard penetration tests were conducted at various holes and depths using 2.0-inch outside diameter split spoon sample. The split spoon was advanced using a 140-pound hammer falling a distance of 30 inches. The blow counts corresponding to the last 12 inches of penetration were recorded on the boring sheets.

All the soil that was encountered was sampled, logged, and visually classified in the field. These samples were re-evaluated in the laboratory after further testing and investigation. The soils were classified in accordance with the Unified Soils Classification System.

3. LABORATORY TESTING

The following laboratory tests were conducted on selected samples to assist in classifying and evaluating their engineering properties:

Schedule of Laboratory Tests

Test	ASTM Standards
Sieve Analysis	ASTM D-4318 & D1140
Atterberg Limits	ASTM D-4318
Moisture Density	ASTM D-698

*All the results of our laboratory testing can be found in Appendix B.

4. SITE CONDITIONS

4.1 Site Description

The proposed project site is located at 101 Cesar Chavez Boulevard. The site is currently the existing wastewater treatment plant. The north half of the site elevated approximately 5 - 6 feet above the south half.

4.2 Site Soil Conditions

The site soil typically consists of the following profile: The top fifteen (15) feet consists of a brown, moist, very soft, lean clay, (CL), and then changes to a brown, saturated, loose to medium dense, poorly graded sand with silt, (SP-SM). The clayey soils encountered have a plastic index that range from 5-15. These clayey soils have a moderate to high swell potential. Standard penetration tests were run at various holes and depth and ranged from 4 to 19 blows per foot.

During the exploration the ground water level was not encountered below the surface. There is a possibility that the ground water level varies seasonally in this area. According to the latest ground water map, the ground water level for this location is approximately 12 to 18 feet below the existing grade. The moisture content of the soil samples ranges from 1.0 to 20.0 percent.

4.3 Seismic Considerations

Based on our evaluation, several faults have the potential of generating earthquakes that will cause strong ground motions in the City of Yuma. The Yuma region is located within the area of greatest risk for earthquake ground shaking within the state, The Basin and Range Physiographic Province. Yuma is also in relatively close proximity to major active fault zones at the boundary of the North American and Pacific lithospheric plates in southern California and northern Mexico. The closest approach of the San Andreas system to Yuma is approximately 65 miles. Ground shaking hazard is also present from the San Jacinto system (65 miles), Imperial fault (28 miles) and the Cerro Prieto fault (49 miles). However, Basin and Range faults have relatively long and uncertain recurrence times, that is, the time between large earthquakes occurs on a scale of tens to hundreds of thousands of years.

Whereas large earthquakes occur on plate boundary faults on a scale of hundreds of years, or less. Strong ground measurements from the Northridge, Kobe and other large earthquakes have shown that ground motions are significantly greater near an earthquake source. The proposed site is located within a Seismic Risk Area and the design should include seismic provisions as included in the 2018 International Building Code.

Longitude	114°	35 Minutes	49 Seconds West
Latitude	32°	41 Minutes	47 Seconds North

*The site soil classification is Type 'D'.

4.4 Liquefaction

Since the ground water level is fairly shallow and there is potential for saturated sands, and therefore liquefaction is likely for this site. Liquefaction is the temporary loss of bearing strength due to the shear waves passing through the saturated granular soil layers. This causes the distortion of the granular structure which causes the particles to collapse. This collapse then increases the pore-water pressure.

It is understood that the site lies within an area of seismic risk. Therefore, it is recommended that suitable precautions be applied to the building design to help prevent major structural damage in the event of an earthquake. Earthquake resistant design parameters are recommended to be obtained from the 2018 International Building Code**.**

5. DISCUSSION AND RECOMMENDATIONS

5.1 Site Preparation

The following site recommendations should be followed within any building pad or foundation area. The foundation area included a five (5) foot perimeter outside of the footing outline. All soil containing any organic material or concrete materials should be stripped and removed entirely from the site. Any debris larger than three (3) inches in diameter on the proposed site at the time of construction should be removed.

5.2 Earthwork

A. Pad Preparation

The following steps should be followed within the building pad and foundation area.

A. Clean and grub the area as mentioned above in Section 5.1.
B. Remove and dispose enough of the existing clayey native soil to provide 48 inches of moisture conditioned and compacted imported fill below the bottom of any foundation.
C. Moisture condition and compact the bottom twelve (12) inches of excavation area to +/-2% of optimum and compact to 95% of ASTM D-698.
D. Replace the forty-eight (48) inches of over excavated soil with an aggregate base material meeting Yuma County Standards. Place the aggregate base in 12 inch loose maximum lifts. Moisture condition each lift to +/-2% of optimum and compact to a 95% per ASTM D-698.
E. The imported Aggregate base will meet the latest Yuma County standards for ABC.

Note: All imported fills must be approved by the Geotechnical Engineer before placing.

5.3 Foundation

Structural foundations that are reinforced can be used for the foundation system, while shallow spread footings and continuous wall footings are suitable to support the proposed structure if they are founded on properly prepared and compacted soil. The building foundation may be designed using a maximum bearing value of **2,800 PSF** for dead and live loads. The allowable soil pressure may be increased by one-third for short term loads induced by wind or seismic events.

All exterior wall footings should be embedded at a minimum of 24 inches below the compacted building pad or the lowest adjacent final grade. Interior footings should be embedded a minimum of 18 inches below the compacted building pad. Continuous wall footings should have minimum width of 18 inches. Spread footings should be designed by the Structural Engineer.

Flexible type connections such as a "Link Seal" should be used to connect exterior piping with any tanks.

5.4 Concrete Slab on Grade

The concrete slab in flat work should be designed by a Structural Engineer. The floor slab can either be monolithically placed with the foundation or doweled after footings have been placed. The compacted pad shall be moistened to within 2% of optimum moisture just prior to concrete placement.

Concrete slab and flatwork reinforcement recommendations should be provided by the Structural Engineer.

Contraction joints should be placed at 12 feet maximum on center each way for all concrete floor slabs. All joints should form approximately square patterns to help reduce randomly oriented crack. Saw cut the joints to a depth of ¼ the slab thickness. All joints should be thoroughly cleaned out and filled with semi-rigid caulking.

All exterior walkways and driveways should be placed on 12 inches of moistened and compacted native soil.

All Portland cement concrete will have a slump that does not exceed 5 inches. The concrete mix design should use Type II Portland cement. The aggregate for the mix should meet the requirements of ASTM C-33 for coarse and fine aggregates. The mix

design should be reviewed and approved by the Structural Engineer before any is placed. It is recommended that all concrete placement and curing operations be performed in accordance with the latest edition of the American Concrete Institute (ACI) Manuel. If moisture sensitive flooring is being used within the new building, a 10-mil vapor barrier should be placed below the concrete slab on grade. This barrier will need to be installed in accordance with the latest ACI standards.

5.5 Resistance to Lateral Loads

If free unrestrained walls are planned to retain level, predominantly granular, non-expansive soils, an active lateral soil pressure of 38 pounds per cubic foot equivalent fluid pressure may be used. For restrained retaining walls under the same conditions as stated above, an active lateral soil pressure of 58 pounds per cubic foot equivalent fluid pressure may be used. The passive soil resistance of properly compacted backfill against footings or stem walls is 270 pounds per cubic foot. The recommendation coefficient of friction is 0.30.

The lateral pressure stated above is ultimate value. Therefore, suitable factors of safety should be incorporated into the design. The Structural Engineer should also consider additional lateral loads induced by surcharged, adjacent footings or seismic activity.

5.6 Drainage

Positive drainage should be maintained away from the building pads and foundation. Water should not be allowed to drain or pond near or around the foundation. All roof drains should be directed away from all building foundation system.

If onsite retention basins are used, curbing should be used around these basins to help prevent erosion of the basin side slopes. All curbs should be extended to a minimum of 6 inches below the bottom of the subgrade to help prevent any water migration under the pavement. Maintenance of proper drainage is necessary to prolong the service life of the pavement.

Any landscaping used around the building should be kept to a minimum. This vegetation should be of the variety that does not require large amounts of water or that does not have

large root systems that could adversely affect the foundation system. All landscaping irrigation systems should be placed away from the foundation and should be maintained and serviced regularly.

5.7 Utilities

All underground utilities for this project should be installed in accordance with the required City of San Luis Standards details and specifications. The native sand can be used as backfill material and all clayey soil must be removed. All trenched will be backfilled in 12-inch lifts, moisture condition to +/-2 of optimum and compacted to 95% per ASTM D-698.

VI. CLOSURE

6.1 Limitations

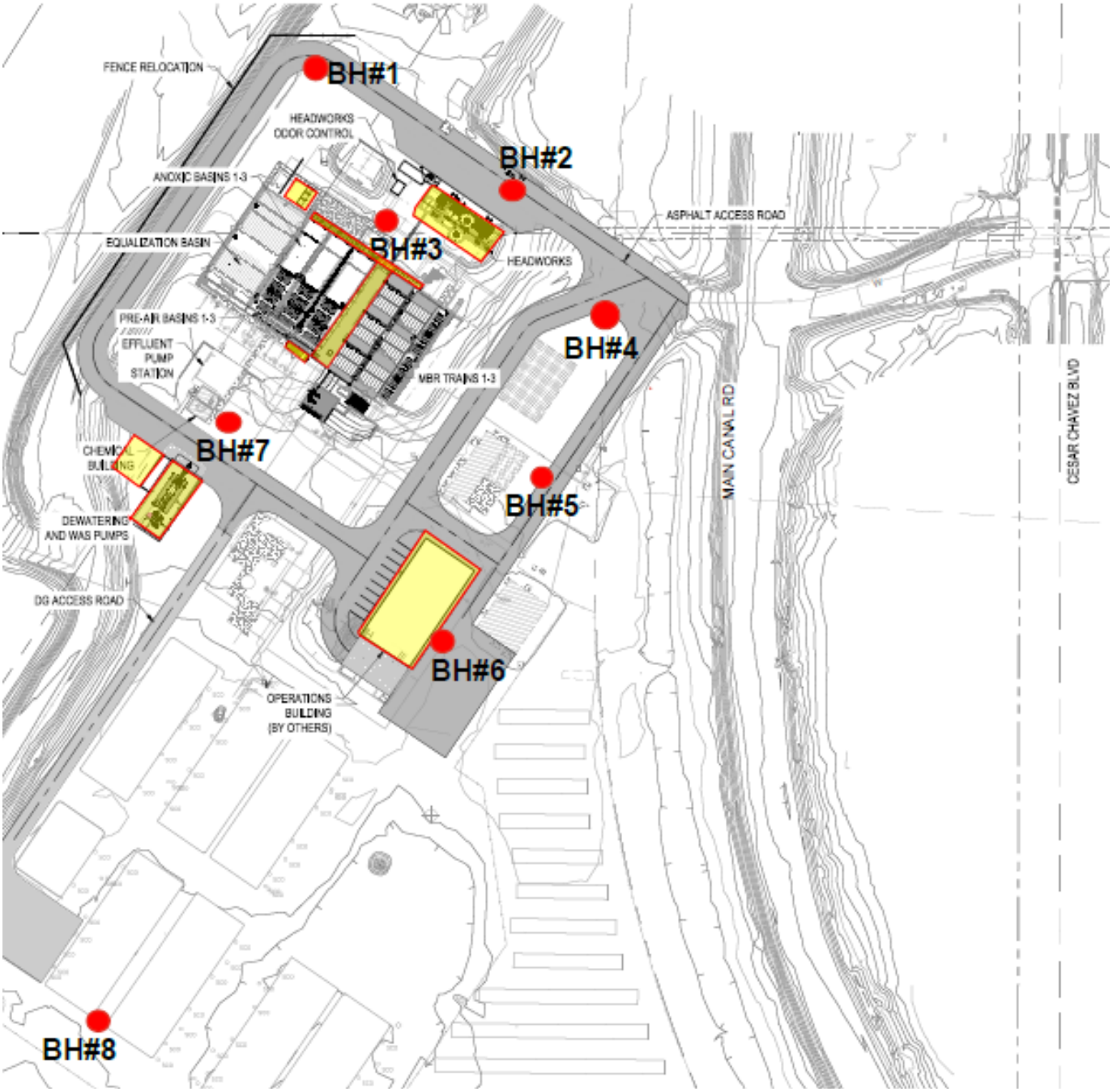
The conclusions and recommendations in this report are based upon the proposed design parameters, subsurface findings, and the assumptions that the soil condition does not deviate appreciably from the test borings.

If there is any deviation of the soil condition or the design parameters, GTS should be notified and retained to review these changes and make the required recommendations. If changes are made or encountered and GTS is not contracted to review such changes, we will not be responsible for the impact of these changes on the structure or the site.

It is recommended that GTS be retained to observe and test the earthwork process to properly ensure that the recommendations are carried out. All testing for this project should be done in accordance with the latest City of San Luis Specifications.

This report has been prepared for the exclusive use of Pacific Advanced Civil Engineering, Inc. for the site specified within this report.

APPENDIX A



SITE PLAN

SAN LUIS WASTE WATER TREATMENT PLANT EXPANSION

SAN LUIS, ARIZONA

GEOTECHNICAL TESTING SERVICES, INC.

1044 E. 21st Street - Yuma, Arizona

Phone: (928) 329-4695

KEY TO SYMBOLS

Symbol	Description
Strata symbols	
	Silty sand
	Description not given for: "OS9"
	Description not given for: "90"
	Description not given for: "Z9S"
	Description not given for: "OS"
	Description not given for: "ZS"
	Low plasticity clay
	Description not given for: "ZO"
	Poorly graded sand with silt
Misc. Symbols	
	Drill rejection

Notes:

1. Exploratory borings were drilled on 03/27/25 using a CME-55 Drill Rig

2. Groundwater was encountered at approximately 16' below the existing grade at the time of drilling.

3. Boring locations were taped from existing features and elevations extrapolated from the final design schematic plan.

4. These logs are subject to the limitations, conclusions, and recommendations in this report.

5. Results of tests conducted on samples recovered are reported on the logs.

LOG OF BORING No. 1

PROJECT: SAN LUIS WASTE WATER TREATMENT PLANT **PROJECT NO.:** 24-034G
CLIENT: PACIFIC ADVANCED CIVIL
PROJECT LOCATION: WEST WASTE WATER TREATMENT PLANT SAN LUIS
LOCATION: SEE SITE PLAN **ELEVATION:** 100
DRILLER: GTS **LOGGED BY:** GTS
DRILLING METHOD: CME **DATE:** 3/27/25
DEPTH TO - WATER> INITIAL: ▽ No. GW **AFTER 24 HOURS:** ▽ No. GW **CAVING>** C

Depth (feet)	Description	Graphic	Sample No.	Blow Counts	% < #200	TEST RESULTS
0	Brown, Dry, silty sand		1-0		28.1	Plastic Limit ⊢—⊣ Liquid Limit; Water Content - ●; Penetration - ▨; 10 20 30 40 50
5	Boring terminated at 3 ft. Brown, Dry, silty sand		1-1		23.4	
10						
15						
20						
25						
30						
35						

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

GEOTECHNICAL TESTING SERVICES
1044 E. 21st STREET
YUMA, AZ 85365
Ph. (928) 329-4695 • Fax (928) 329-4782

LOG OF BORING No. 2

PROJECT: SAN LUIS WASTE WATER TREATMENT PLANT **PROJECT NO.:** 24-034G
CLIENT: PACIFIC ADVANCED CIVIL
PROJECT LOCATION: WEST WASTE WATER TREATMENT PLANT SAN LUIS
LOCATION: SEE SITE PLAN **ELEVATION:** 100
DRILLER: GTS **LOGGED BY:** GTS
DRILLING METHOD: CME-55 **DATE:** 3/27/25
DEPTH TO - WATER> INITIAL: ▽ No. GW **AFTER 24 HOURS:** ▽ No. GW **CAVING>** C

Depth (feet)	Description	Graphic	Sample No.	Blow Counts	% < #200
0	AGGREGATE BASE MATERIAL TOP 8 TO 12 INCHES then Brown, Dry, Silty Sand		2-0		
2.5	Brown, Damp, clayey sand with gravel		2-1	2 3 3	18.8
5					
5.0	Brown, Moist, silty sand with gravel and traces of clay		2-2	3 5 7	43.7
10					
10	Brown, Very Moist, silt with sand and gravel		2-3	3 5 9	75.3
15					
	Boring terminated at 15 ft. Brown, Moist, lean clay with sand		2-4	4 4 7	81.0
20					
25					
30					
35					

TEST RESULTS
Plastic Limit ⊢—⊣ Liquid Limit
Water Content - ●
Penetration - ▨
10 20 30 40 50

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

GEOTECHNICAL TESTING SERVICES
1044 E. 21st STREET
YUMA, AZ 85365
Ph. (928) 329-4695 • Fax (928) 329-4782

LOG OF BORING
No. 3

PROJECT: SAN LUIS WASTE WATER TREATMENT PLANT **PROJECT NO.:** 24-034G

CLIENT: PACIFIC ADVANCED CIVIL

PROJECT LOCATION: WEST WASTE WATER TREATMENT PLANT SAN LUIS

LOCATION: SEE SITE PLAN **ELEVATION:** 100

DRILLER: GTS **LOGGED BY:** GTS

DRILLING METHOD: CME-55 **DATE:** 3/27/25

DEPTH TO - WATER> INITIAL: ▽ No. GW **AFTER 24 HOURS:** ▼ No. GW **CAVING>** C

Depth (feet)	Description	Graphic	Sample No.	Blow Counts	% < #200	TEST RESULTS: Plastic Limit ⊢—⊣ Liquid Limit; Water Content - ●; Penetration - ▨; 10 20 30 40 50

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

GEOTECHNICAL TESTING SERVICES
1044 E. 21st STREET
YUMA, AZ 85365
Ph. (928) 329-4695 • Fax (928) 329-4782

LOG OF BORING No. 4

PROJECT: SAN LUIS WASTE WATER TREATMENT PLANT **PROJECT NO.:** 24-034G
CLIENT: PACIFIC ADVANCED CIVIL
PROJECT LOCATION: WEST WASTE WATER TREATMENT PLANT SAN LUIS
LOCATION: SEE SITE PLAN **ELEVATION:** 100
DRILLER: GTS **LOGGED BY:** GTS
DRILLING METHOD: CME-55 **DATE:** 3/27/25
DEPTH TO - WATER> INITIAL: ▽ No. GW **AFTER 24 HOURS:** ▽ No. GW **CAVING>** C

Depth (feet)	Description	Graphic	Sample No.	Blow Counts	% < #200
0	AGGREGATE BASE MATERIAL TOP 8 TO 12 INCHES then Brown, Dry, Silty Sand		4-0		
2.5	Brown, Damp, clayey sand with gravel		4-1	2 3 4	18.8
5	Brown, Moist, silty sand with gravel and traces of clay		4-2	3 5 6	43.7
10	Brown, Very Moist, silt with sand and gravel		4-3	3 6 6	75.3
15	Boring terminated at 15 ft. Brown, Moist, lean clay with sand		4-4	4 7 8	81.0
20					
25					
30					
35					

TEST RESULTS
Plastic Limit ⊢—⊣ Liquid Limit
Water Content - ●
Penetration - ▨
10 20 30 40 50

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

GEOTECHNICAL TESTING SERVICES
1044 E. 21st STREET
YUMA, AZ 85365
Ph. (928) 329-4695 • Fax (928) 329-4782

LOG OF BORING No. 5

PROJECT: SAN LUIS WASTE WATER TREATMENT PLANT **PROJECT NO.:** 24-034G
CLIENT: PACIFIC ADVANCED CIVIL
PROJECT LOCATION: WEST WASTE WATER TREATMENT PLANT SAN LUIS
LOCATION: SEE SITE PLAN **ELEVATION:** 100
DRILLER: GTS **LOGGED BY:** GTS
DRILLING METHOD: CME-55 **DATE:** 3/27/25
DEPTH TO - WATER> INITIAL: ▽ No. GW **AFTER 24 HOURS:** ▽ No. GW **CAVING>** C

Depth (feet)	Description	Graphic	Sample No.	Blow Counts	% < #200
0	Brown, Dry, silty sand with gravel and ABC type mateiral		5-0		17.7
2.5	Brown, Dry, silty sand with gravel and traces of clay		5-1	3 3 5	30.5
5	Brown, Dry, silty sand		5-2	3 5 6	28.5
10	Brown, Moist, lean clay with sand		5-3	4 5 9	31.1
15	Boring terminated at 15 ft.		5-4	4 7 10	16.1
	Brown, Moist, silty sand				
20					
25					
30					
35					

TEST RESULTS
Plastic Limit ⊢—⊣ Liquid Limit
Water Content - ●
Penetration - ▨
10 20 30 40 50

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

GEOTECHNICAL TESTING SERVICES
1044 E. 21st STREET
YUMA, AZ 85365
Ph. (928) 329-4695 • Fax (928) 329-4782

LOG OF BORING No. 6

PROJECT: SAN LUIS WASTE WATER TREATMENT PLANT **PROJECT NO.:** 24-034G
CLIENT: PACIFIC ADVANCED CIVIL
PROJECT LOCATION: WEST WASTE WATER TREATMENT PLANT SAN LUIS
LOCATION: SEE SITE PLAN **ELEVATION:** 100
DRILLER: GTS **LOGGED BY:** GTS
DRILLING METHOD: CME-55 **DATE:** 3/27/25
DEPTH TO - WATER> INITIAL: ▽ No. GW **AFTER 24 HOURS:** ▽ No. GW **CAVING>** C

Depth (feet)	Description	Graphic	Sample No.	Blow Counts	% < #200
0	Brown, Dry, silty sand with gravel and ABC type mateiral		6-0		17.7
2.5	Brown, Dry, silty sand with gravel and traces of clay		6-1	3 3 3	30.5
5	Brown, Dry, silty sand		6-2	3 5 6	28.5
10	Brown, Moist, lean clay with sand		6-3	4 6 8	31.1
15	Boring terminated at 15 ft.		6-4	4 6 12	16.1
	Brown, Moist, silty sand				
20					
25					
30					
35					

TEST RESULTS
Plastic Limit ⊢—⊣ Liquid Limit
Water Content - ●
Penetration - ▨
10 20 30 40 50

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

GEOTECHNICAL TESTING SERVICES
1044 E. 21st STREET
YUMA, AZ 85365
Ph. (928) 329-4695 • Fax (928) 329-4782

LOG OF BORING No. 7

PROJECT: SAN LUIS WASTE WATER TREATMENT PLANT **PROJECT NO.:** 24-034G
CLIENT: PACIFIC ADVANCED CIVIL
PROJECT LOCATION: WEST WASTE WATER TREATMENT PLANT SAN LUIS
LOCATION: SEE SITE PLAN **ELEVATION:** 100
DRILLER: GTS **LOGGED BY:** GTS
DRILLING METHOD: CME-55 **DATE:** 3/27/25
DEPTH TO - WATER> INITIAL: ▽ No. GW **AFTER 24 HOURS:** ▽ No. GW **CAVING>** C

Depth (feet)	Description	Graphic	Sample No.	Blow Counts	% < #200
0	Brown, Dry, silty sand with gravel (existing aggregate base material)		7-0		26.0
2.5	Brown, Moist, sandy lean clay with gravel		7-1	3 4 4	68.9
5					
5.0	Brown, Moist, lean clay with sand		7-2	3 4 7	77.1
10	Brown, Moist, lean clay with sand		7-3	3 5 7	77.8
15					
15.0	Boring terminated at 15 ft. Brown, Dry, silty sand with traces between 10 and 14 feet.		7-4	4 5 10	12.2
20					
25					
30					
35					

TEST RESULTS
Plastic Limit ⊢—⊣ Liquid Limit
Water Content - ●
Penetration - ▨
10 20 30 40 50

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

GEOTECHNICAL TESTING SERVICES
1044 E. 21st STREET
YUMA, AZ 85365
Ph. (928) 329-4695 • Fax (928) 329-4782

LOG OF BORING No. 8

PROJECT: SAN LUIS WASTE WATER TREATMENT PLANT **PROJECT NO.:** 24-034G
CLIENT: PACIFIC ADVANCED CIVIL
PROJECT LOCATION: WEST WASTE WATER TREATMENT PLANT SAN LUIS
LOCATION: SEE SITE PLAN **ELEVATION:** 100
DRILLER: GTS **LOGGED BY:** GTS
DRILLING METHOD: CME-55 **DATE:** 3/27/25
DEPTH TO - WATER> INITIAL: ▽ No. GW **AFTER 24 HOURS:** ▽ No. GW **CAVING>** C

Depth (feet)	Description	Graphic	Sample No.	Blow Counts	% < #200
0	Brown, Dry, fine, silty clay with sand		8-0		79.8
2.5	Brown, Damp, fine, lean clay		8-1	3 4 5	97.9
5	Brown, Damp, lean clay		8-2	3 5 6	90.5
7.5'	Brown, Moist, lean clay with sand and traces of rock		8-3		83.5
10	Brown, Dry, granular, silty sand		8-4	4 6 8	22.1
15	Boring terminated at 15 ft.		8-5	4 7 12	8.7
	Brown, Dry, granular, poorly graded sand with silt				

TEST RESULTS
Plastic Limit — Liquid Limit
Water Content - ●
Penetration - ▨
10 20 30 40 50

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

GEOTECHNICAL TESTING SERVICES
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YUMA, AZ 85365
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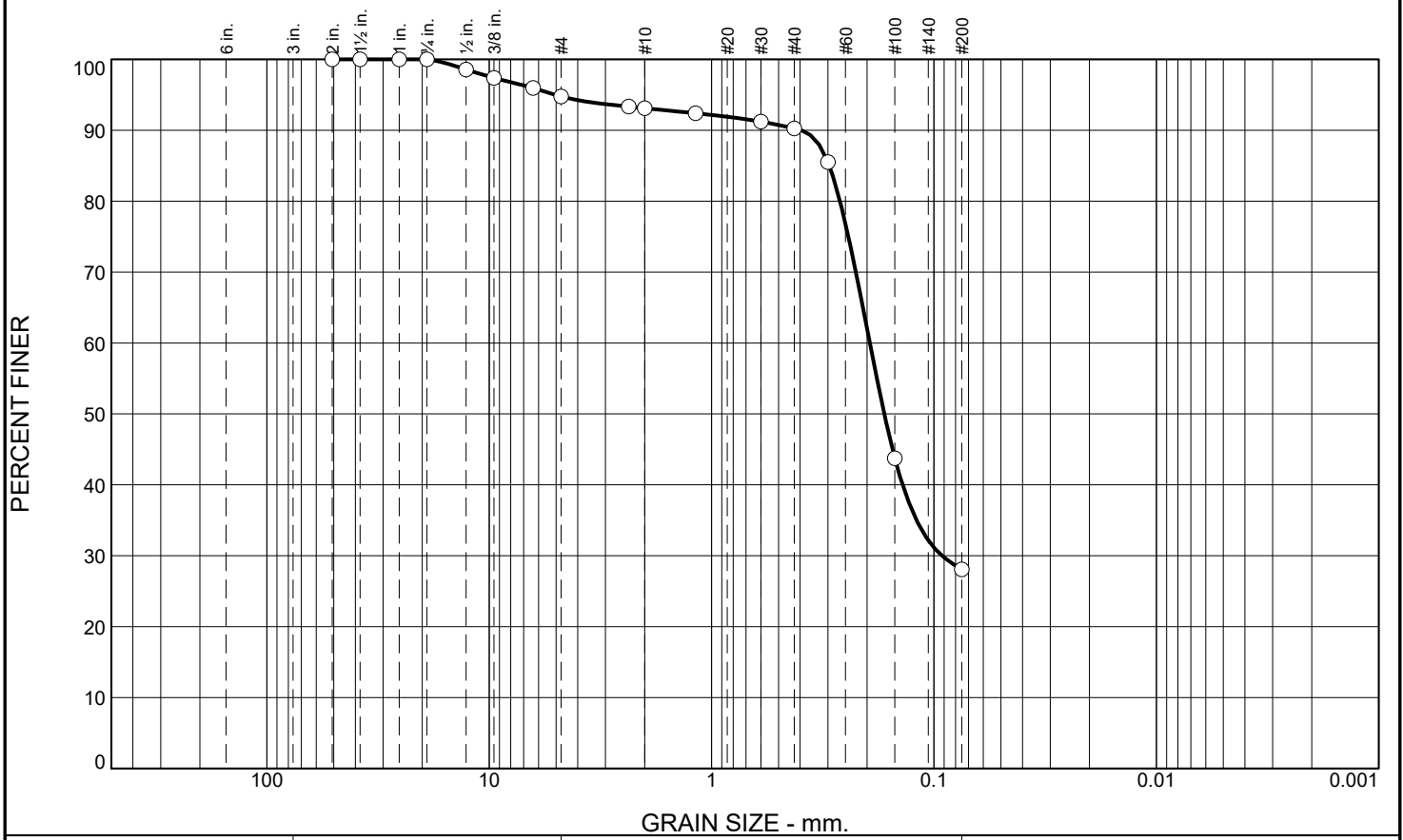
APPENDIX B

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	5.2	1.7	2.8	62.2	28.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2"	100.0		
1.5"	100.0		
1"	100.0		
3/4"	100.0		
1/2"	98.6		
3/8"	97.4		
1/4"	96.0		
#4	94.8		
#8	93.4		
#10	93.1		
#16	92.4		
#30	91.2		
#40	90.3		
#50	85.5		
#100	43.7		
#200	28.1		

* (no specification provided)

Material Description

silty sand

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 0.3952 D_{85}= 0.2956 D_{60}= 0.1942
D_{50}= 0.1672 D_{30}= 0.0920 D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SM AASHTO= A-2-4(0)

Remarks

Source of Sample: 1 **Depth:** 0
Sample Number: 1-0

Date: 3/27/25

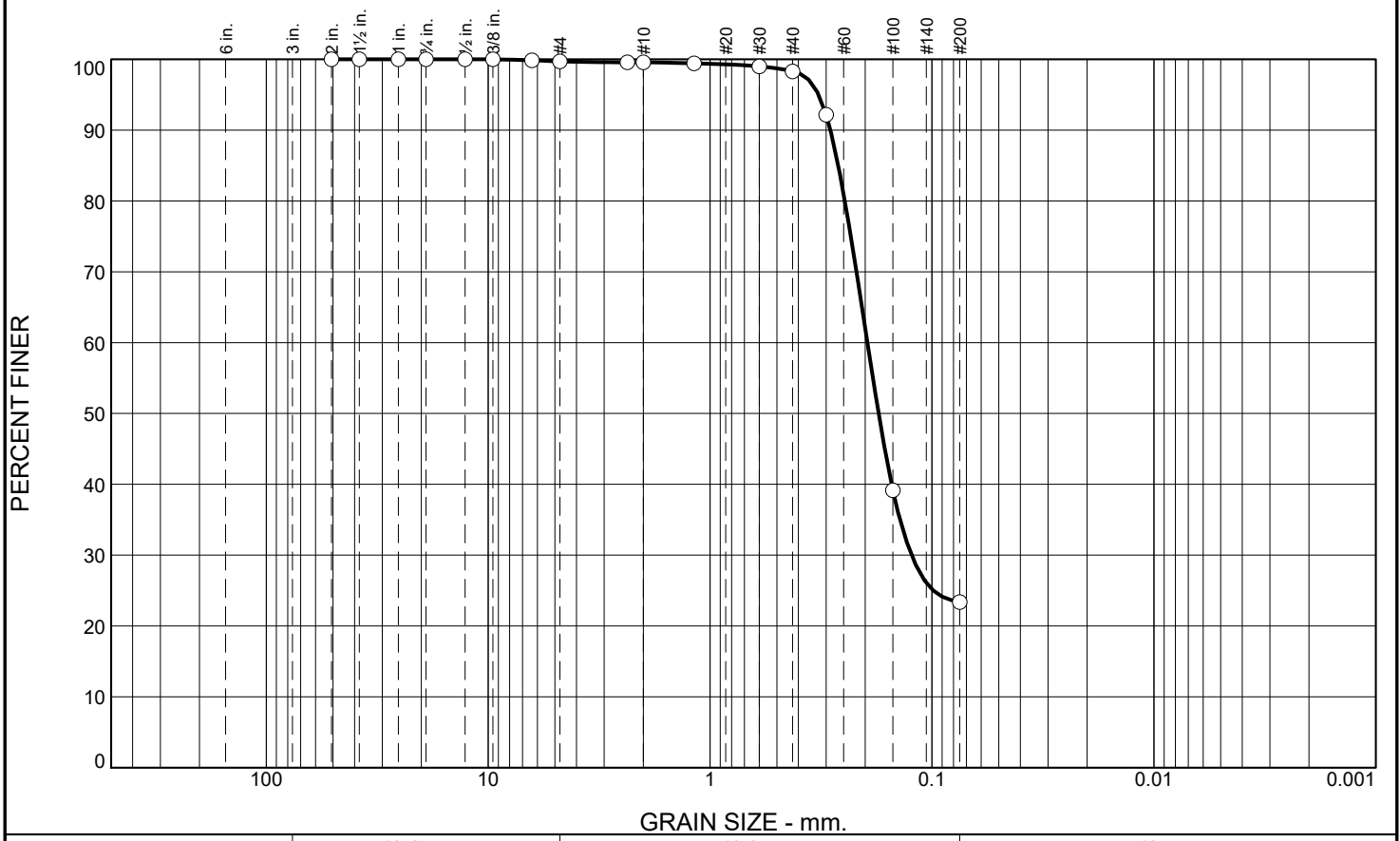
GEOTECHNICAL TESTING SERVICES
Yuma, Arizona

Client: PACIFIC ADVANCED CIVIL
Project: SAN LUIS WASTE WATER TREATMENT PLANT ADDITIONS

Project No: 24-034G **Figure** B-1

Tested By: GTS **Checked By:** GTS

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.3	0.1	1.3	74.9	23.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2"	100.0		
1.5"	100.0		
1"	100.0		
3/4"	100.0		
1/2"	100.0		
3/8"	100.0		
1/4"	99.9		
#4	99.7		
#8	99.6		
#10	99.6		
#16	99.4		
#30	99.0		
#40	98.3		
#50	92.2		
#100	39.2		
#200	23.4		

* (no specification provided)

Material Description

silty sand

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 0.2870 D_{85}= 0.2645 D_{60}= 0.1954
D_{50}= 0.1739 D_{30}= 0.1238 D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SM AASHTO= A-2-4(0)

Remarks

Source of Sample: 1 **Depth:** 3.0
Sample Number: 1-1

Date: 3/27/25

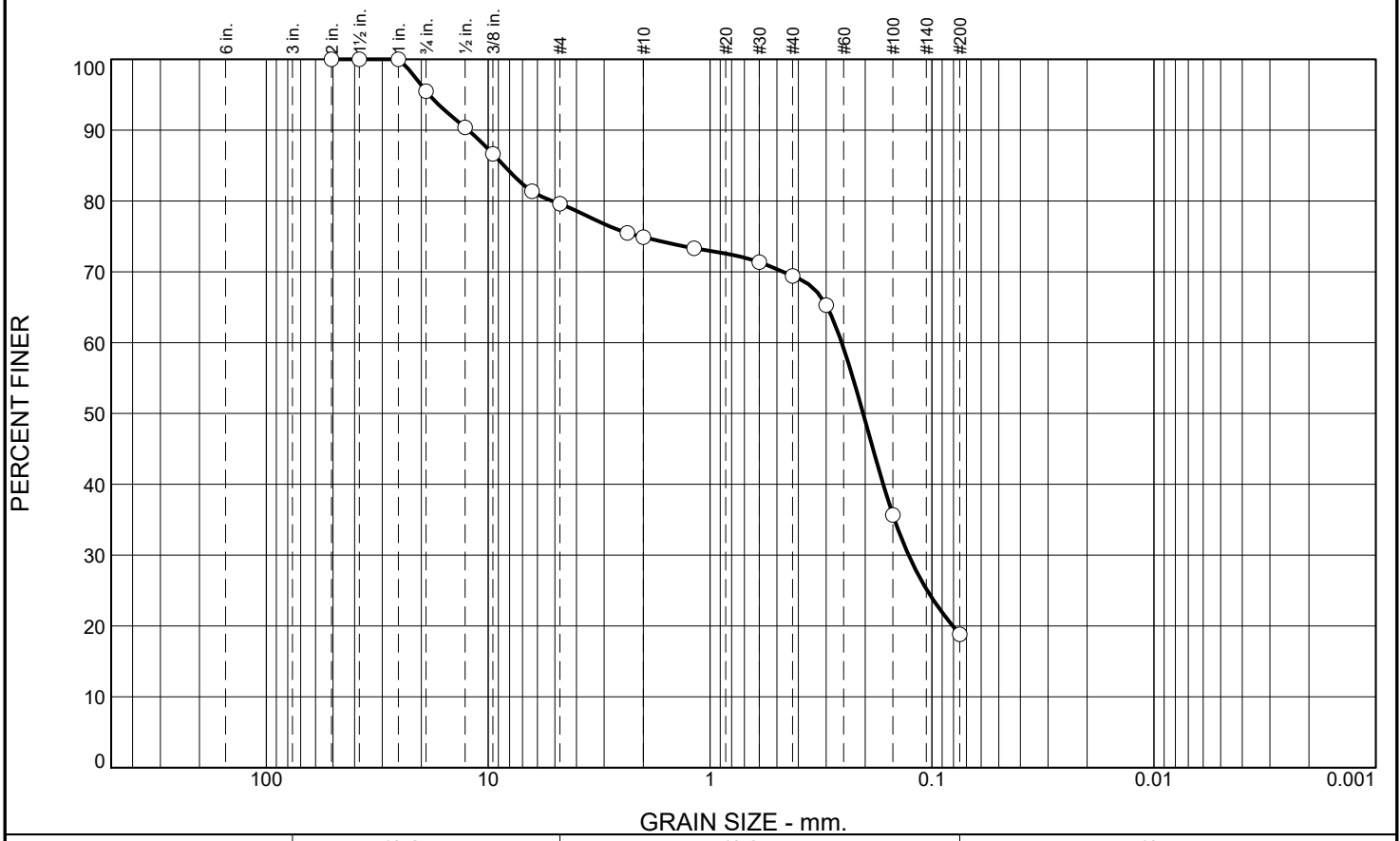
GEOTECHNICAL TESTING SERVICES
Yuma, Arizona

Client: PACIFIC ADVANCED CIVIL
Project: SAN LUIS WASTE WATER TREATMENT PLANT ADDITIONS

Project No: 24-034G **Figure** B-2

Tested By: GTS **Checked By:** GTS

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	4.5	15.9	4.7	5.5	50.6	18.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2"	100.0		
1.5"	100.0		
1"	100.0		
3/4"	95.5		
1/2"	90.4		
3/8"	86.7		
1/4"	81.4		
#4	79.6		
#8	75.5		
#10	74.9		
#16	73.3		
#30	71.4		
#40	69.4		
#50	65.3		
#100	35.7		
#200	18.8		

* (no specification provided)

Material Description

clayey sand with gravel

Atterberg Limits

PL= 16 LL= 32 PI= 16

Coefficients

D_{90}= 12.2863 D_{85}= 8.4913 D_{60}= 0.2551
D_{50}= 0.2043 D_{30}= 0.1275 D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SC AASHTO= A-2-6(0)

Remarks

Source of Sample: 2 **Depth:** 2.5
Sample Number: 2-1

Date: 3/27/25

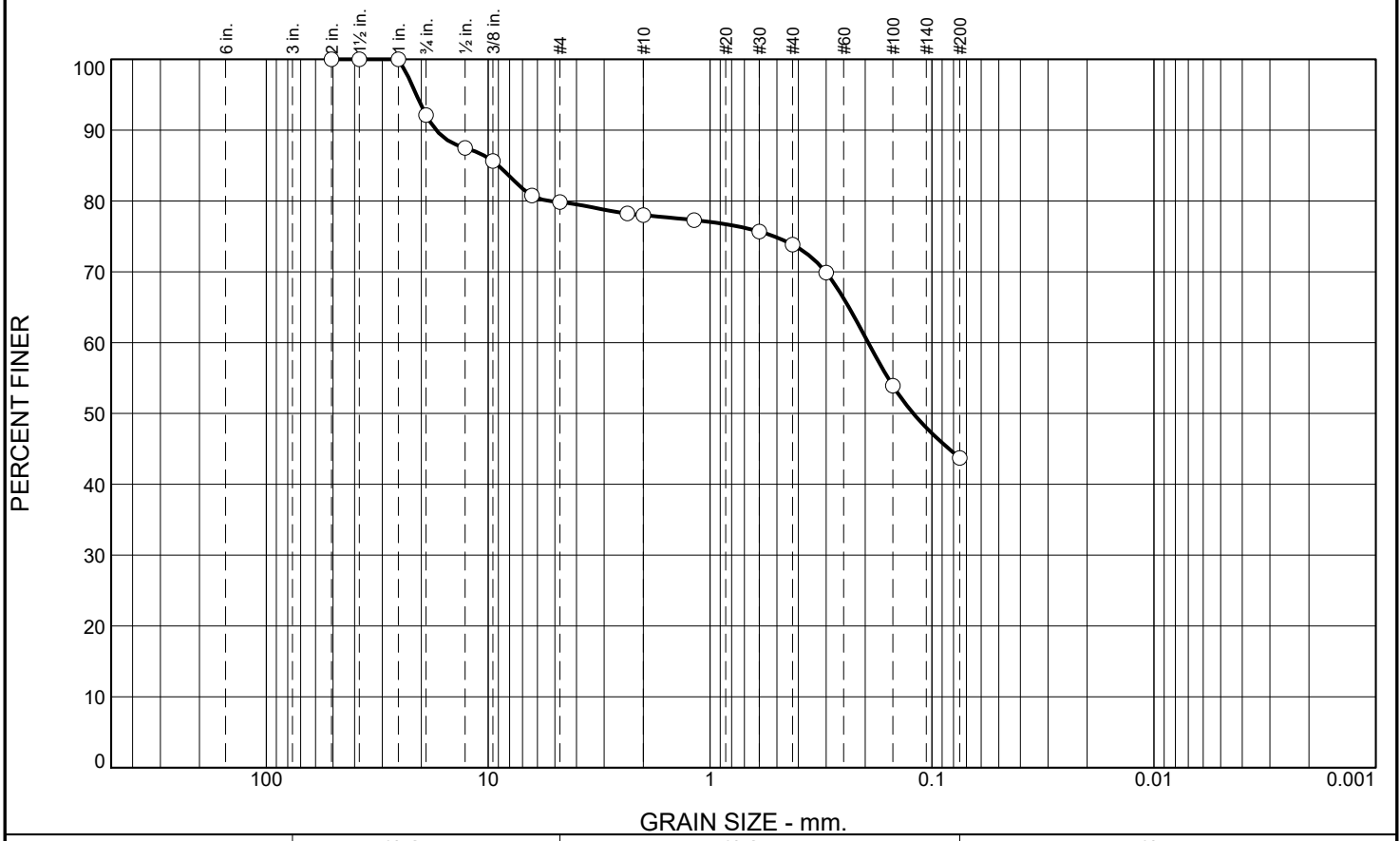
GEOTECHNICAL TESTING SERVICES
Yuma, Arizona

Client: PACIFIC ADVANCED CIVIL
Project: SAN LUIS WASTE WATER TREATMENT PLANT ADDITIONS

Project No: 24-034G **Figure** B-3

Tested By: GTS **Checked By:** GTS

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	7.9	12.2	1.9	4.2	30.1	43.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2"	100.0		
1.5"	100.0		
1"	100.0		
3/4"	92.1		
1/2"	87.5		
3/8"	85.6		
1/4"	80.8		
#4	79.9		
#8	78.2		
#10	78.0		
#16	77.3		
#30	75.7		
#40	73.8		
#50	69.9		
#100	53.9		
#200	43.7		

* (no specification provided)

Material Description

silty sand with gravel

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 17.1465 D_{85}= 8.9929 D_{60}= 0.1938
D_{50}= 0.1215 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SM AASHTO= A-4(0)

Remarks

Source of Sample: 2 **Depth:** 5.0
Sample Number: 2-2

Date: 3/27/25

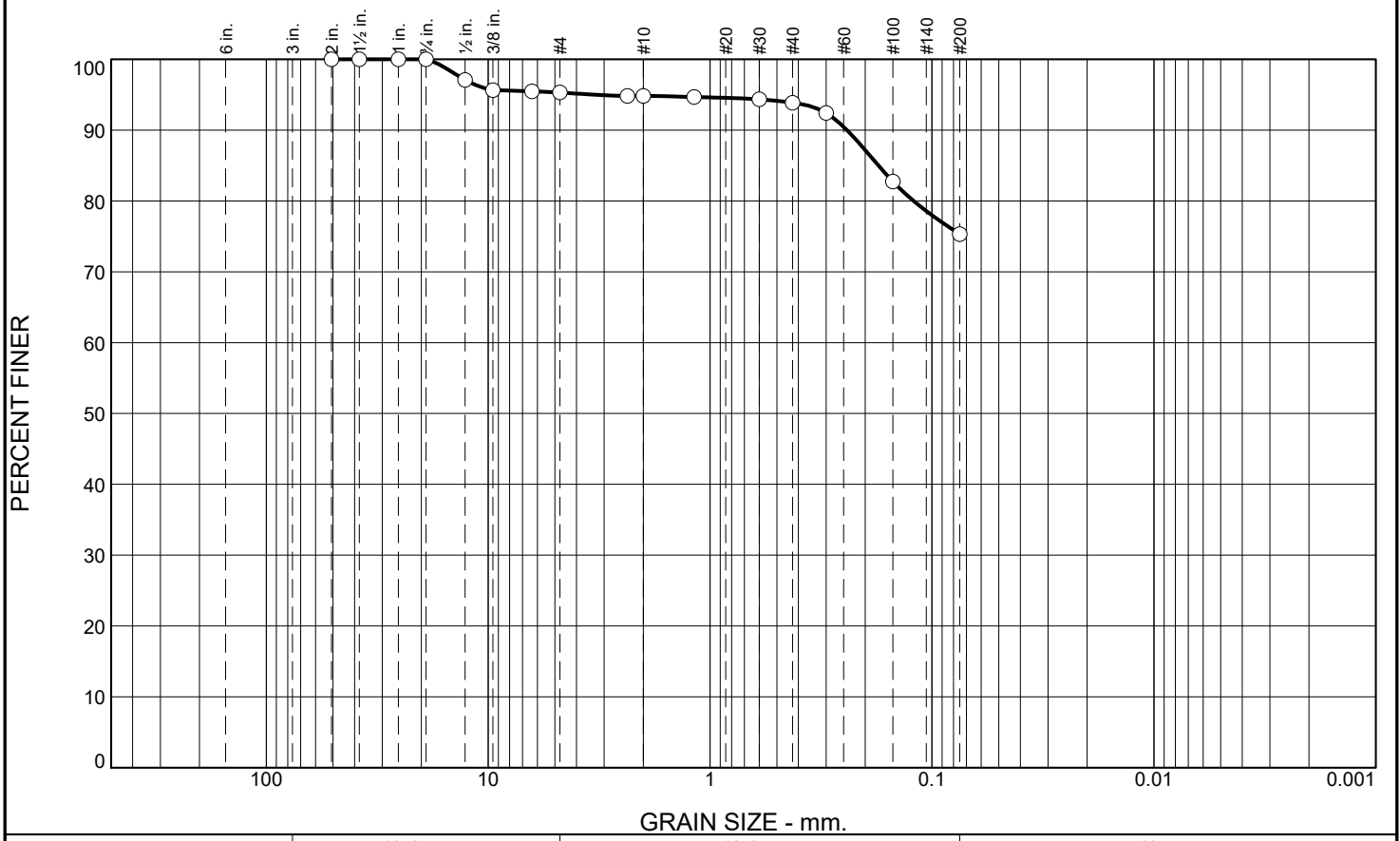
GEOTECHNICAL TESTING SERVICES
Yuma, Arizona

Client: PACIFIC ADVANCED CIVIL
Project: SAN LUIS WASTE WATER TREATMENT PLANT ADDITIONS

Project No: 24-034G **Figure** B-4

Tested By: GTS **Checked By:** GTS

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	4.7	0.5	0.9	18.6	75.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2"	100.0		
1.5"	100.0		
1"	100.0		
3/4"	100.0		
1/2"	97.1		
3/8"	95.6		
1/4"	95.5		
#4	95.3		
#8	94.8		
#10	94.8		
#16	94.7		
#30	94.4		
#40	93.9		
#50	92.4		
#100	82.7		
#200	75.3		

* (no specification provided)

Material Description

silt with sand

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 0.2415 D_{85}= 0.1742 D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= ML AASHTO= A-4(0)

Remarks

Source of Sample: 2 **Depth:** 10
Sample Number: 2-3

Date: 3/27/25

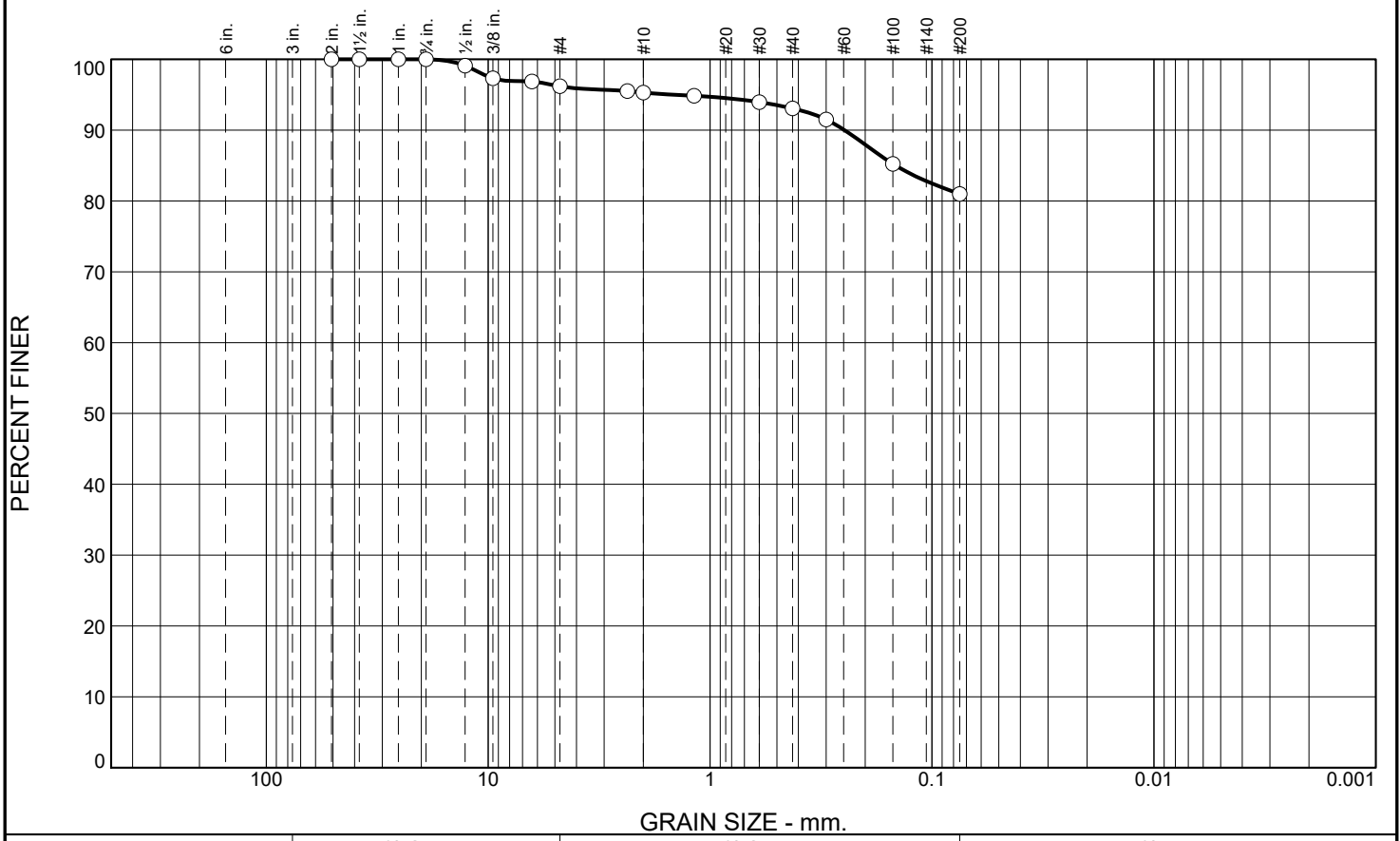
GEOTECHNICAL TESTING SERVICES
Yuma, Arizona

Client: PACIFIC ADVANCED CIVIL
Project: SAN LUIS WASTE WATER TREATMENT PLANT ADDITIONS

Project No: 24-034G **Figure** B-5

Tested By: GTS **Checked By:** GTS

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	3.8	0.9	2.2	12.1	81.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2"	100.0		
1.5"	100.0		
1"	100.0		
3/4"	100.0		
1/2"	99.1		
3/8"	97.3		
1/4"	96.9		
#4	96.2		
#8	95.5		
#10	95.3		
#16	94.9		
#30	94.0		
#40	93.1		
#50	91.5		
#100	85.2		
#200	81.0		

* (no specification provided)

Material Description

lean clay with sand

Atterberg Limits

PL= 17 LL= 38 PI= 21

Coefficients

D_{90}= 0.2478 D_{85}= 0.1458 D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= CL AASHTO= A-6(16)

Remarks

Source of Sample: 2 **Depth:** 15
Sample Number: 2-4

Date: 3/27/25

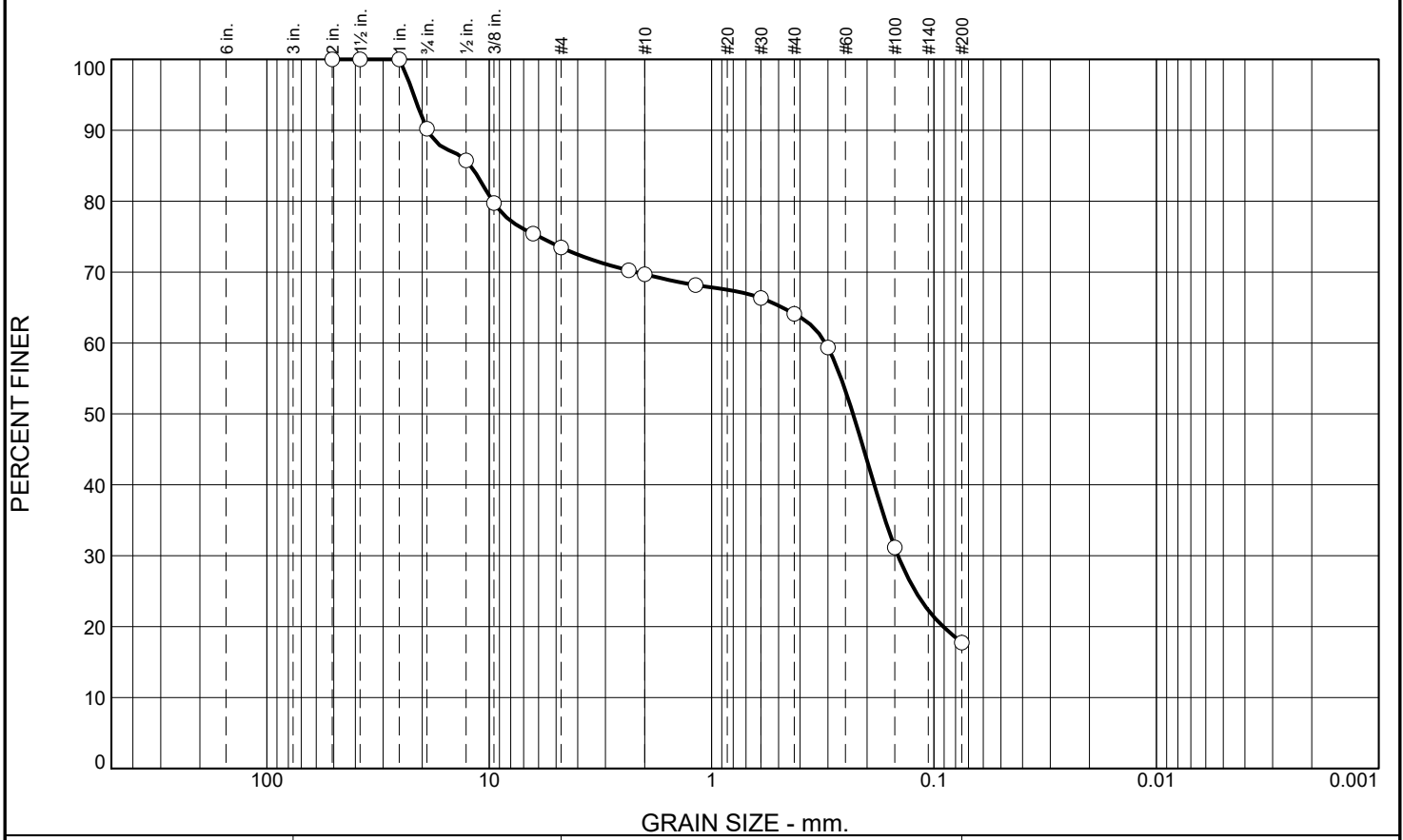
GEOTECHNICAL TESTING SERVICES
Yuma, Arizona

Client: PACIFIC ADVANCED CIVIL
Project: SAN LUIS WASTE WATER TREATMENT PLANT ADDITIONS

Project No: 24-034G **Figure** B-6

Tested By: GTS **Checked By:** GTS

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	9.8	16.7	3.8	5.6	46.4	17.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2"	100.0		
1.5"	100.0		
1"	100.0		
3/4"	90.2		
1/2"	85.8		
3/8"	79.8		
1/4"	75.4		
#4	73.5		
#8	70.3		
#10	69.7		
#16	68.2		
#30	66.3		
#40	64.1		
#50	59.4		
#100	31.2		
#200	17.7		

* (no specification provided)

Material Description

silty sand with gravel

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 18.8880 D_{85}= 12.1185 D_{60}= 0.3080
D_{50}= 0.2312 D_{30}= 0.1451 D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SM AASHTO= A-2-4(0)

Remarks

Source of Sample: 6 **Depth:** 0
Sample Number: 6-0

Date: 3/27/25

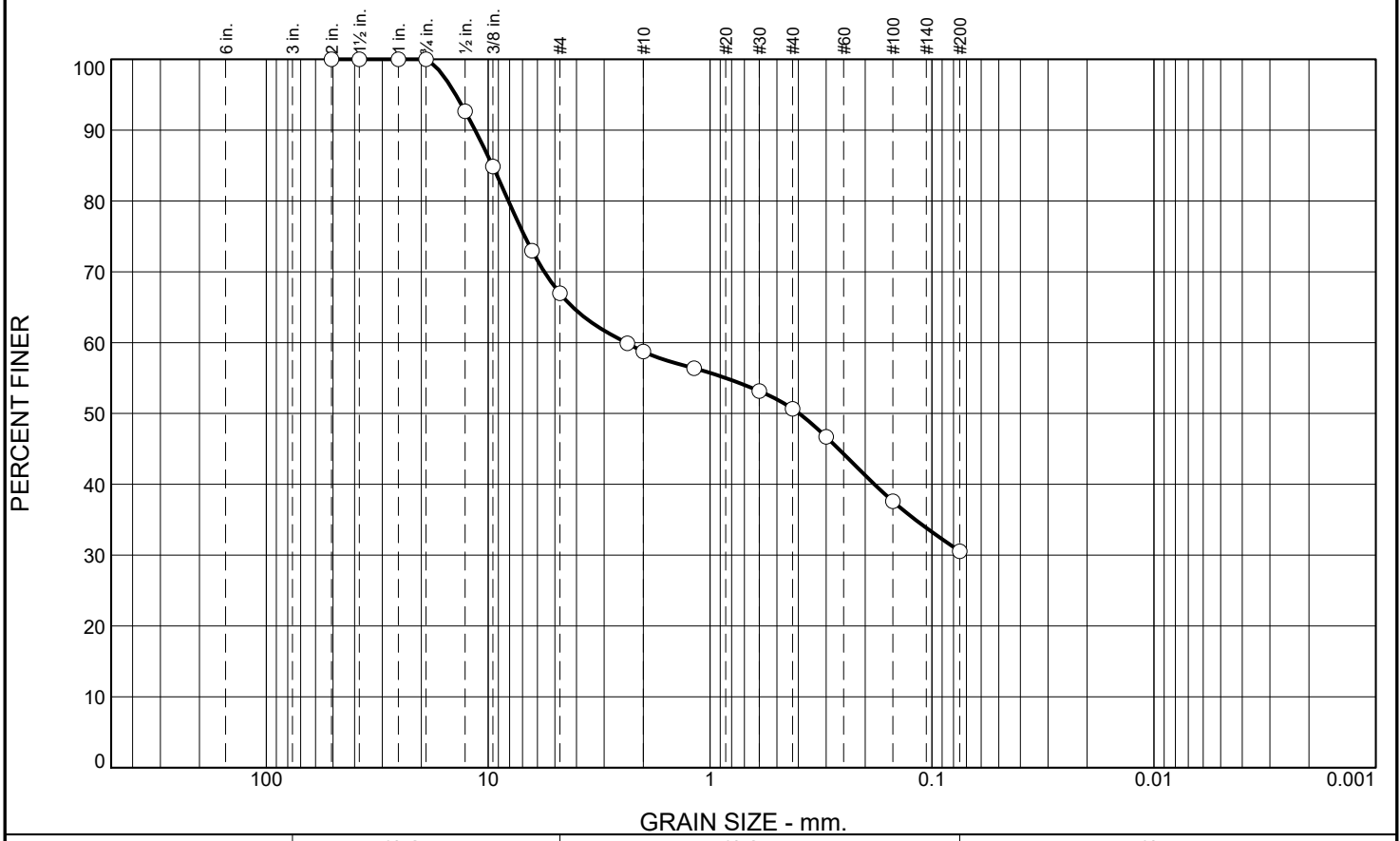
GEOTECHNICAL TESTING SERVICES
Yuma, Arizona

Client: PACIFIC ADVANCED CIVIL
Project: SAN LUIS WASTE WATER TREATMENT PLANT ADDITIONS

Project No: 24-034G **Figure** B-7

Tested By: GTS **Checked By:** GTS

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	33.0	8.3	8.0	20.2	30.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2"	100.0		
1.5"	100.0		
1"	100.0		
3/4"	100.0		
1/2"	92.7		
3/8"	84.9		
1/4"	73.0		
#4	67.0		
#8	59.9		
#10	58.7		
#16	56.4		
#30	53.2		
#40	50.7		
#50	46.7		
#100	37.6		
#200	30.5		

* (no specification provided)

Material Description

silty sand with gravel

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 11.4520 D_{85}= 9.5656 D_{60}= 2.3886
D_{50}= 0.3972 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SM AASHTO= A-2-4(0)

Remarks

Source of Sample: 6 **Depth:** 2.5
Sample Number: 6-1

Date: 3/27/25

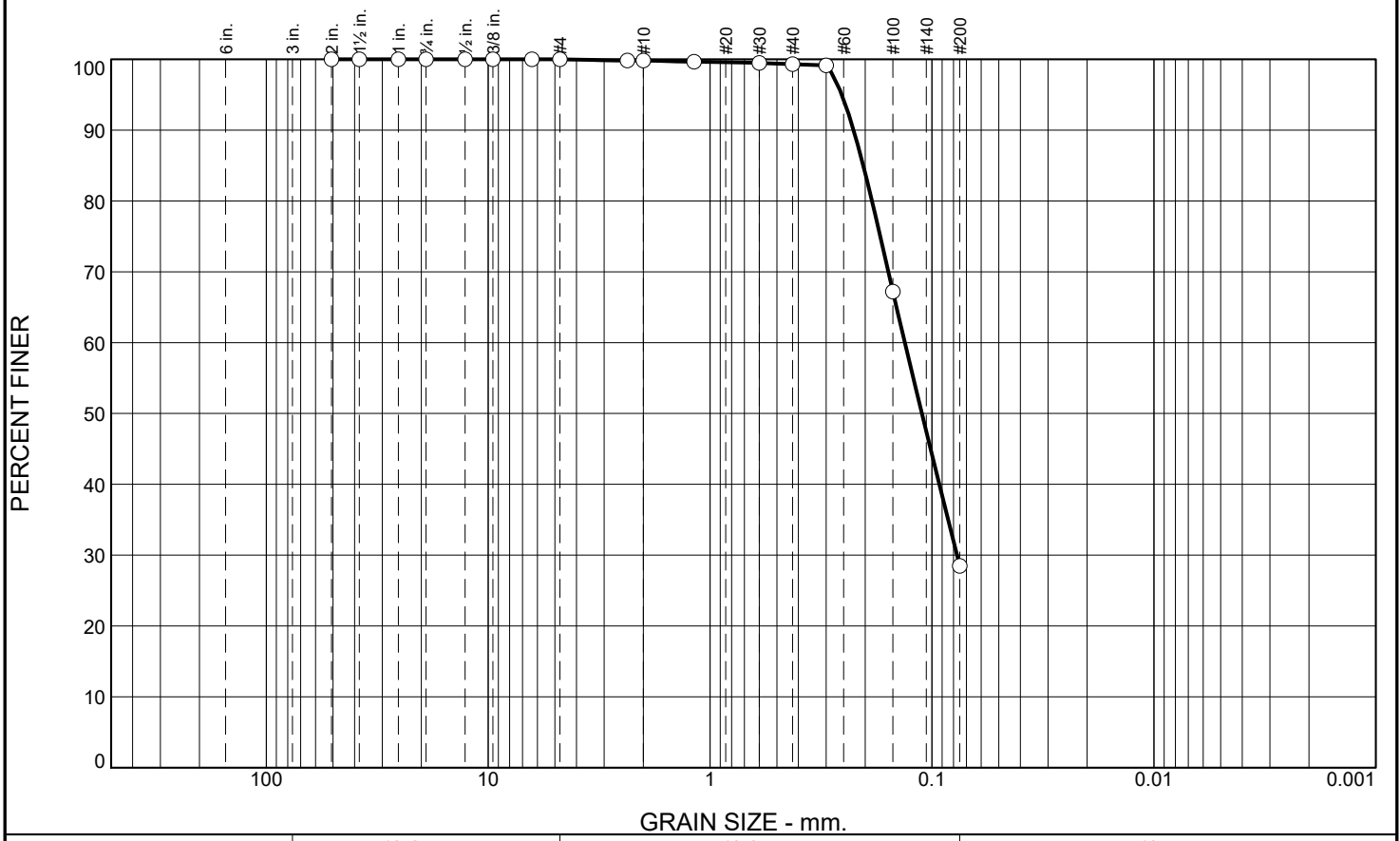
GEOTECHNICAL TESTING SERVICES
Yuma, Arizona

Client: PACIFIC ADVANCED CIVIL
Project: SAN LUIS WASTE WATER TREATMENT PLANT ADDITIONS

Project No: 24-034G **Figure** B-8

Tested By: GTS **Checked By:** GTS

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	0.5	70.8	28.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2"	100.0		
1.5"	100.0		
1"	100.0		
3/4"	100.0		
1/2"	100.0		
3/8"	100.0		
1/4"	100.0		
#4	100.0		
#8	99.8		
#10	99.8		
#16	99.7		
#30	99.5		
#40	99.3		
#50	99.2		
#100	67.2		
#200	28.5		

* (no specification provided)

Material Description

silty sand

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 0.2255 D_{85}= 0.2040 D_{60}= 0.1326
D_{50}= 0.1111 D_{30}= 0.0771 D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SM AASHTO= A-2-4(0)

Remarks

Source of Sample: 6 **Depth:** 5.0
Sample Number: 6-2

Date: 3/27/25

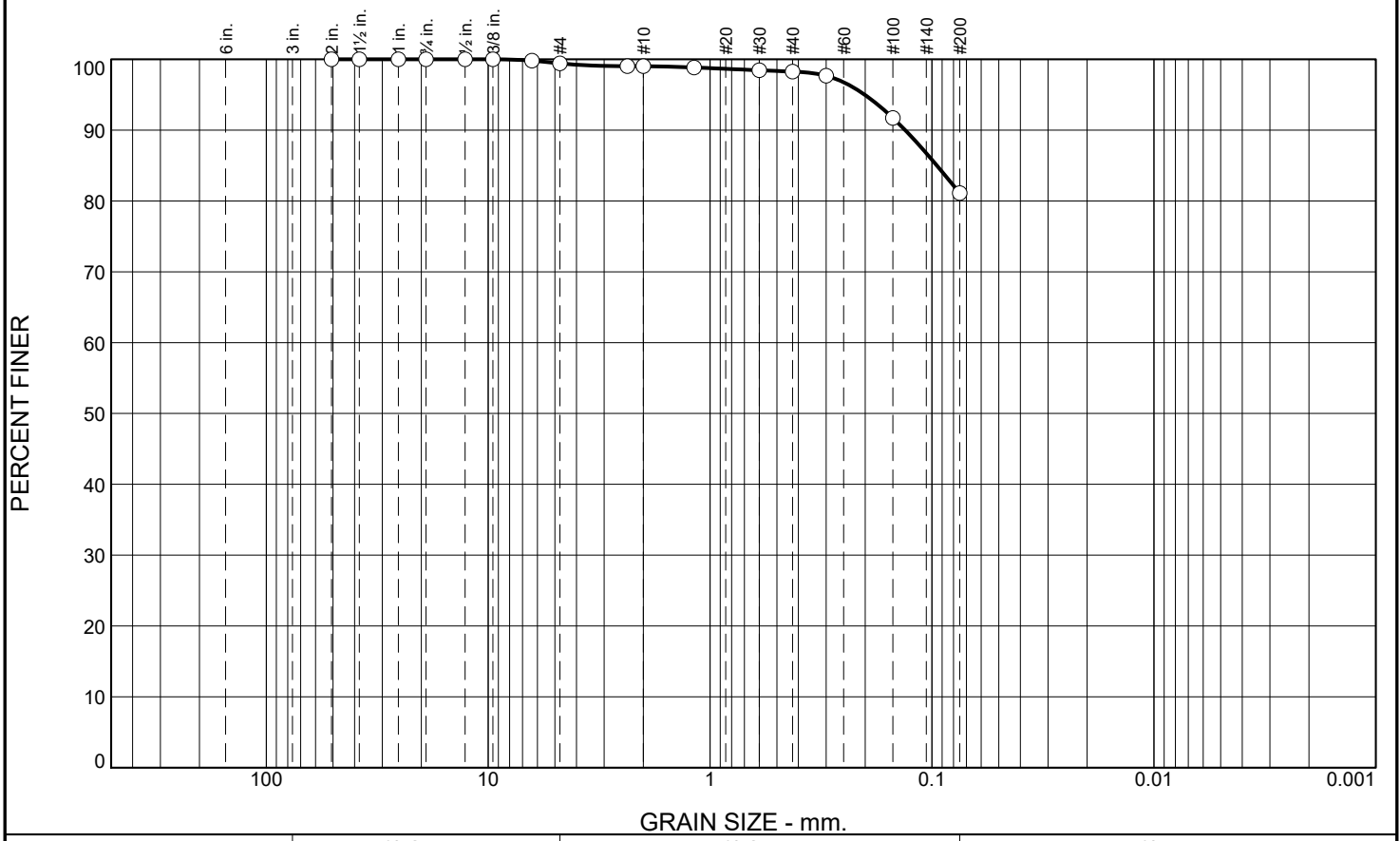
GEOTECHNICAL TESTING SERVICES
Yuma, Arizona

Client: PACIFIC ADVANCED CIVIL
Project: SAN LUIS WASTE WATER TREATMENT PLANT ADDITIONS

Project No: 24-034G **Figure** B-9

Tested By: GTS **Checked By:** GTS

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.6	0.4	0.7	17.2	81.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2"	100.0		
1.5"	100.0		
1"	100.0		
3/4"	100.0		
1/2"	100.0		
3/8"	100.0		
1/4"	99.8		
#4	99.4		
#8	99.0		
#10	99.0		
#16	98.8		
#30	98.5		
#40	98.3		
#50	97.7		
#100	91.7		
#200	81.1		

* (no specification provided)

Material Description

lean clay with sand

Atterberg Limits

PL= 14 LL= 23 PI= 9

Coefficients

D_{90}= 0.1321 D_{85}= 0.0951 D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= CL AASHTO= A-4(5)

Remarks

Source of Sample: 6 **Depth:** 10
Sample Number: 6-3

Date: 3/27/25

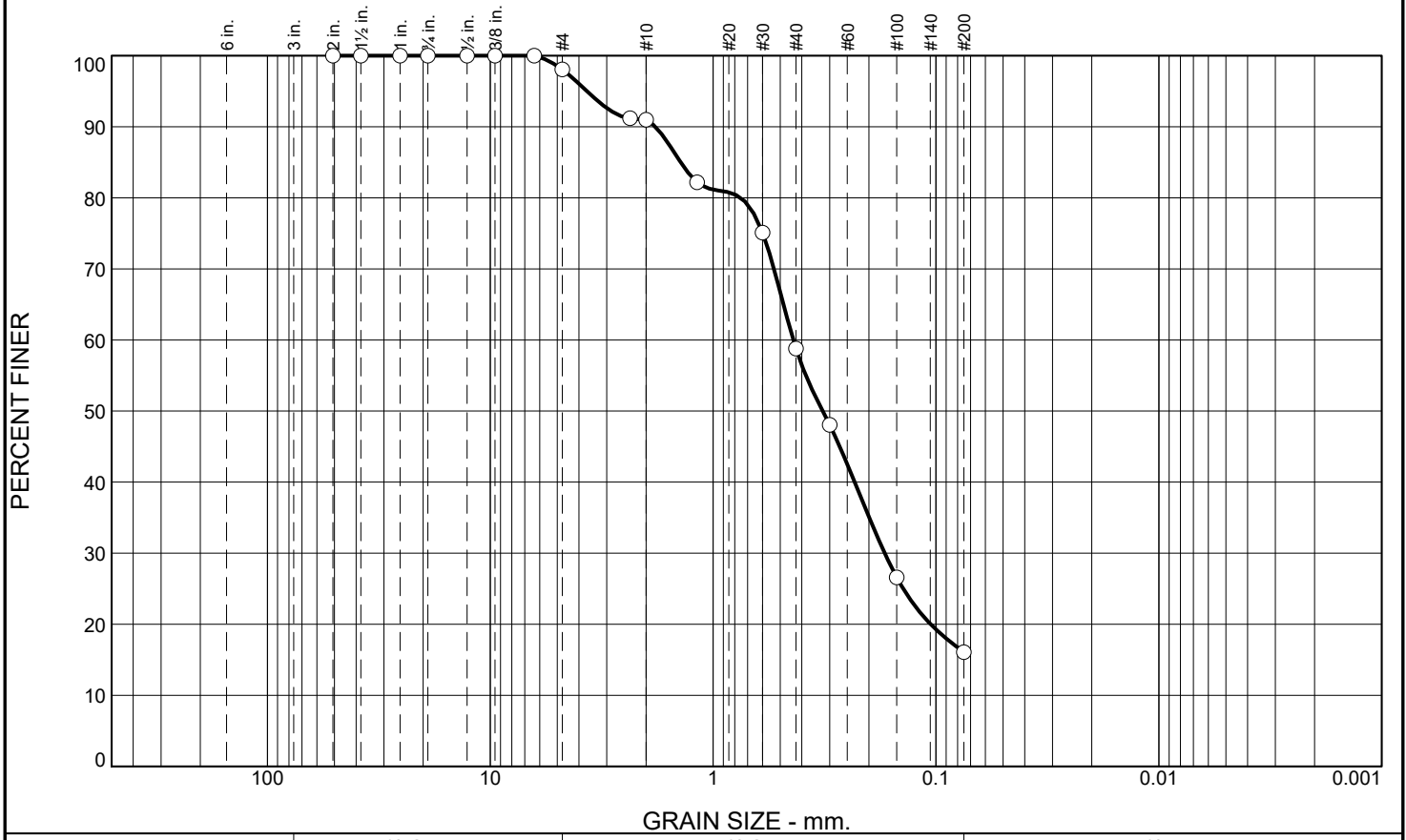
GEOTECHNICAL TESTING SERVICES
Yuma, Arizona

Client: PACIFIC ADVANCED CIVIL
Project: SAN LUIS WASTE WATER TREATMENT PLANT ADDITIONS

Project No: 24-034G **Figure** B-10

Tested By: GTS **Checked By:** GTS

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.9	7.1	32.2	42.7	16.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2"	100.0		
1.5"	100.0		
1"	100.0		
3/4"	100.0		
1/2"	100.0		
3/8"	100.0		
1/4"	100.0		
#4	98.1		
#8	91.2		
#10	91.0		
#16	82.2		
#30	75.1		
#40	58.8		
#50	48.1		
#100	26.6		
#200	16.1		

* (no specification provided)

Material Description

silty sand

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 1.8148 D_{85}= 1.3975 D_{60}= 0.4368
D_{50}= 0.3223 D_{30}= 0.1698 D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SM AASHTO= A-2-4(0)

Remarks

Source of Sample: 6 **Depth:** 15
Sample Number: 6-4

Date: 3/27/25

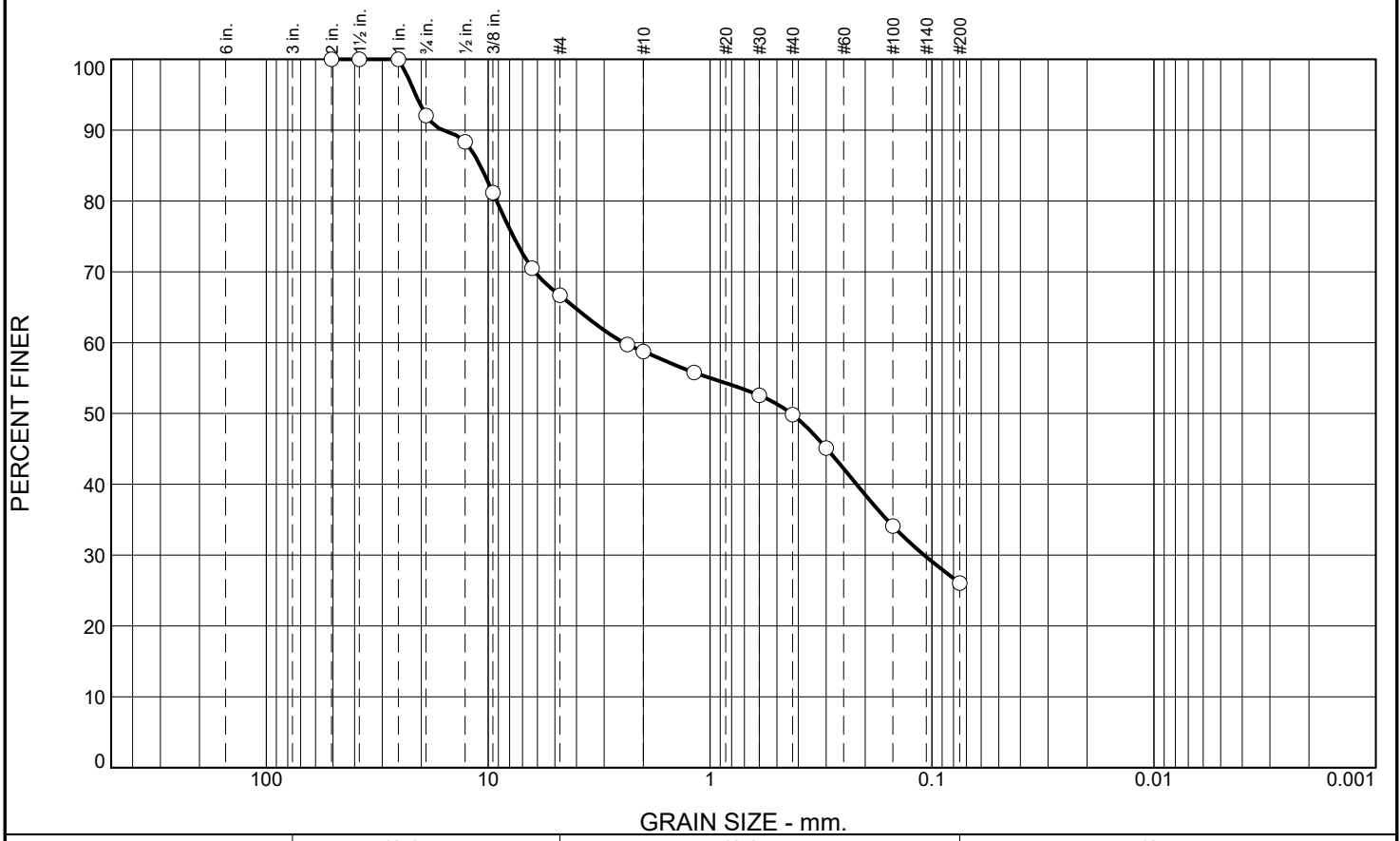
GEOTECHNICAL TESTING SERVICES
Yuma, Arizona

Client: PACIFIC ADVANCED CIVIL
Project: SAN LUIS WASTE WATER TREATMENT PLANT ADDITIONS

Project No: 24-034G **Figure** B-11

Tested By: GTS **Checked By:** GTS

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	7.9	25.4	7.9	9.0	23.8	26.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2"	100.0		
1.5"	100.0		
1"	100.0		
3/4"	92.1		
1/2"	88.4		
3/8"	81.2		
1/4"	70.5		
#4	66.7		
#8	59.7		
#10	58.8		
#16	55.8		
#30	52.6		
#40	49.8		
#50	45.1		
#100	34.1		
#200	26.0		

* (no specification provided)

Material Description

silty sand with gravel

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 15.9932 D_{85}= 10.8610 D_{60}= 2.4479
D_{50}= 0.4318 D_{30}= 0.1085 D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SM AASHTO= A-2-4(0)

Remarks

Source of Sample: 7 **Depth:** 0
Sample Number: 7-0

Date: 3/27/25

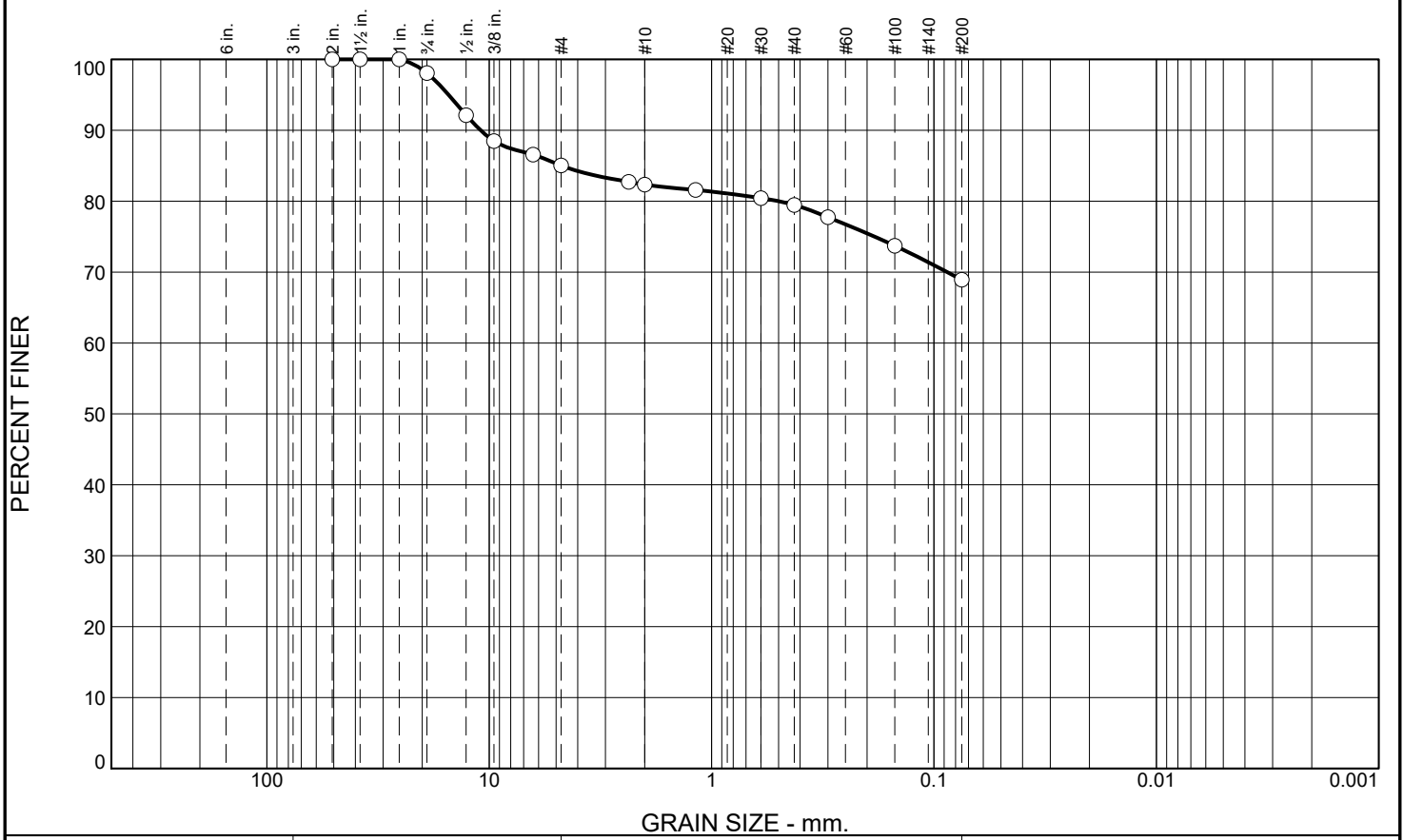
GEOTECHNICAL TESTING SERVICES
Yuma, Arizona

Client: PACIFIC ADVANCED CIVIL
Project: SAN LUIS WASTE WATER TREATMENT PLANT ADDITIONS

Project No: 24-034G **Figure** B-12

Tested By: GTS **Checked By:** GTS

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	1.9	13.1	2.7	2.8	10.6	68.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2"	100.0		
1.5"	100.0		
1"	100.0		
3/4"	98.1		
1/2"	92.1		
3/8"	88.5		
1/4"	86.6		
#4	85.0		
#8	82.7		
#10	82.3		
#16	81.6		
#30	80.4		
#40	79.5		
#50	77.7		
#100	73.7		
#200	68.9		

* (no specification provided)

Material Description

sandy lean clay with gravel

Atterberg Limits

PL= 16 LL= 30 PI= 14

Coefficients

D_{90}= 10.9416 D_{85}= 4.7183 D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= CL AASHTO= A-6(7)

Remarks

Source of Sample: 7 **Depth:** 2.5
Sample Number: 7-1

Date: 3/27/25

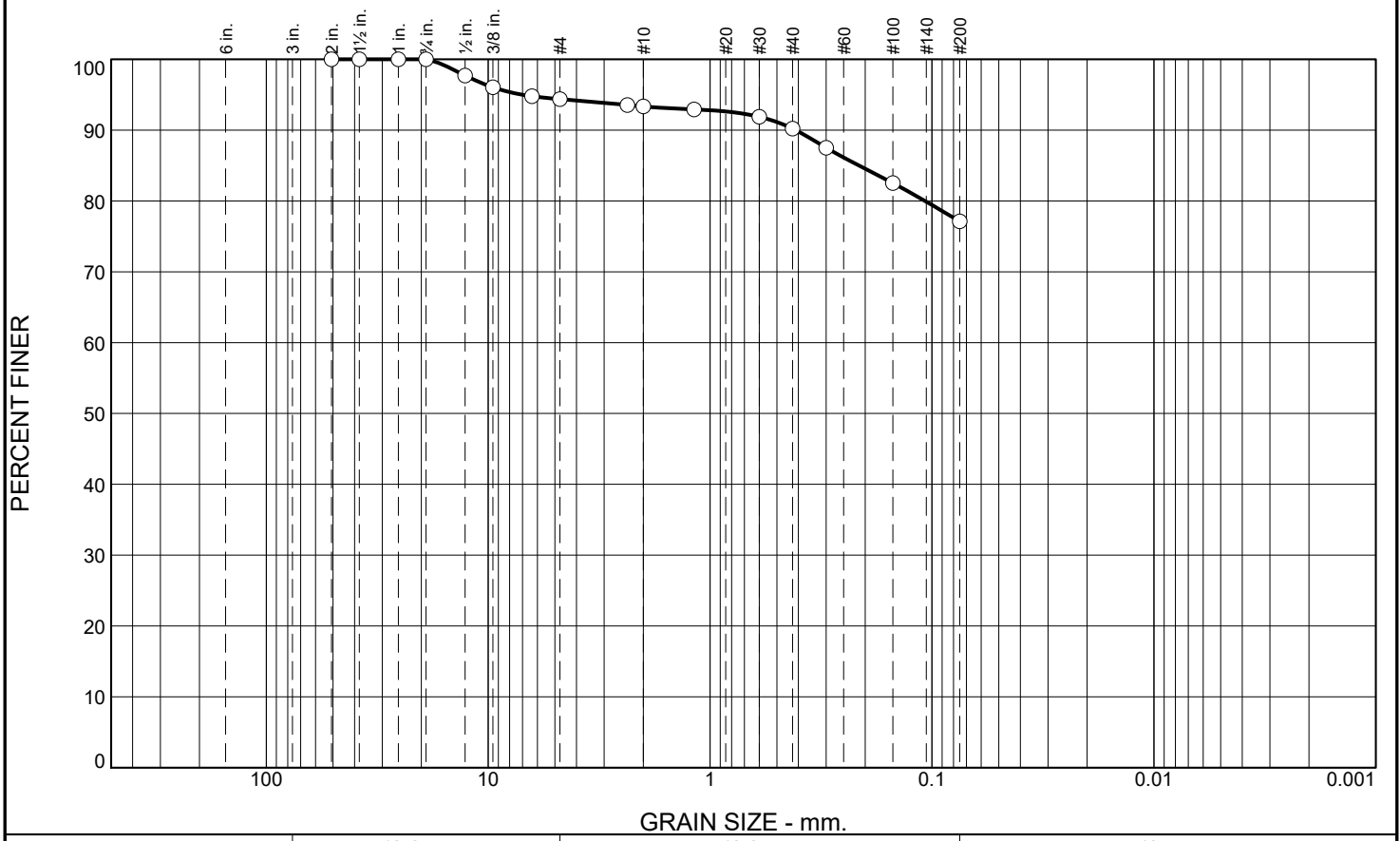
GEOTECHNICAL TESTING SERVICES
Yuma, Arizona

Client: PACIFIC ADVANCED CIVIL
Project: SAN LUIS WASTE WATER TREATMENT PLANT ADDITIONS

Project No: 24-034G **Figure** B-13

Tested By: GTS **Checked By:** GTS

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	5.6	1.1	3.1	13.1	77.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2"	100.0		
1.5"	100.0		
1"	100.0		
3/4"	100.0		
1/2"	97.7		
3/8"	96.0		
1/4"	94.8		
#4	94.4		
#8	93.6		
#10	93.3		
#16	92.9		
#30	91.9		
#40	90.2		
#50	87.5		
#100	82.5		
#200	77.1		

* (no specification provided)

Material Description

lean clay with sand

Atterberg Limits

PL= 16 LL= 30 PI= 14

Coefficients

D_{90}= 0.4114 D_{85}= 0.2133 D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= CL AASHTO= A-6(9)

Remarks

Source of Sample: 7 **Depth:** 5.0
Sample Number: 7-2

Date: 3/27/25

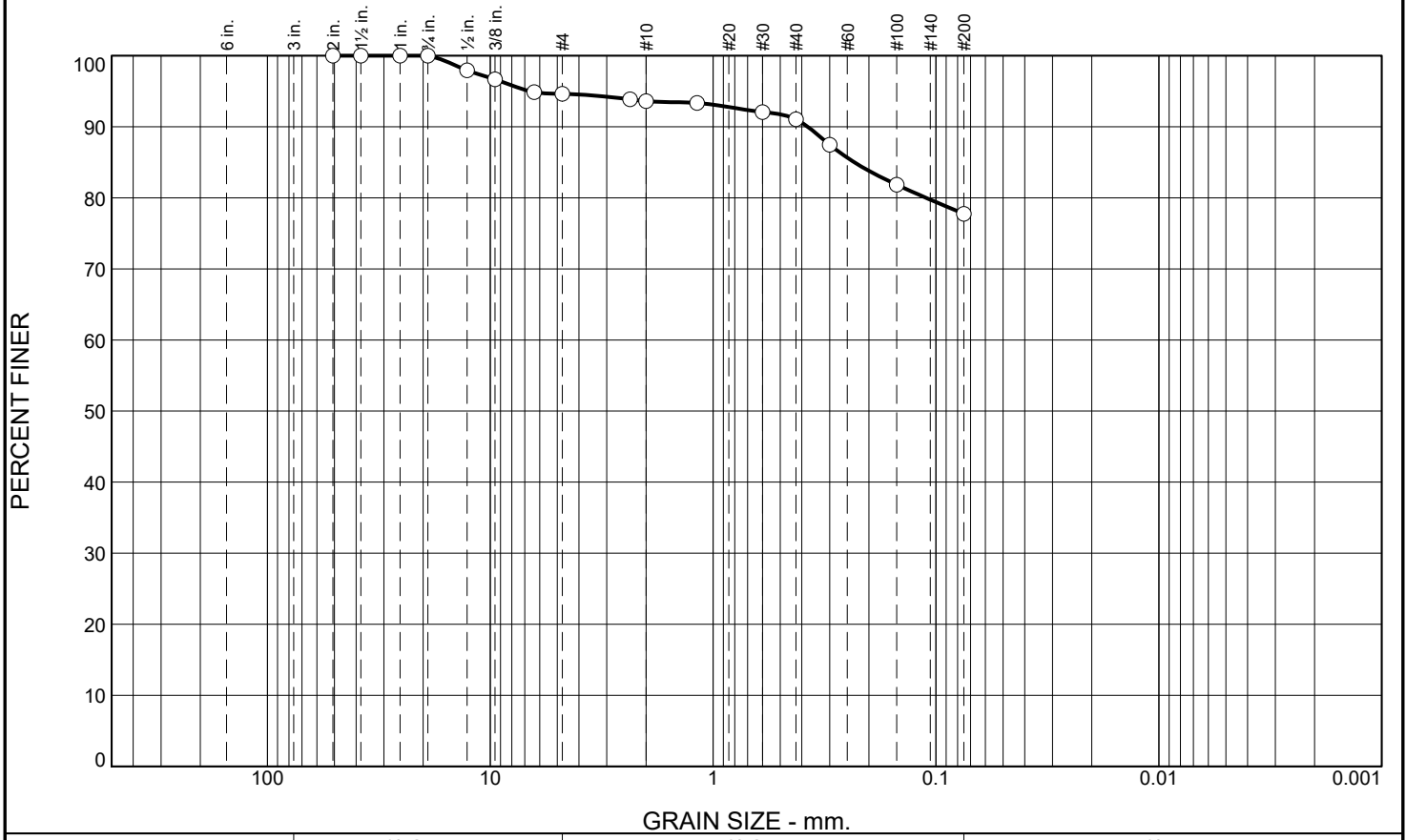
GEOTECHNICAL TESTING SERVICES
Yuma, Arizona

Client: PACIFIC ADVANCED CIVIL
Project: SAN LUIS WASTE WATER TREATMENT PLANT ADDITIONS

Project No: 24-034G **Figure** B-14

Tested By: GTS **Checked By:** GTS

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	5.4	1.0	2.5	13.3	77.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2"	100.0		
1.5"	100.0		
1"	100.0		
3/4"	100.0		
1/2"	98.0		
3/8"	96.7		
1/4"	94.9		
#4	94.6		
#8	93.9		
#10	93.6		
#16	93.4		
#30	92.1		
#40	91.1		
#50	87.5		
#100	81.8		
#200	77.8		

* (no specification provided)

Material Description

lean clay with sand

Atterberg Limits

PL= 15 LL= 29 PI= 14

Coefficients

D_{90}= 0.3763 D_{85}= 0.2324 D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= CL AASHTO= A-6(9)

Remarks

Source of Sample: 7 **Depth:** 10.0
Sample Number: 7-3

Date: 3/27/25

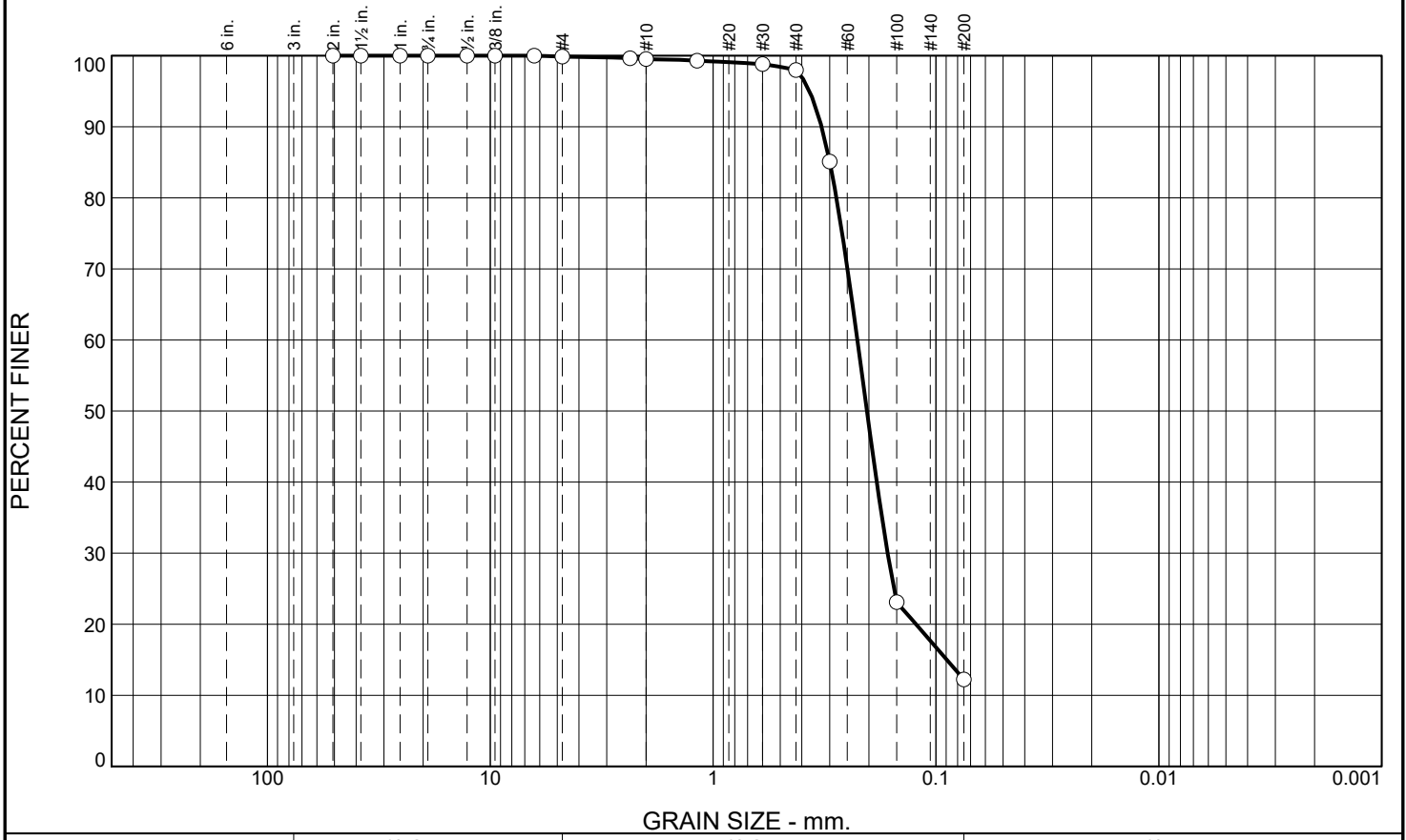
GEOTECHNICAL TESTING SERVICES
Yuma, Arizona

Client: PACIFIC ADVANCED CIVIL
Project: SAN LUIS WASTE WATER TREATMENT PLANT ADDITIONS

Project No: 24-034G **Figure** B-15

Tested By: GTS **Checked By:** GTS

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.4	1.5	85.8	12.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2"	100.0		
1.5"	100.0		
1"	100.0		
3/4"	100.0		
1/2"	100.0		
3/8"	100.0		
1/4"	100.0		
#4	99.9		
#8	99.6		
#10	99.5		
#16	99.3		
#30	98.8		
#40	98.0		
#50	85.1		
#100	23.1		
#200	12.2		

* (no specification provided)

Material Description

silty sand

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 0.3262 D_{85}= 0.2995 D_{60}= 0.2253
D_{50}= 0.2041 D_{30}= 0.1648 D_{15}= 0.0895
D_{10}= C_u= C_c=

Classification

USCS= SM AASHTO= A-2-4(0)

Remarks

Source of Sample: 7 **Depth:** 15.0
Sample Number: 7-4

Date: 3/27/25

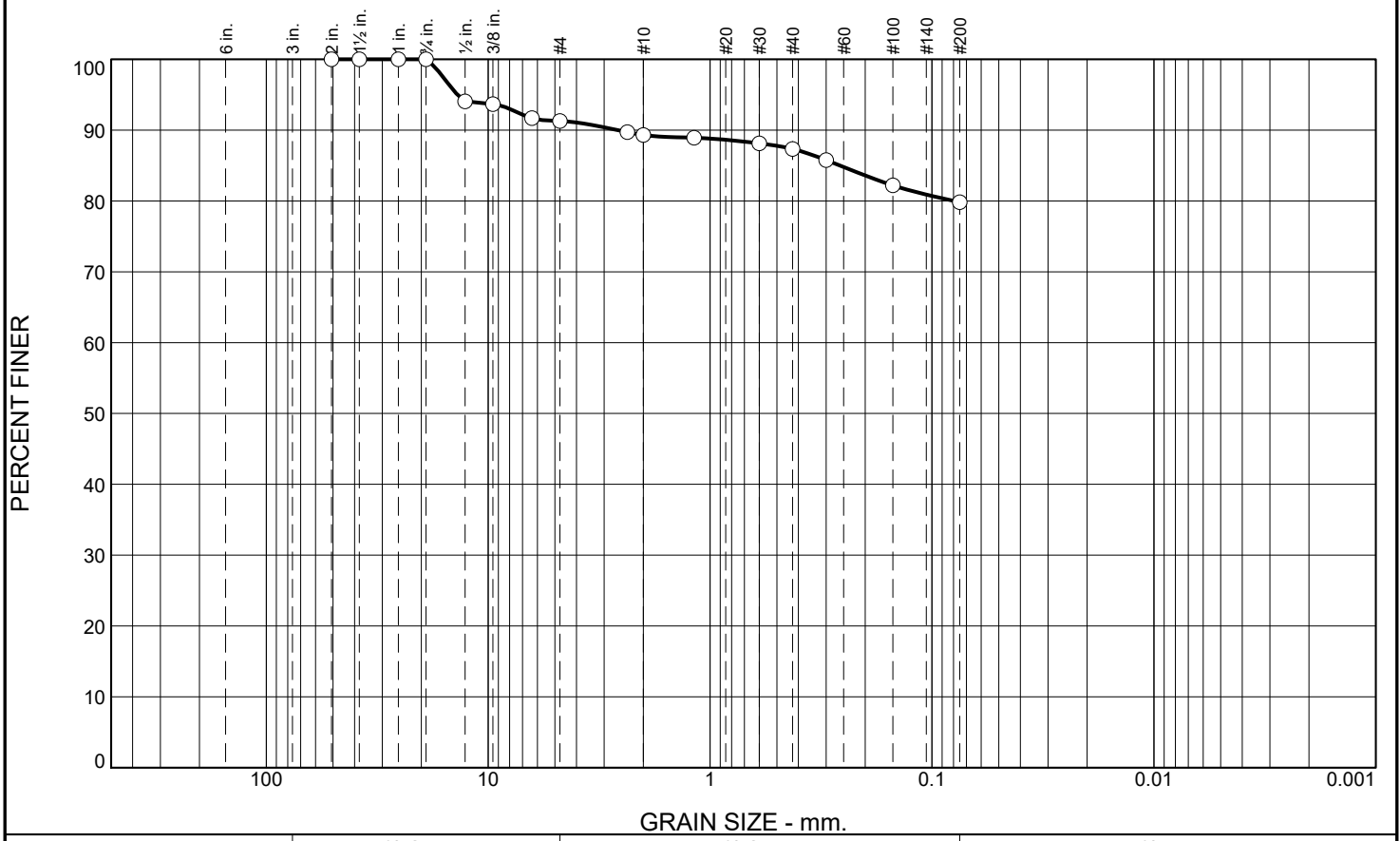
GEOTECHNICAL TESTING SERVICES
Yuma, Arizona

Client: PACIFIC ADVANCED CIVIL
Project: SAN LUIS WASTE WATER TREATMENT PLANT ADDITIONS

Project No: 24-034G **Figure** B-16

Tested By: GTS **Checked By:** GTS

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	8.7	2.0	2.0	7.5	79.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2"	100.0		
1.5"	100.0		
1"	100.0		
3/4"	100.0		
1/2"	94.1		
3/8"	93.7		
1/4"	91.7		
#4	91.3		
#8	89.7		
#10	89.3		
#16	88.9		
#30	88.1		
#40	87.3		
#50	85.8		
#100	82.2		
#200	79.8		

* (no specification provided)

Material Description

silty clay with sand

Atterberg Limits

PL= 21 LL= 27 PI= 6

Coefficients

D_{90}= 2.6103 D_{85}= 0.2599 D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= CL-ML AASHTO= A-4(3)

Remarks

Source of Sample: 8 **Depth:** 0
Sample Number: 8-0

Date: 3/27/25

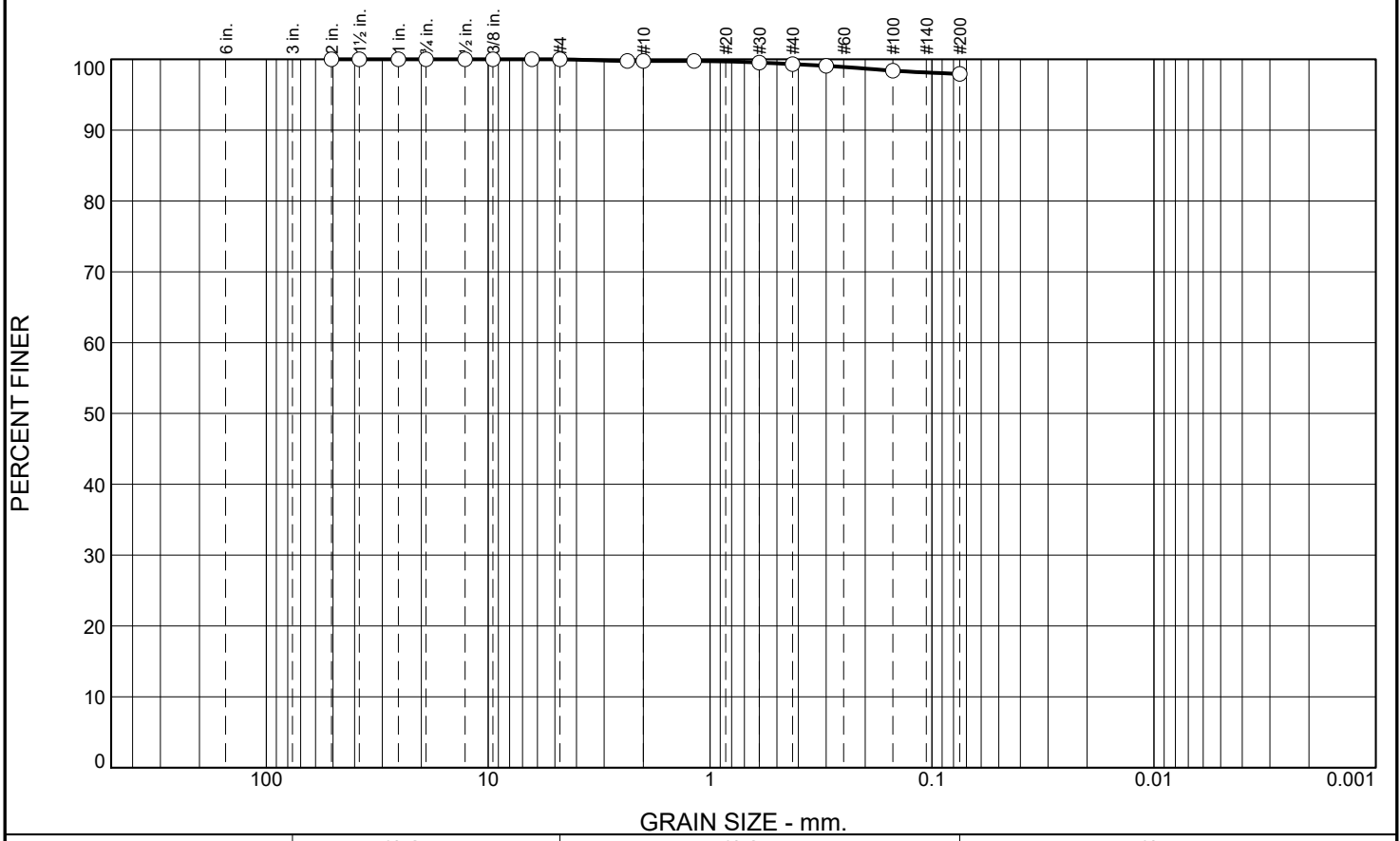
GEOTECHNICAL TESTING SERVICES
Yuma, Arizona

Client: PACIFIC ADVANCED CIVIL
Project: SAN LUIS WASTE WATER TREATMENT PLANT ADDITIONS

Project No: 24-034G **Figure** B-17

Tested By: GTS **Checked By:** GTS

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	0.5	1.4	97.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2"	100.0		
1.5"	100.0		
1"	100.0		
3/4"	100.0		
1/2"	100.0		
3/8"	100.0		
1/4"	100.0		
#4	100.0		
#8	99.8		
#10	99.8		
#16	99.8		
#30	99.5		
#40	99.3		
#50	99.1		
#100	98.4		
#200	97.9		

* (no specification provided)

Material Description

lean clay

Atterberg Limits

PL= 22 LL= 31 PI= 9

Coefficients

D_{90}= D_{85}= D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= CL AASHTO= A-4(9)

Remarks

Source of Sample: 8 **Depth:** 2.5
Sample Number: 8-1

Date: 3/27/25

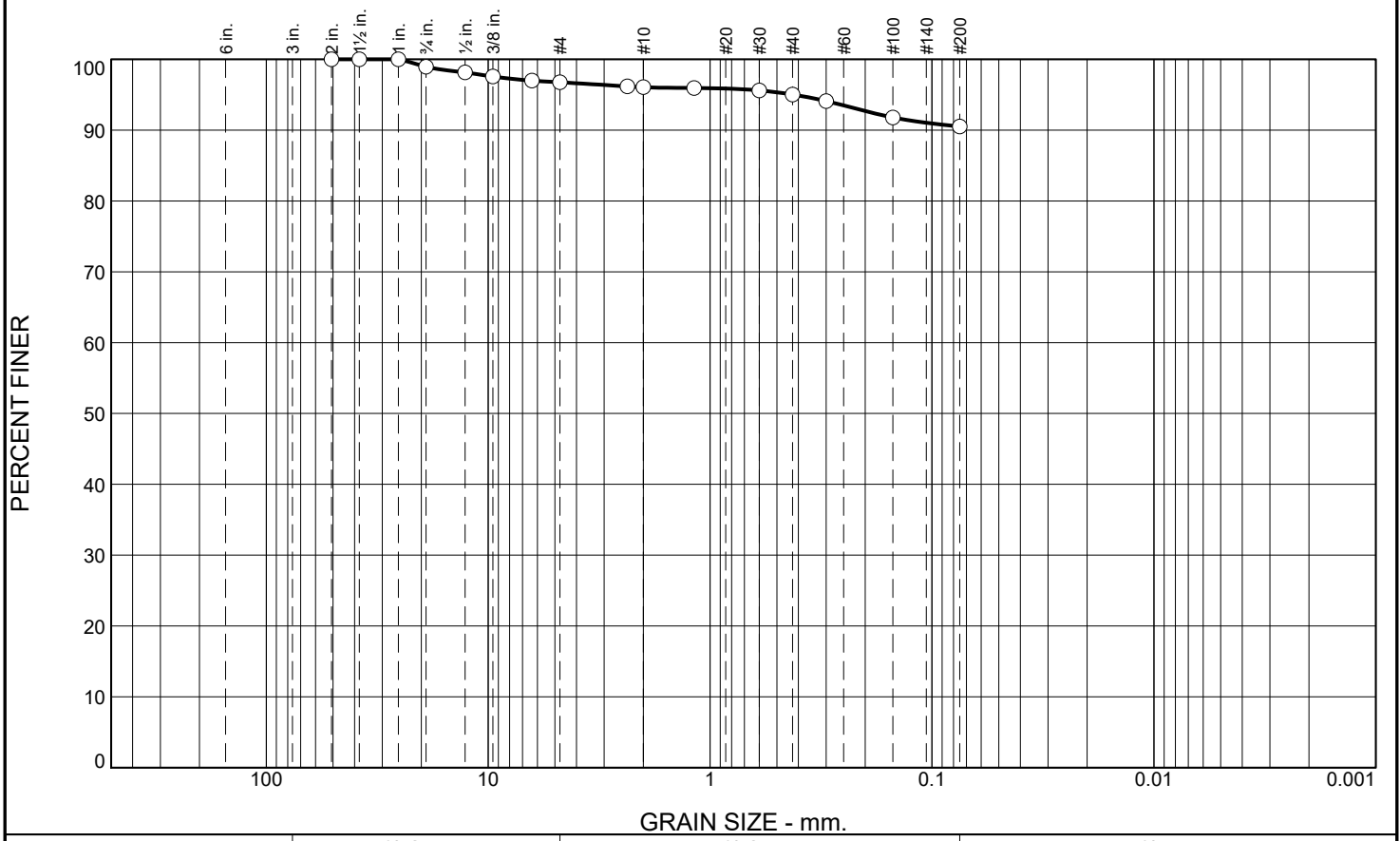
GEOTECHNICAL TESTING SERVICES
Yuma, Arizona

Client: PACIFIC ADVANCED CIVIL
Project: SAN LUIS WASTE WATER TREATMENT PLANT ADDITIONS

Project No: 24-034G **Figure** B-18

Tested By: GTS **Checked By:** GTS

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	1.0	2.2	0.7	1.1	4.5	90.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2"	100.0		
1.5"	100.0		
1"	100.0		
3/4"	99.0		
1/2"	98.1		
3/8"	97.6		
1/4"	97.0		
#4	96.8		
#8	96.2		
#10	96.1		
#16	96.0		
#30	95.6		
#40	95.0		
#50	94.1		
#100	91.8		
#200	90.5		

* (no specification provided)

Material Description

lean clay

Atterberg Limits

PL= 20 LL= 30 PI= 10

Coefficients

D_{90}= D_{85}= D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= CL AASHTO= A-4(8)

Remarks

Source of Sample: 8 **Depth:** 5.0
Sample Number: 8-2 **Date:**

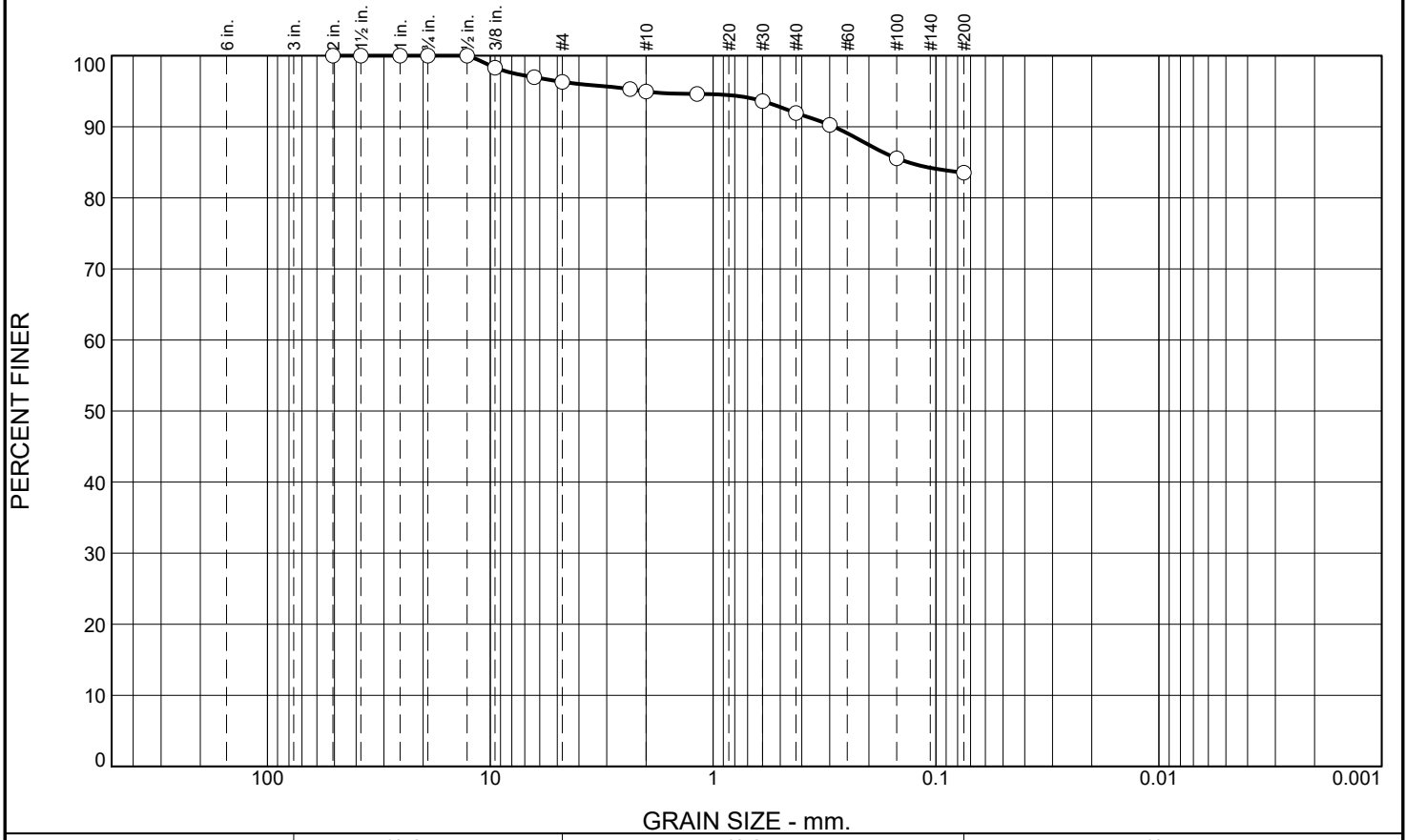
GEOTECHNICAL TESTING SERVICES
Yuma, Arizona

Client: PACIFIC ADVANCED CIVIL
Project: SAN LUIS WASTE WATER TREATMENT PLANT ADDITIONS

Project No: 24-034G **Figure** B-19

Tested By: gts **Checked By:** gts

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	3.7	1.3	3.1	8.4	83.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2"	100.0		
1.5"	100.0		
1"	100.0		
3/4"	100.0		
1/2"	100.0		
3/8"	98.3		
1/4"	97.0		
#4	96.3		
#8	95.3		
#10	95.0		
#16	94.6		
#30	93.6		
#40	91.9		
#50	90.3		
#100	85.6		
#200	83.5		

* (no specification provided)

Material Description

lean clay with sand

Atterberg Limits

PL= 18 LL= 31 PI= 13

Coefficients

D_{90}= 0.2870 D_{85}= 0.1336 D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= CL AASHTO= A-6(10)

Remarks

Source of Sample: 8 **Depth:** 7.5'
Sample Number: 8-3 **Date:**

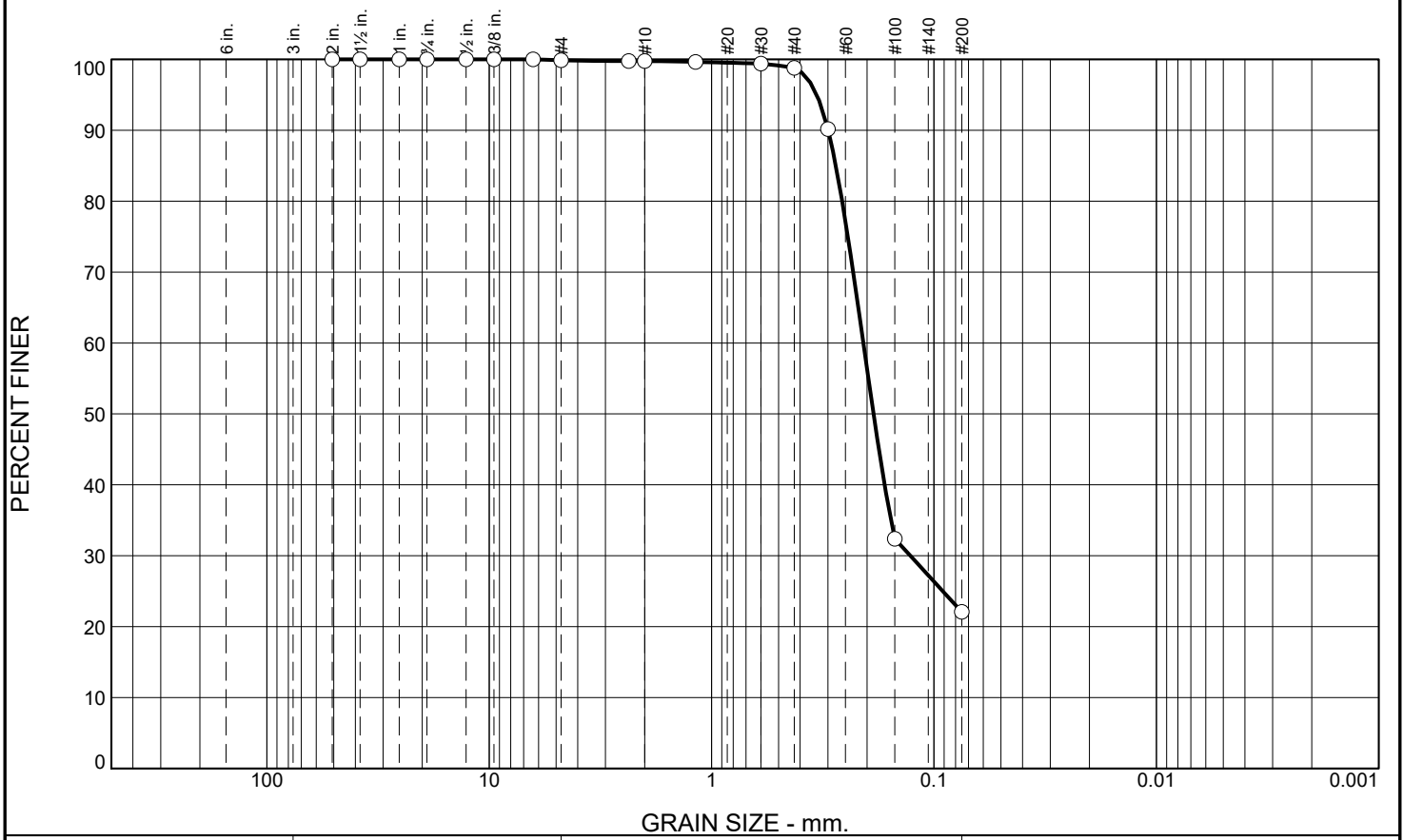
GEOTECHNICAL TESTING SERVICES
Yuma, Arizona

Client: PACIFIC ADVANCED CIVIL
Project: SAN LUIS WASTE WATER TREATMENT PLANT ADDITIONS

Project No: 24-034G **Figure** B-20

Tested By: gts **Checked By:** gts

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.1	1.0	76.7	22.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2"	100.0		
1.5"	100.0		
1"	100.0		
3/4"	100.0		
1/2"	100.0		
3/8"	100.0		
1/4"	100.0		
#4	99.9		
#8	99.8		
#10	99.8		
#16	99.6		
#30	99.4		
#40	98.8		
#50	90.2		
#100	32.4		
#200	22.1		

* (no specification provided)

Material Description

silty sand

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 0.2991 D_{85}= 0.2763 D_{60}= 0.2077
D_{50}= 0.1870 D_{30}= 0.1278 D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SM AASHTO= A-2-4(0)

Remarks

Source of Sample: 8 **Depth:** 10
Sample Number: 8-4 **Date:**

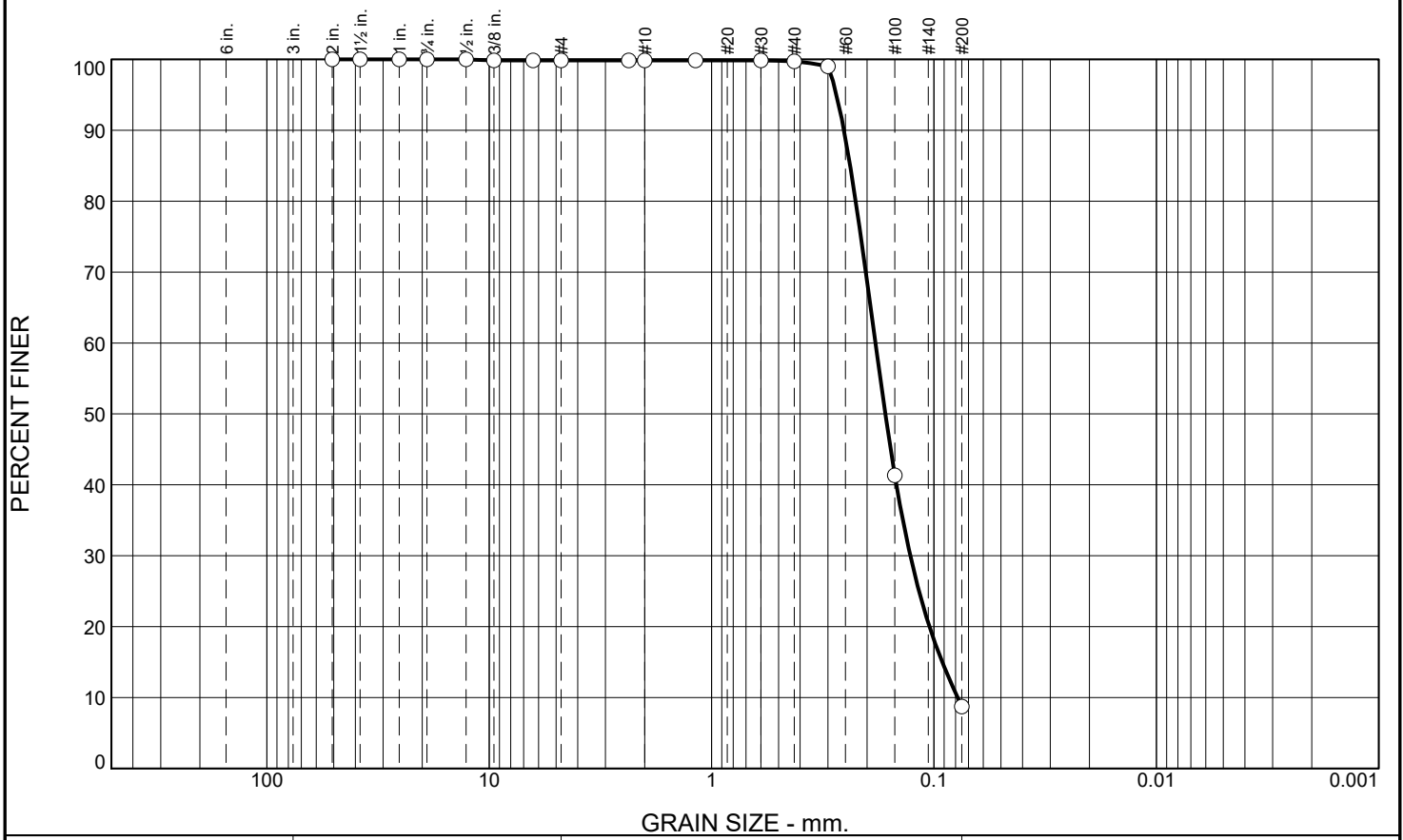
GEOTECHNICAL TESTING SERVICES
Yuma, Arizona

Client: PACIFIC ADVANCED CIVIL
Project: SAN LUIS WASTE WATER TREATMENT PLANT ADDITIONS

Project No: 24-034G **Figure** B-21

Tested By: GTS **Checked By:** GTS

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.0	0.2	91.0	8.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2"	100.0		
1.5"	100.0		
1"	100.0		
3/4"	100.0		
1/2"	100.0		
3/8"	99.9		
1/4"	99.9		
#4	99.9		
#8	99.9		
#10	99.9		
#16	99.9		
#30	99.9		
#40	99.7		
#50	99.0		
#100	41.3		
#200	8.7		

* (no specification provided)

Material Description

poorly graded sand with silt

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 0.2539 D_{85}= 0.2382 D_{60}= 0.1833
D_{50}= 0.1654 D_{30}= 0.1279 D_{15}= 0.0918
D_{10}= 0.0783 C_u= 2.34 C_c= 1.14

Classification

USCS= SP-SM AASHTO= A-3

Remarks

Source of Sample: 8 **Depth:** 15
Sample Number: 8-5 **Date:**

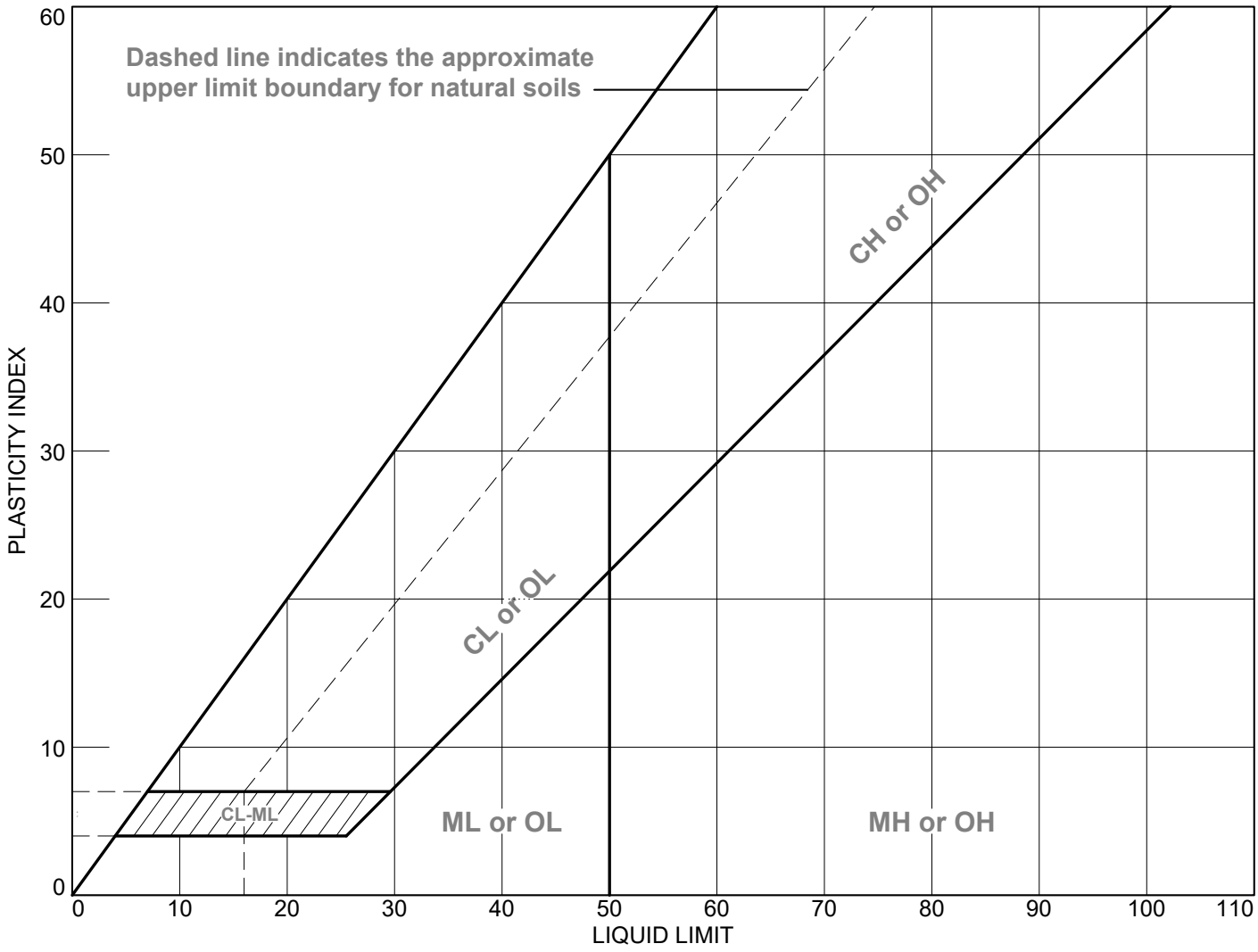
GEOTECHNICAL TESTING SERVICES
Yuma, Arizona

Client: PACIFIC ADVANCED CIVIL
Project: SAN LUIS WASTE WATER TREATMENT PLANT ADDITIONS

Project No: 24-034G **Figure** B-22

Tested By: GTS **Checked By:** GTS

LIQUID AND PLASTIC LIMITS TEST REPORT



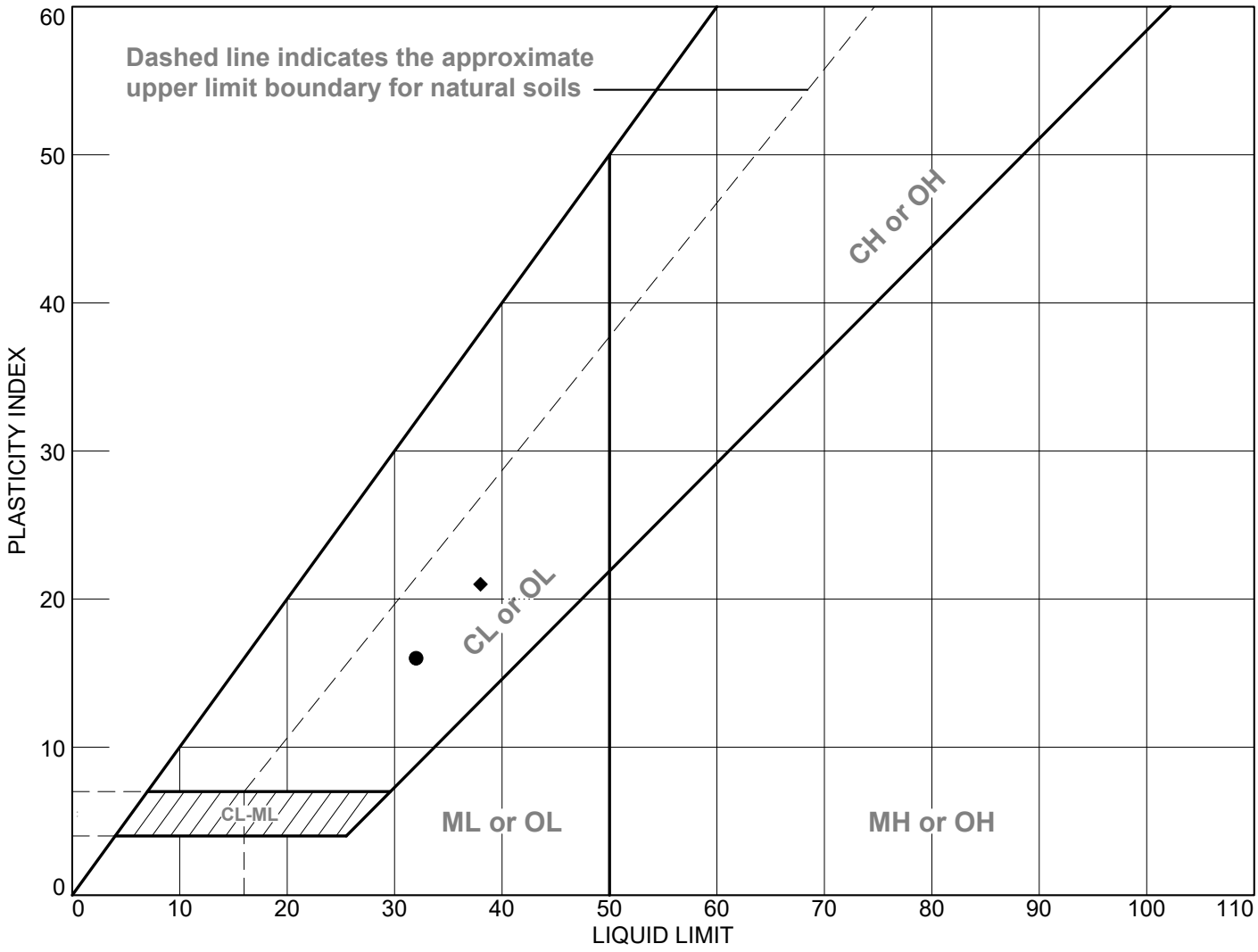
SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	1	1-0	0	1.6	NP	NV	NP	SM
■	1	1-1	3.0	2.6	NP	NV	NP	SM

GEOTECHNICAL TESTING SERVICES
Yuma, Arizona

Client: PACIFIC ADVANCED CIVIL
Project: SAN LUIS WASTE WATER TREATMENT PLANT ADDITIONS
Project No.: 24-034G **Figure** B-23

Tested By: GTS **Checked By:** GTS

LIQUID AND PLASTIC LIMITS TEST REPORT



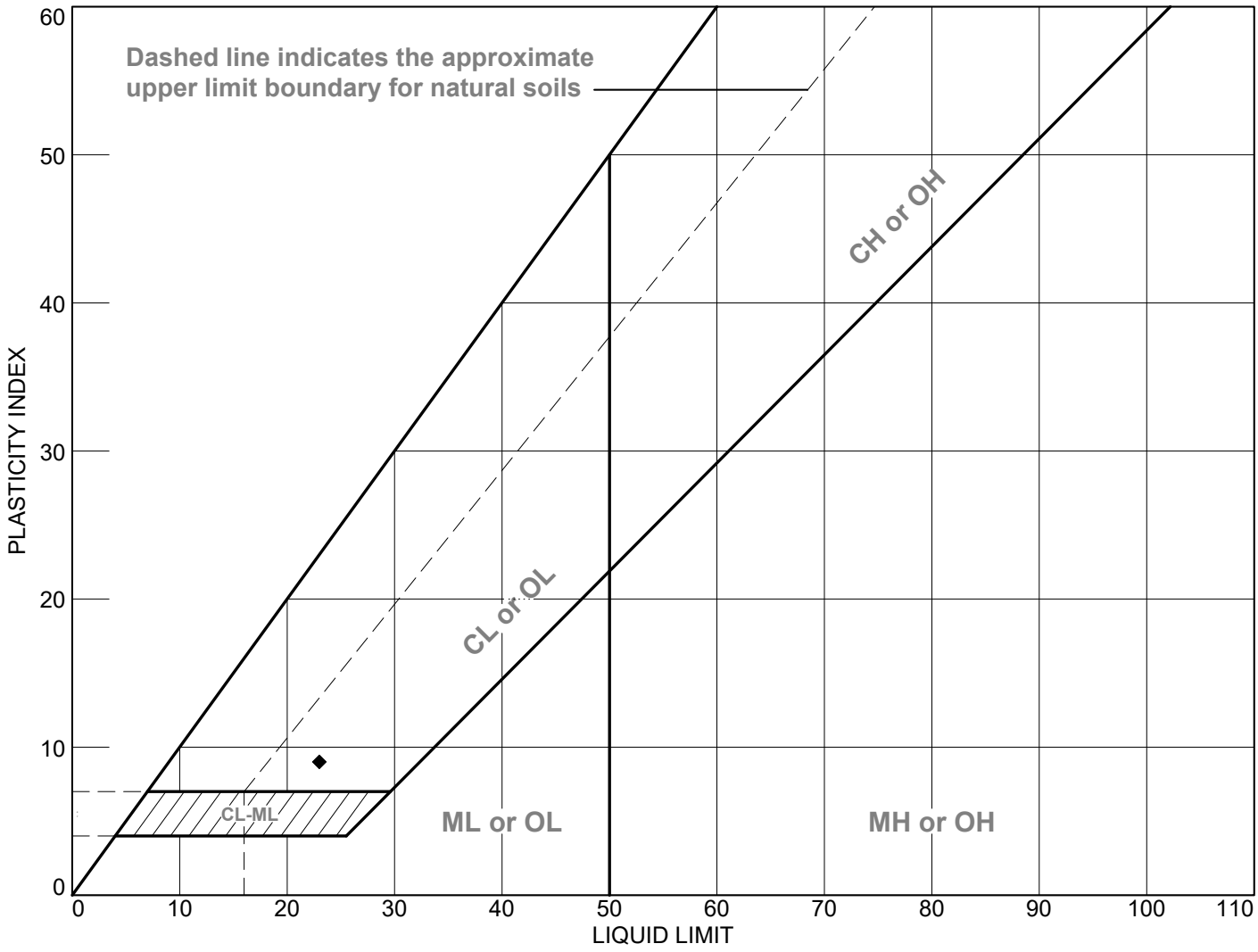
SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	2	2-1	2.5	9.5	16	32	16	SC
■	2	2-2	5.0	14.3	NP	NV	NP	SM
▲	2	2-3	10	19.5	NP	NV	NP	ML
◆	2	2-4	15	21.5	17	38	21	CL

GEOTECHNICAL TESTING SERVICES
Yuma, Arizona

Client: PACIFIC ADVANCED CIVIL
Project: SAN LUIS WASTE WATER TREATMENT PLANT ADDITIONS
Project No.: 24-034G **Figure** B-24

Tested By: GTS **Checked By:** GTS

LIQUID AND PLASTIC LIMITS TEST REPORT



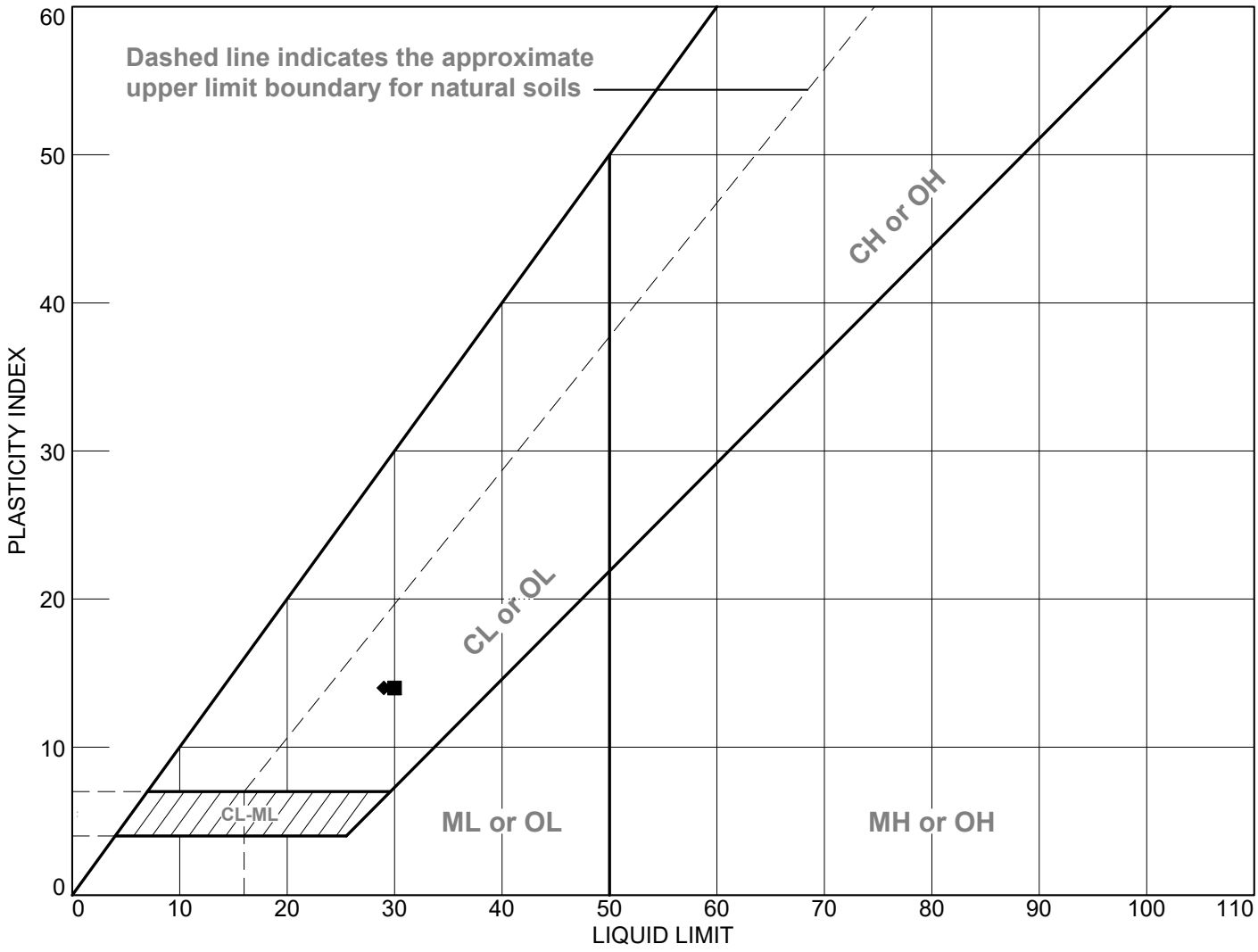
SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	6	6-0	0	1.3	NP	NV	NP	SM
■	6	6-1	2.5	2.8	NP	NV	NP	SM
▲	6	6-2	5.0	2.5	NP	NV	NP	SM
◆	6	6-3	10	14.6	14	23	9	CL
▼	6	6-4	15	19.9	NP	NV	NP	SM

GEOTECHNICAL TESTING SERVICES
Yuma, Arizona

Client: PACIFIC ADVANCED CIVIL
Project: SAN LUIS WASTE WATER TREATMENT PLANT ADDITIONS
Project No.: 24-034G **Figure** B-25

Tested By: GTS **Checked By:** GTS

LIQUID AND PLASTIC LIMITS TEST REPORT



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	7	7-0	0	2.2	NP	NV	NP	SM
■	7	7-1	2.5	9.3	16	30	14	CL
▲	7	7-2	5.0	13.5	16	30	14	CL
◆	7	7-3	10.0	14.6	15	29	14	CL
▼	7	7-4	15.0	2.3	NP	NV	NP	SM

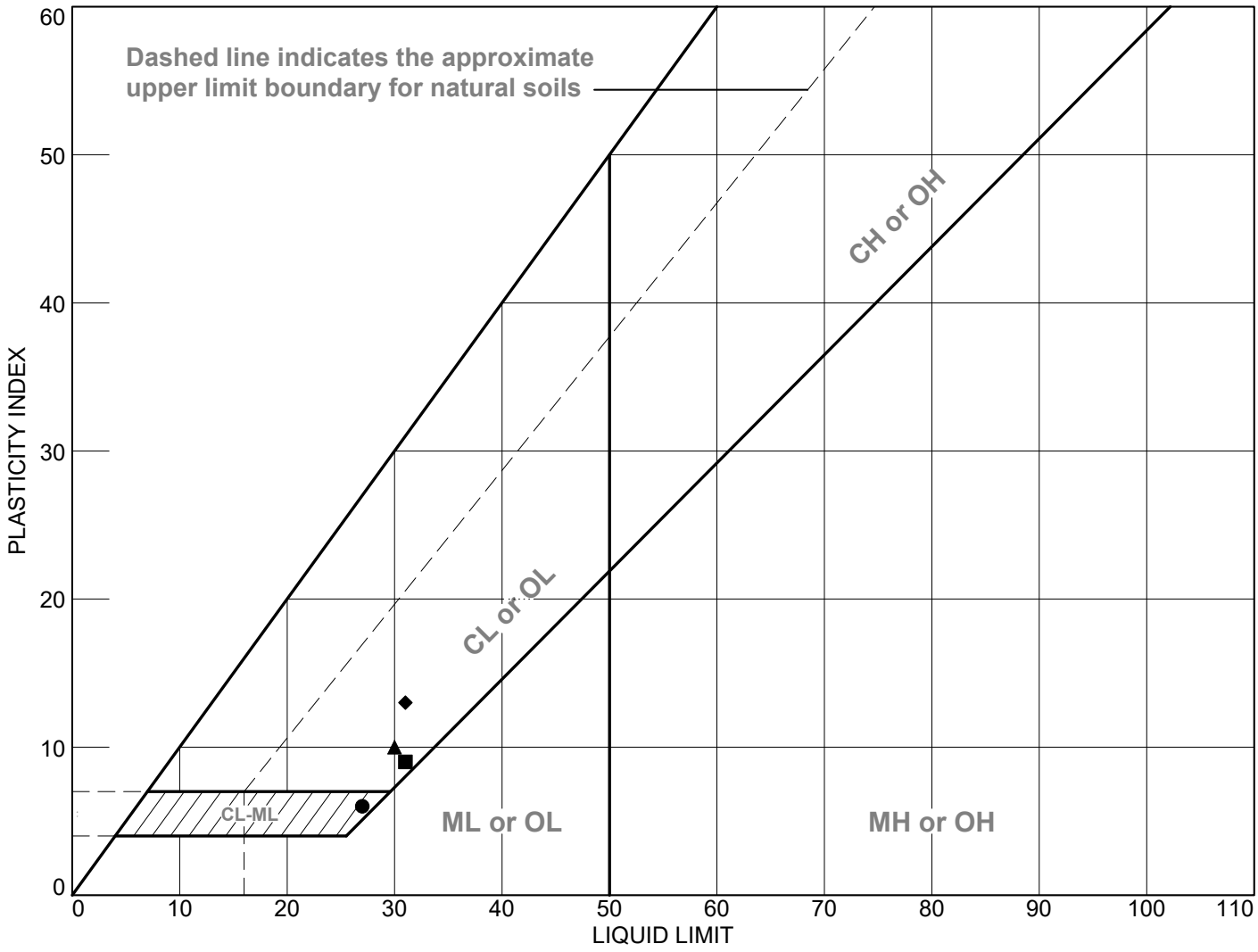
GEOTECHNICAL TESTING SERVICES
Yuma, Arizona

Client: PACIFIC ADVANCED CIVIL
Project: SAN LUIS WASTE WATER TREATMENT PLANT ADDITIONS

Project No.: 24-034G **Figure** B-26

Tested By: GTS **Checked By:** GTS

LIQUID AND PLASTIC LIMITS TEST REPORT



SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	8	8-0	0	1.8	21	27	6	CL-ML
■	8	8-1	2.5	3.5	22	31	9	CL
▲	8	8-2	5.0	7.9	20	30	10	CL
◆	8	8-3	7.5'	11.7	18	31	13	CL
▼	8	8-4	10	3.1	NP	NV	NP	SM

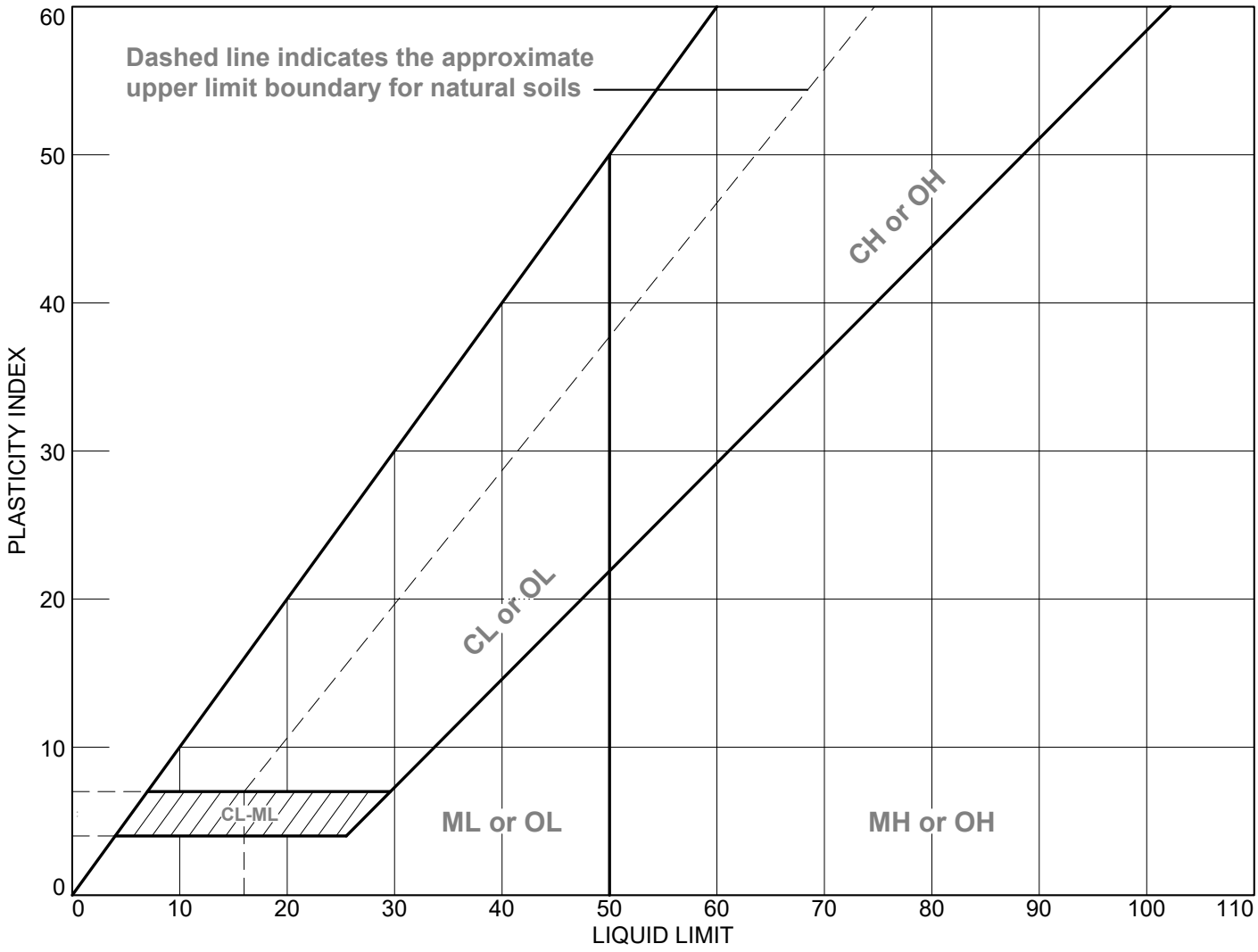
GEOTECHNICAL TESTING SERVICES
Yuma, Arizona

Client: PACIFIC ADVANCED CIVIL
Project: SAN LUIS WASTE WATER TREATMENT PLANT ADDITIONS

Project No.: 24-034G **Figure** B-27

Tested By: ● GTS ■ GTS ▲ gts ◆ gts ▼ GTS **Checked By:** GTS

LIQUID AND PLASTIC LIMITS TEST REPORT



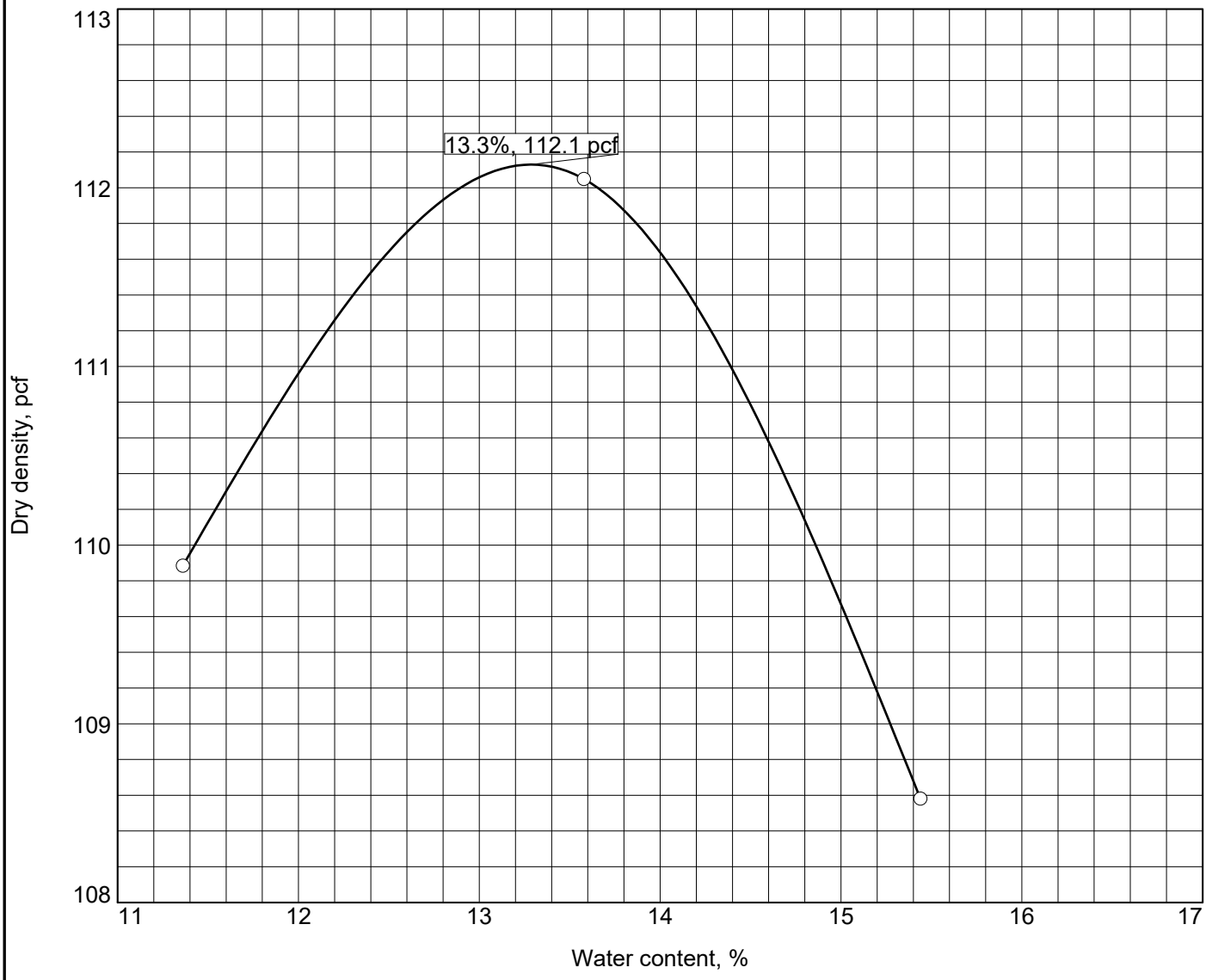
SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	8	8-5	15	1.6	NP	NV	NP	SP-SM

GEOTECHNICAL TESTING SERVICES
Yuma, Arizona

Client: PACIFIC ADVANCED CIVIL
Project: SAN LUIS WASTE WATER TREATMENT PLANT ADDITIONS
Project No.: 24-034G **Figure** B-28

Tested By: GTS **Checked By:** GTS

COMPACTION TEST REPORT



Test specification: ASTM D 698-12 Method A Standard

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > #4	% < No.200
	USCS	AASHTO						
5.0	SM	A-2-4(0)	2.5		NV	NP	0.0	28.5

TEST RESULTS	MATERIAL DESCRIPTION
Maximum dry density = 112.1 pcf Optimum moisture = 13.3 %	silty sand

Project No. 24-034G **Client:** PACIFIC ADVANCED CIVIL

Project: SAN LUIS WASTE WATER TREATMENT PLANT ADDITIONS

○ **Source of Sample:** 6 **Sample Number:** 6-2

Remarks:

GEOTECHNICAL TESTING SERVICES

Yuma, Arizona

Figure

Geotechnical Testing Services, Inc. 1044 East 21st Street Yuma, Az. 85365
Materials Testing Laboratory Phone (928) 329-4695

July 14th, 202

Pacific Advanced Civil Engineering, Inc.
8723 E Via De Commercio, #A-204
Scottsdale, Arizona 85258

Attention: Mr. Duong Do

Reference: San Luis West WWTP Improvements – Report #24-03G Addendum #1
101 Cesar Chavez Boulevard
San Luis, Arizona 85349

Dear Mr. Do:

The following is additional information that will be part of above referenced Geotechnical Report.

Asphalt Vehicle Parking Pavement

The following steps need to be followed within any pavement area.

A. Subgrade

The areas to receive asphalt pavement should be free of all vegetation and debris per Section 5.1 of the referenced Geotechnical Report. The top 12 inches of native soil should be scarified and moisture condition to +/- 2% of optimum. The soil should then be compacted to 95% of ASTM D-698. The moisture content of the subgrade should be maintained prior to the aggregate base coarse placement.

B. Asphalt Pavement Section

Light Traffic Areas (light vehicle parking lots)
Use 3 inches of asphalt over 6-inches of aggregate base coarse.

Heavy Traffic Areas (Driveways)
Use 3 inches of asphalt over 8-inches of aggregate base coarse.

Note:

1. The asphalt will meet the current Yuma County Standards Specifications for a ¾" mix and compacted to 95% of ASTM D-1559. The aggregate base coarse will meet the current Yuma County Standard Specifications and must be compacted to 95% per ASTM D-698.
2. For areas subject to high dynamic loads, (driveways, aprons, or trash enclosure areas), use 6 inches of **4,000 psi** concrete over six inches of aggregate base, over 12-inches of compacted native soil. Compact the ABC to 95%, the subgrade to 95% and moisture condition per ASTM D-698.

Corrosion

Soils samples were taken and tested for water soluble sulfates, pH and resistivity in the soil. These soils exhibit moderate potential for soluble sulfate per ACI 3.8, Table 4.3.1. Therefore, any concrete placed must use a type II/V cement with a water-cement ratio of 0.45 and a minimum strength of 4,500psi per ACI 318 Table 4.3.1. The resistivity values were between 4,700-8,100 ohm-cm and the Ph between 9.0 - 10.0. These values indicate low to moderate corrosive potential per ADOT standards.

ADOT Guidelines Section 501-3.05 (A)	
Ph	
Metal Pipe	6.0 – 10.0
Aluminum Pipe	6.0 – 9.0
Concrete or Plastic Pipe	6.0 – 12.0
Resistivity	
Metal Pipe	Not less than 2,000 ohm-cm

Slopes and Cut Areas

A. Temporary Slopes/Cuts

For the excavation of utility trenches, temporary vertical cuts to a maximum depth of four (4) feet may be constructed in the natural soil however, due to possibility of non-cohesive characteristics of the on-site soil, temporary shoring measures will be required. Any temporary cuts beyond the above height mentioned, all trenches and cuts should be shored or further laid back following a 3:1 (horizontal; vertical) slope ratio and should not exceed a total height of fifteen (15) feet. Local safety measures should be enforced, and the contractor should follow the recommendation in The Construction Standards for Excavations by the Arizona Division of Occupational Safety & Health.

B. Temporary Shoring System

Due to the granular and non-cohesive characteristics of the on-site soil, a temporary shoring system may be required for deeper excavation, or whenever there is instability of the soil being excavated. Whenever the shoring systems are utilized, they should be designed by the Structural Engineer. Surcharge loads due to nearby structures or other live loads should be incorporated in the design of the shoring system.

Table 1

Seismic Design Coefficients

Parameter	Value
Site Class	D
Mapped Spectral Acceleration – Short Period Ss(g)	0.737
Mapped Spectral Acceleration – 1 Sec. Period, S1(g)	0.304
Site Coefficient – Short Period, Fa	1.21
MCE2 Spectral Response Acceleration-Short Period, SMS(g)	1.19
Design Spectral Response Acceleration – Short Period, SDS(g)	0.595
PGA	0.306
PGAm	0.396
F pga	1.294
Ie	1.0
Cv	1.169

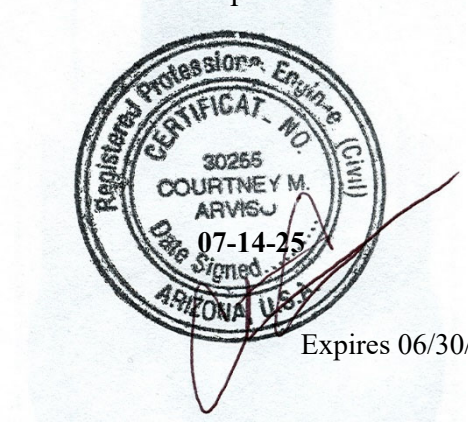
Calculations using USGS program ASCE/SEI: 7-16
Site coordinates estimated from Google Earth: 32.493794; 114.797252, Risk Category II

All other information in the above referenced Geotechnical Report will remain the same.

Sincerely,

Geotechnical **T**esting **S**ervices**, I**nc.

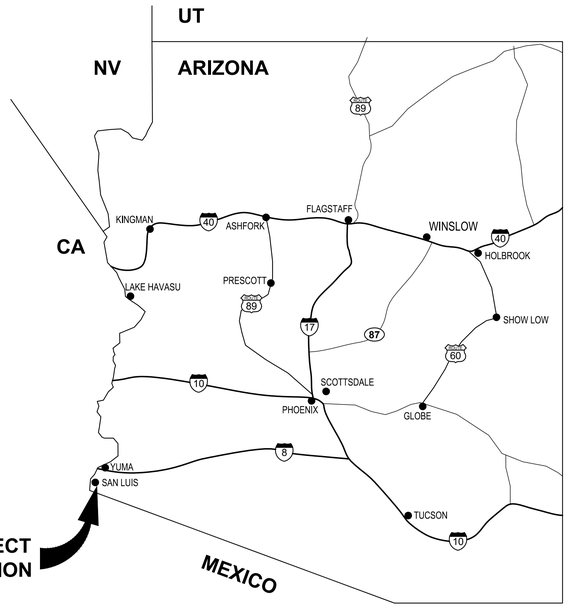
Courtney M. Arviso P.E.



Expires 06/30/26

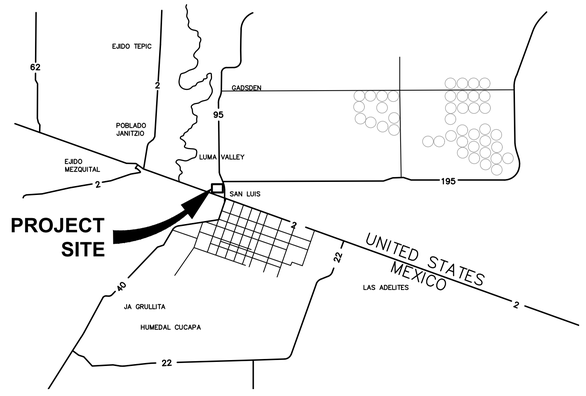
CITY OF SAN LUIS
YUMA COUNTY, ARIZONA
LIFT STATION 300 INFLUENT SEWER FORCE MAIN UPGRADES

100% ISSUED FOR BID



LOCATION MAP
N.T.S.

CITY OF SAN LUIS, AZ INC. 1979
CITY OF SAN LUIS ARIZONA



VICINITY MAP
N.T.S.

CONSULTANTS:

ENGINEER OF RECORD

PACIFIC ADVANCED CIVIL ENGINEERING (PACE)
8723 E. VIA de COMMERICO, SUITE A-204
SCOTTSDALE, AZ 85258
BUSINESS LICENSE NO. 1006013
(480) 991-3595
CONTACT: DUONG DO, PE

GEOTECH

GEOTECHNICAL TESTING SERVICES, GTSI
1044 E. 21ST STREET
YUMA,AZ 85365
CONTACT: COURTNEY M. ARVISO, P.E.
(928) 329-4695

SURVEYOR

DAHL, ROBINS & ASSOCIATES, INC.
1560 S. 5TH AVENUE
YUMA, AZ 85364
CONTACT: KEVIN A. DAHL, R.L.S.
(928) 819-0825

MAYOR:	NIEVES RIEDEL
VICE MAYOR:	TADEO AZAEL DE LA HOYA
CITY COUNCIL:	LUIS E. CABRERA MARIA CECILIA CRUZ ESTEBAN C. ROSALES LIZETH SERVIN JAVIER VARGAS
ACTING CITY MANAGER:	JENNY TORRES
PUBLIC WORKS DIRECTOR:	EULOGIO VERA

FINAL DESIGN APPROVAL:

BY: _____ DATE: 12/19/25
PUBLIC WORKS DIRECTOR

THE CITY APPROVES THESE PLANS FOR CONCEPT ONLY AND IS NOT LIABLE FOR ERRORS OR OMISSIONS

RECORD DRAWING:

THESE RECORD DRAWINGS HAVE BEEN PREPARED BASED ON INFORMATION PROVIDED BY THE CONSTRUCTION CONTRACTOR. THE ENGINEER HAS INSPECTED THE COMPLETED FACILITIES AND CERTIFIES THAT THEY ARE A SUBSTANTIALLY ACCURATE PRESENTATION OF THE LAYOUT AND CONDITION OF THE CONSTRUCTED PROJECT.

NAME _____ (SEAL)
REGISTRATION NO. _____ DATE _____
REVD. BY: _____
FIELD ENGINEERING

SHEET INDEX

DWG NO	SHEET NO	SHEET TITLE
GENERAL - FM		
1	G1.0	TITLE SHEET
2	G2.0	GENERAL NOTES AND ABBREVIATIONS
3	G3.0	LAND TITLE SURVEY - REFERENCE
4	G3.1	LAND TITLE SURVEY - REFERENCE
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6	C1.0	FORCE MAIN INDEX SHEET
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8	C2.1	FORCE MAIN PLAN & PROFILE
9	C2.2	FORCE MAIN PLAN & PROFILE
10	C2.3	FORCE MAIN PLAN & PROFILE
11	C3.0	CIVIL DETAILS
12	C3.1	CIVIL DETAILS

CALL TWO WORKING DAYS BEFORE YOU DIG
602-263-1100
1-800-STAKE-IT
(OUTSIDE MARICOPA COUNTY)

NO | BY | DATE | REVISIONS | DATE | APP.

Registered Professional Engineer (Civil) 40050 DUONG T. DO Date Signed 12/31/25 ARIZONA, U.S.A. Expires 12/31/27

PREPARED BY: DUONG DO
PROJECT ENGINEER #40050
R.C.E. NO. --
EXP. DATE
SCALE
DRAWN KV
DESIGNED NT, NE
CHECKED DD
DATE DEC 2025

TITLE: TITLE SHEET

JOB: CITY OF SAN LUIS LIFT STATION 300 INFLUENT SEWER FORCE MAIN UPGRADES AZ. SAN LUIS

PACE Advanced Water Engineering
8723 E. VIA de COMMERICO, SUITE A-204 | SCOTTSDALE, CA 85258
P: (408) 991-3595 | www.pacewater.com

SHEET G1.0
1 OF 12 SHEETS

JOB NO. B777

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100% ISSUED FOR BID

W:\B777\Engineering\B777 - 3MGD Exp\3MGD FINAL DSN\sheets\B777 - G1.0-TITLE SHEET-FM.dwg - Tab: G1.0 - by kvo on 12/12/25 at 9:24:06 AM

SCOPE OF WORK

1. THE SCOPE SHALL INCLUDE THE INSTALLATION OF A NEW 16" INFLUENT SEWER FORCE MAIN FROM LIFT STATION 300 TO THE WEST WWTP; REALIGNMENT AND MODIFICATIONS TO THE EXISTING 8" SEWER FORCE MAIN FROM THE MERRILL LIFT STATION; AND PIPING MODIFICATIONS TO THE EXISTING 12" INFLUENT SEWER FORCE MAIN.
2. THE SCOPE SHALL INCLUDE ALL PIPING, VALVES, FITTINGS, AND APPURTENANCES NECESSARY FOR THE COMPLETION AND OPERATION OF THE FORCE MAIN PER THE CONTRACT DOCUMENTS.

GENERAL NOTES

1. ALL WORK ON THIS PROJECT SHALL BE PERFORMED IN ACCORDANCE WITH 1. THESE PLANS AND SPECIFICATIONS; 2. 2016 CITY OF SAN LUIS SUPPLEMENT TO THE 2015 MAG UNIFORM STANDARD SPECIFICATIONS AND DETAILS FOR PUBLIC WORKS CONSTRUCTION; 3. THE LATEST EDITION OF THE MAG UNIFORM STANDARD SPECIFICATIONS AND DETAILS FOR PUBLIC WORKS CONSTRUCTION; 4. THE CITY OF YUMA CONSTRUCTION STANDARD DETAIL DRAWINGS - 2019 EDITION. IN THE EVENT OF CONFLICT, THE MOST STRINGENT SHALL GOVERN. THE PERFORMANCE AND COMPLETION OF ALL WORK MUST MEET THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.
2. ALL SITE GRADING, BACKFILL MATERIALS, PLACEMENT AND COMPACTION SHALL COMPLY WITH GEOTECHNICAL EVALUATION PREPARED BY GEOTECHNICAL TESTING SERVICES, INC., DATED 06/12/2025 AND SUPPLEMENTAL ADDENDUM 1, DATED 7/14/2025.
3. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH UNITED STATES ENVIRONMENTAL PROTECTION AGENCY STANDARDS AND POLICIES FOR WASTEWATER SYSTEMS AND CURRENT SUPPLEMENTS THERETO.
4. HORIZONTAL DATUM IS NAD 83 (2007) ARIZONA STATE PLANE GRID COORDINATE SYSTEM EAST ZONE. VERTICAL DATUM IS NAVD 88.
5. THE CONTRACTOR SHALL LOCATE EXISTING SURVEY MARKERS OR MONUMENTS. ANY SURVEY MARKERS/MONUMENTS DISTURBED OR DAMAGED DURING CONSTRUCTION SHALL BE REPLACED IN KIND BY A REGISTERED LAND SURVEYOR AND SHALL BE INCIDENTAL TO THE OTHER PAY ITEMS.
6. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL MATERIALS, EQUIPMENT, AND PERSONNEL REQUIRED FOR CONSTRUCTION OF A FULLY FUNCTIONAL SEWER SYSTEM IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS.
7. THE CONTRACTOR SHALL VERIFY THAT ALL NECESSARY PERMITS HAVE BEEN OBTAINED PRIOR TO CONSTRUCTION.
8. ANY WORK PERFORMED WITHOUT THE APPROVAL OF THE ENGINEER AND/OR ALL WORK AND MATERIAL NOT IN CONFORMANCE WITH THE SPECIFICATIONS IS SUBJECT TO REMOVAL AND REPLACEMENT AT THE CONTRACTOR'S EXPENSE.
9. DEBRIS SHALL BE DISPOSED OF WITHIN APPROVED DISPOSAL FACILITIES.
10. THE CONTRACTOR SHALL PROVIDE ADEQUATE MEANS FOR CLEANING TRUCKS AND/OR OTHER EQUIPMENT FOR MUD REMOVAL PRIOR TO ENTERING PUBLIC STREETS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CLEAN STREETS, ALLEY DUST, AND TAKE WHATEVER MEASURES ARE NECESSARY TO INSURE THAT ALL ADJACENT ROADS ARE MAINTAINED IN A CLEAN, MUD AND DUST FREE CONDITION AT ALL TIMES.
11. AN APPROVED SET OF PLANS SHALL BE KEPT ON THE JOB SITE AT ALL TIMES WORK IS IN PROGRESS. DEVIATION FROM THE PLANS WILL NOT BE ALLOWED WITHOUT AN APPROVED PLAN REVISION OR AUTHORIZATION FROM THE ENGINEER.
12. THE CONTRACTOR SHALL TAKE MEASURES TO CONTROL DUST AND FUGITIVE EMISSIONS, INCLUDING BUT NOT LIMITED TO WATERING THE SITE TWICE DAILY DURING GRADING TO CONTROL DUST.
13. ALL CONSTRUCTION VEHICLES OR EQUIPMENT, MOBILE OR FIXED OPERATED, SHALL BE EQUIPPED WITH PROPERLY OPERATING AND MAINTAINED MUFFLERS IN ACCORDANCE WITH THE LOCAL NOISE ORDINANCES.
14. ALL PIPE SUPPORTS AND STEEL CASING ISOLATORS SPACING SHALL MEET PIPING MANUFACTURER'S REQUIREMENTS.
15. THE WORK AREA SHALL BE LIMITED TO THE PUBLIC RIGHT-OF-WAY, PERMANENT EASEMENTS, AND TEMPORARY CONSTRUCTION EASEMENTS AS SHOWN ON THESE PLANS FOR CONSTRUCTION OF THE PROJECT. NO TEMPORARY CONSTRUCTION EASEMENTS EXIST UNLESS INDICATED ON THE PLANS.
16. THE LOCATION OF RIGHT-OF-WAY RELATIVE TO AERIAL PHOTOS OF THE DRAWINGS MAY NOT MATCH FIELD CONDITIONS.
17. IT IS NOT THE INTENT OF THE SPECIFICATIONS TO SUPERSEDE ANY FEDERAL, STATE, OR LOCAL LAWS, REGULATIONS, AND/OR ORDINANCES, WHICH SHALL GOVERN IN ALL INSTANCES. IT IS THE CONTRACTOR'S RESPONSIBILITY TO SHOW A GOOD FAITH EFFORT AND TO PROTECT ALL EXISTING UTILITIES AND STRUCTURES AND TO ABIDE BY ALL FEDERAL, STATE AND LOCAL LAWS AND ORDINANCES IN THIS PROJECT.
18. THE CONTRACTOR SHALL TAKE APPROPRIATE STEPS TO PREVENT EROSION OF MATERIAL FROM THE WORK AREA AND DEPOSITION OF SEDIMENTS INTO WATER COURSES OR DRAINAGE SWALES. THE CONTRACTOR SHALL SUBMIT AN EROSION CONTROL PLAN AND SWPPP TO THE CITY'S REPRESENTATIVE AND ADEQ PRIOR TO THE START OF ANY EXCAVATION. ALL EROSION AND SEDIMENT CONTROL WORK SHALL BE INCIDENTAL TO THE OTHER PAY ITEMS.
19. ALL EQUIPMENT MATERIAL DEMO'D WILL BE OFFERED TO THE CITY FOR FIRST REFUSAL PRIOR TO CONTRACTOR DISPOSAL.

ENGINEER'S NOTES

1. THE ENGINEER WILL NOT BE RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, OR PROCEDURES OR FOR SAFETY PRECAUTIONS OR PROGRAMS UTILIZED IN CONNECTION WITH THE WORK, AND HE WILL NOT BE RESPONSIBLE FOR THE CONTRACTOR'S FAILURE TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
2. THE ENGINEER AND APPLICABLE AGENCY MUST APPROVE, PRIOR TO CONSTRUCTION, ANY ALTERATION OR VARIANCE FROM THESE PLANS. ANY VARIATION FROM THESE PLANS SHALL BE PROPOSED ON CONSTRUCTION FIELD PRINTS AND TRANSMITTED TO THE ENGINEER.
3. THE CONTRACTOR SHALL PROTECT AND MAINTAIN ALL EXISTING UTILITIES ON THE SITE. ANY DAMAGE TO EXISTING UTILITIES, WHETHER SHOWN OR NOT ON THE DRAWINGS SHALL BE REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE. EXISTING SURFACE FEATURES AND FENCING SHALL BE REPLACED IN KIND.
4. ANY INSPECTION BY THE CITY OR THE ENGINEER SHALL NOT IN ANY WAY RELIEVE THE CONTRACTOR FROM ANY OBLIGATION TO PERFORM THE WORK IN STRICT COMPLIANCE WITH THE APPLICABLE CODES AND AGENCY REQUIREMENTS.
5. NOTHING CONTAINED IN THE CONTRACT DOCUMENTS SHALL CREATE, NOR SHALL BE CONSTRUED TO CREATE, ANY CONTRACTUAL RELATIONSHIP BETWEEN THE ENGINEER AND THE CONTRACTOR OR ANY SUBCONTRACTOR.
6. THE CONTRACTOR SHALL MAKE NO CLAIM AGAINST THE OWNER OR THE ENGINEER REGARDING ALEGED INACCURACY OF CONSTRUCTION STAKES SET BY THE ENGINEER UNLESS ALL STAKES SET BY THE ENGINEER ARE MAINTAINED INTACT AND CAN BE VERIFIED AS TO THEIR ORIGIN. IF IN THE OPINION OF THE ENGINEER, THE STAKES ARE NOT MAINTAINED INTACT AND CANNOT BE VERIFIED AS TO THEIR ORIGIN, ANY REMEDIAL WORK REQUIRED TO CORRECT ANY ITEM OR IMPROPER CONSTRUCTION WORK IN THIS DEVELOPMENT SHALL BE PERFORMED AT THE SOLE EXPENSE OF THE RESPONSIBLE CONTRACTOR OR SUBCONTRACTOR.
7. TRAFFIC CONTROL SHALL BE MAINTAINED IN ACCORDANCE WITH CITY MUNICIPAL CODES.
8. PRIOR TO FINAL APPROVAL AND ACCEPTANCE OF THE WORK, THE CONTRACTOR WILL BE REQUIRED TO CLEAN AND REPAIR ADJACENT (OFF-PROJECT) ROADWAYS USED OR DAMAGED DURING THE COURSE OF CONSTRUCTION.
9. ANY CONSTRUCTION WATER OBTAINED FROM THE CITY WATER SOURCE MUST BE METERED. CONTACT CITY TO REQUEST A METER.

CIVIL CONSTRUCTION NOTES

1. ALL BELOW GROUND VALVES SHALL BE BURIED SERVICE TYPE OF APPROVED EQUAL.
2. ELEVATIONS AND LOCATIONS OF EXISTING STRUCTURES, PIPING, COMPONENTS, AND UTILITIES SHOWN ON THESE PLANS ARE APPROXIMATE ONLY AND ARE NOT RELIABLE FOR CONSTRUCTION PURPOSES.
3. THE CONTRACTOR IS RESPONSIBLE FOR ALL UTILITY COORDINATION AND SHALL FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO THE START OF CONSTRUCTION.
4. THE CONTRACTOR SHALL CONTACT 811 (ARIZONA811) PRIOR TO ANY CONSTRUCTION ACTIVITY. THE CONTRACTOR IS RESPONSIBLE FOR FIELD LOCATING EXISTING UTILITIES AND SERVICE LINES IN ADVANCE OF CONSTRUCTION AND FOR REPORTING UTILITY LOCATIONS IN CONFLICT WITH THE PROPOSED WORK TO THE CITY'S REPRESENTATIVE.
5. ALL YARD PIPING SHALL BE SURVEYED FOR VERTICAL AND HORIZONTAL ALIGNMENT PRIOR TO BACKFILL. ALL SURVEYING DATA SHALL BE PROVIDED TO THE ENGINEER FOR RECORD DRAWINGS.
6. ALL BURIED DUCTILE IRON PIPE SHALL BE FULLY ENCASED IN POLYETHYLENE FILM OR CORROSION PROTECTION, PER AWWA C105/A21.5, MAG STANDARDS, AND SUPPLEMENTAL STANDARDS.
7. ALL YARD PIPING SHALL BE INSTALLED WITH TRACER WIRE PER MAG STANDARD DETAILS.
8. CONTRACTOR SHALL RAISE OR LOWER ALL EXISTING MANHOLES, VALVE WELLS AND UTILITY IMPROVEMENTS TO FINISH GRADE.
9. ALL ANCHORING/FASTENING SYSTEMS SHALL BE SS 316 REGARDLESS OF LOCATION, U.N.O.
10. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR REVIEW AND APPROVAL FOR EACH EQUIPMENT ITEM PRIOR TO INSTALLATION. INSTALLATION DETAILS FOR ALL EQUIPMENT ITEMS SHALL BE PER RESPECTIVE EQUIPMENT MANUFACTURER'S SHOP DRAWINGS AND RECOMMENDED INSTALLATION REQUIREMENTS.
11. DUCTILE IRON PIPE 12" AND LESS SHALL BE PRESSURE CLASS 350. DIP PIPE GREATER THAN 12" DIAMETER SHALL BE PRESSURE CLASS 250, U.N.O. ALL UNDERGROUND DUCTILE IRON PIPE SHALL BE POLYETHYLENE WRAPPED.
12. C900 PVC PRESSURE PIPE SHALL BE CLASS 235 (DR 18).
13. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPORARY PIPING AND EQUIPMENT NEEDED FOR PROCESS ISOLATION, BYPASS, AND TRANSITION.
14. "±" INDICATES ASSUMED ELEVATION. CONTRACTOR TO FIELD VERIFY PRIOR TO CONSTRUCTION AND COORDINATE WITH ENGINEER FOR ALL DISCREPANCIES.
15. THE CONTRACTOR IS RESPONSIBLE FOR ALL TRENCHING MEANS AND METHODS. NO CONTRACT CHANGE ORDERS WILL BE ALLOWED FOR CHANGES IN TRENCH SUPPORT/PROTECTION DUE TO DIFFERING SOIL CONDITIONS.
16. ALL NEW SEWER LINE ALIGNMENTS, LATERALS, CLEAN-OUTS, AND OTHER APPURTENANCES SHALL BE SURVEYED PRIOR TO BACKFILL.
17. ALL NEW MANHOLE CENTERLINES, RIM ELEVATIONS, AND INLET/OUTLET INVERTS SHALL BE SURVEYED.
18. CONTRACTOR TO PROVIDE ALL FITTINGS AND APPURTENANCES NEEDED AT ALL POINTS OF CONNECTION.

CONSTRUCTION PHASING NOTES

1. CONTRACTOR SHALL PROVIDE A SEQUENCE OF CONSTRUCTION (MOPO) FOR APPROVAL BY BOTH THE CITY AND ENGINEER PRIOR TO BEGINNING WORK.
2. THE CONTRACTOR SHALL PROVIDE A TRAFFIC CONTROL PLAN FOR CITY APPROVAL IN CONFORMANCE WITH CITY, COUNTY, AND/OR ADOT REQUIREMENTS.
3. THE CONTRACTOR SHALL COORDINATE ALL PROCESS SHUTDOWNS WITH CITY STAFF A MINIMUM OF 72-HOURS IN ADVANCE.
4. WORK WITHIN THE BUREAU OF RECLAMATION RIGHT OF WAY CANNOT COMMENCE UNTIL USBR APPRIOVAL IS RECEIVED BY THE CITY.

UTILITY AND OWNER TELEPHONE INDEX

SAN LUIS UTILITIES DEPARTMENT (WATER DIVISION)	(928)-341-8577
ARIZONA PUBLIC SERVICE (APS) ELECTRICITY	(602) 371-7171

ABBREVIATIONS

A.B.	AGGREGATE BASE
A.C.	ASPHALT CONCRETE
AI	ANALOG INPUT
AL	AIR LINE
ALUM	ALUMINUM
APPROX	APPROXIMATELY
ARV	AIR RELEASE VALVE
AUTO	AUTOMATIC
AUX	AUXILARY
BO	BLOWOFF
BC	BEGINNING OF CURVE
BF	BLIND FLANGE
BLDG	BUILDING
BM	BEAM, BENCHMARK
BOT	BOTTOM
BVC	BEGIN VERTICAL CURVE
CFH	CUBIC FOOT PER HOUR
CFM	CUBIC FOOT PER MINUTE
CFS	CUBIC FOOT PER SECOND
CML&C	CEMENT MORTAR LINED & COATED
CML&EC	CEMENT MORTAR LINED & EPOXY COATED
CL	CHEMICAL LINE
CLR	CLEAR
CMU	CONCRETE MASONRY UNIT
CO	CLEAN OUT
CONT.	CONTINUOUS
COTG	CLEANOUT TO GRADE
CONST	CONSTRUCTION
CPLG	COUPLING
CTR	CENTER
CV	CHECK VALVE
DI	DIGITAL INPUT
DIA	DIAMETER
DIP	DUCTILE IRON PIPE
DTL	DETAIL
DWG	DRAWING
DL	DRAIN LINE
E	ELECTRICAL POWER
EA	EACH
EC	END OF CURVE
ECC	ECCENTRIC
EF	EACH FACE
EL.	ELEVATION
ELEC	ELECTRIC
ELECT	ELECTRICAL
EP	EDGE OF PAVEMENT
EQUIP	EQUIPMENT
E.W.	EACH WAY
EXH	EXHAUST
EXIST.	EXISTING
FC	FLEXIBLE COUPLING
FF	FINISHED FLOOR
FG	FINISHED GROUND
FH	FIRE HYDRANT
FL	FLOW LINE
FLEX	FLEXIBLE
FLG	FLANGE
FM	FORCE MAIN
FLG'D	FLANGED
FPS	FEET PER SECOND
FT	FEET
FUT	FUTURE
G	GAS
GA	GAUGE
GAL	GALLONS
GALV	GALVANIZED
GB	GRADE BREAK
GPD	GALLONS PER DAY
GPM	GALLONS PER MINUTE
H/A	HAND-AUTOMATIC
HDPE	HIGH DENSITY POLYETHYLENE
H.H.W.L.	HIGH HIGH WATER LEVEL
HOA	HAND-OFF-AUTOMATIC
HORIZ.	HORIZONTAL
HP	HORSEPOWER
H.W.L.	HIGH WATER LEVEL
HZ	HERTZ
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
IN	INCHES
INFL	INFLUENT
IRR	IRRIGATION
INV.	INVERT
JB	JUNCTION BOX
LBS	POUNDS
LBS/D	POUNDS PER DAY
LF	LINEAR FEET
LI	LEVEL INDICATOR
LP	LOW PRESSURE
LT	LEVEL TRANSDUCER
L.W.L.	LOW WATER LEVEL
MAX.	MAXIMUM
MCC	MOTOR CONTROL CENTER
MECH	MECHANICAL
MFR	MANUFACTURER
MGD	MILLION GALLONS PER DAY
MG/L	MILLIGRAMS PER LITER
MH	MANHOLE OR MAINTENANCE HOLE
MIN	MINIMUM, MINUTE
MISC	MISCELLANEOUS
MJ	MECHANICAL JOINT
N/C	NORMALLY CLOSED
N/O	NORMALLY OPEN
NTS	NOT TO SCALE
NWL	NORMAL WATER LEVEL
NPSH	NET POSITIVE SECTION HEAD
OC	ON CENTER
OD	OUTSIDE DIAMETER
PCC	PORTLAND CEMENT CONCRETE
PG	PRESSURE GAUGE
PI	POINT OF INTERSECTION
P/L	PROPERTY LINE
PLC	PROGRAMMABLE LOGIC CONTROLLER
PRC	POINT OF REVERSE CURVE
PRV	PRESSURE REGULATING (REDUCING) VALVE
PS	PRESSURE SWITCH, PIPE SUPPORT
P.S.	PUMP STATION
PSI	POUNDS PER SQUARE INCH
PV	PLUG VALVE
PVC	POLYVINYL CHLORIDE
R	RADIUS
REF	REFERENCE
REQ'D	REQUIRED
RPM	REVOLUTIONS PER MINUTE
RW	RECLAIMED WATER / ONSITE PROCESS WATER
S	SLOPE
SCH.	SCHEDULE
SECT.	SECTION
SF.	SQUARE FEET
SHT.	SHEET
SL	SLUDGE LINE
SPEC.	SPECIFICATION
SQ.	SQUARE
S. STL.	STAINLESS STEEL
ST	STREET
STA	STATION
T&B	TOP AND BOTTOM
TB	THRUST BLOCK
TC	TOP OF CURB
TBA	TO BE ABANDONED
TDH	TOTAL DYNAMIC HEAD
TEL	TELEPHONE
TG	TOP OF GRATE
TOS	TOP OF SLAB
TSP	TWISTED SHIELDED PAIR
TYP	TYPICAL
U.N.O.	UNLESS NOTED OTHERWISE
VAC	VOLTS ALTERNATING CURRENT
VERT.	VERTICAL
W	WATER
WAS	WASTE ACTIVATED SLUDGE
W.S.	WATER SURFACE
WWF	WELDED WIRE FABRIC

LEGEND

- B / M6 — DETAIL OR SECTION LETTER / SHEET WHERE DETAIL IS SHOWN
- PROPERTY BOUNDARY
- SETBACK
- EXISTING ACCESS ROAD
- EXISTING 5' CONTOUR (1555)
- EXISTING 1' CONTOUR
- PROPOSED 5' CONTOUR (1555)
- PROPOSED 1' CONTOUR
- PROPOSED FUTURE 5' CONTOUR
- EXISTING FENCE (X — X)
- PROPOSED CHAINLINK FENCE (X — X)
- EXISTING UNDERGROUND ELECTRICAL CONDUIT
- PROPOSED UNDERGROUND ELECTRICAL CONDUIT
- EXISTING WATER LINE
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- XX — CONSTRUCTION NOTES
- 1 — EQUIPMENT CALL OUT (SEE EQUIPMENT LIST)
- EXISTING CONCRETE
- CONCRETE
- NATURE SOIL / BACKFILL
- AGGREGATE BASE
- COMPACT NATIVE SOIL
- DEMO
- UNPUNCHED GRATING
- OPEN GRATING
- CONTROL PANEL
- X / XX — DETAIL LETTER / SHEET #

NO	BY	DATE	REVISIONS	DATE	APP.

Registered Professional Engineer — Duong D. Do — 40050 — Date Signed 12/31/27 — Arizona, U.S.A. — Expires 12/31/27

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PREPARED BY: DUONG DO — PROJECT ENGINEER #40050 — R.C.E. NO. — EXP. DATE — SCALE — DRAWN: KV — DESIGNED: NT, NE — CHECKED: DD — DATE: DEC 2025

TITLE: GENERAL NOTES AND ABBREVIATIONS

JOB: CITY OF SAN LUIS — LIFT STATION 300 INFLUENT SEWER FORCE MAIN UPGRADES — SAN LUIS AZ.

PACE — Advanced Water Engineering — 8723 E. VIA de COMMERCIO, SUITE A-204 | SCOTTSDALE, CA 85258 — P: (408) 991-3595 | www.pacewater.com

SHEET: G2.0 — 2 OF 12 SHEETS

JOB NO. B777

100% ISSUED FOR BID

W:\B777\Engineering\B777 - 3MGD Exp\3MGD FINAL DSN\sheets\B777-G2.0-GENERAL NOTES-FM.dwg - Tab: G2.0 - by tvoi on 12/15/25 at 8:53:28 AM

VICINITY MAP

DATE OF PREPARATION

AUGUST 2024

PARCEL AREA

1,086,239 S.F. OR 24.9366 ACRES

CURRENT ZONING

ZONING CF

BASIS OF BEARINGS

BEARINGS ARE RELATIVE TO NAD 83 ARIZONA WEST STATE PLANE COORDINATE SYSTEM AS MEASURED BY GPS KINEMATIC SURVEY AS OBSERVED CONTROL POINTS.

SURVEYOR'S NOTES

1. THE SUBJECT PROPERTY IS LOCATED WITHIN AN AREA HAVING A FLOOD ZONE A DESIGNATION.
   ZONE A – THE 1% ANNUAL CHANCE FLOOD (100–YEAR FLOOD), ALSO KNOWN AS THE BASE FLOOD, IS THE FLOOD THAT HAS A 1% CHANCE OF BEING EQUALED OR EXCEEDED IN ANY GIVEN YEAR. THE SPECIAL FLOOD HAZARD AREA IS THE AREA SUBJECT TO FLOODING BY THE 1% ANNUAL CHANCE FLOOD. AREAS OF SPECIAL FLOOD HAZARD INCLUDE ZONES A, AE, AH, AO, AR, A99, V, AND VE. THE BASE FLOOD ELEVATION IS THE WATER–SURFACE ELEVATION OF THE 1% ANNUAL CHANCE FLOOD.
   REFERENCE – FLOOD INSURANCE RATE MAP (FIRM), MAP NUMBER 04027C2135F DATED JANUARY 16, 2014, WHICH IS THE FLOOD INSURANCE RATE MAP FOR THE COMMUNITY IN WHICH THIS PROJECT IS SITUATED.
2. THE TITLE REPORT WITH A OUR NO. 91400359 ISSUED BY PIONEER TITLE AGENCY, INC AND COMMITMENT DATE JULY 22, 2024 AT 7:30 AM WAS REFERENCED DURING THE PREPARATION OF THIS ALTA SURVEY.

LEGAL DESCRIPTION

LOTS 2 AND 3, SECTION 2, AND LOT 27, SECTION 11, ALL IN TOWNSHIP 11 SOUTH, RANGE 25 WEST OF THE GILA AND SALT RIVER BASE AND MERIDIAN, YUMA COUNTY, ARIZONA;

EXCEPT ALL MINERAL DEPOSITS AS RESERVED IN THE PATENT FROM THE UNITED STATES OF AMERICA, RECORDED IN DOCUMENT NO. 2001–14799 AND IN DOCUMENT NO. 2004–39688, RECORDS OF YUMA COUNTY, ARIZONA.

SCHEDULE OF EXCEPTIONS

ESCROW/TITLE No. 91400359 SCHEDULE B

1 RESERVATIONS, RIGHTS, EASEMENTS OR OTHER MATTERS AS MAY BE SET FORTH IN THE PATENT TO SAID LAND RECORDED IN THE OFFICE OF THE COUNTY RECORDER, OR IN ACTS AUTHORIZING THE ISSUANCE THEREOF.

2 WATER RIGHTS, CLAIMS OR TITLE TO WATER, AND AGREEMENTS, COVENANTS, CONDITIONS OR RIGHTS INCIDENT THERETO, WHETHER OR NOT SHOWN BY THE PUBLIC RECORDS.

THIS EXCEPTION IS NOT LIMITED BY REASON OF THE DISCLOSURE OF ANY MATTER RELATING TO WATER RIGHTS AS MAY BE SET FORTH ELSEWHERE IN SCHEDULE B.

3 THE RIGHT OF ENTRY TO PROSPECT FOR, MINE AND REMOVE ALL MINERALS AS RESERVED IN PATENT TO SAID LAND RECORDED IN DOCUMENT NO. 2001–14799 AND IN DOCUMENT NO. 2004–39688.
(AFFECTS THE SUBJECT PROPERTY, HOWEVER, IS NOT PLOTTABLE.)

4 RIGHT–OF–WAY FOR CANALS, LATERAL AND DITCHES CONSTRUCTED BY THE AUTHORITY OF THE UNITED STATES AS SET FORTH IN INSTRUMENT RECORDED IN DOCUMENT NO. 2001–14799 AND IN DOCUMENT NO. 2004–39688.
(AFFECTS THE SUBJECT PROPERTY, HOWEVER, IS NOT PLOTTABLE.)

5 RIGHT–OF–WAY FOR BORDER PATROL, FOR A CAMERA SITE, WASTEWATER PIPELINE PURPOSES, AND TERMS AND CONDITIONS RELATING TO HAZARDOUS WASTE AS SET FORTH IN DOCUMENT NO. 2001–14799 AND IN DOCUMENT NO. 2004–39688.
(AFFECTS THE SUBJECT PROPERTY, HOWEVER, IS NOT PLOTTABLE.)

6 WASTEWATER TREATMENT PLANT GROUND LEASE UNDER THE TERMS AND CONDITIONS CONTAINED THEREIN MADE BY:

LESSOR	CITY OF SAN LUIS, ARIZONA, A MUNICIPAL CORPORATION OF THE STATE OF ARIZONA
LESSEE	SAN LUIS CIVIC IMPROVEMENT CORPORATION, A NONPROFIT CORPORATION
DATED	10–4–02
TERM EXPIRES	10–4–2042
RECORDED	11–1–02
DOCUMENT NO.	2002–31209

(NOT A SURVEY MATTER)

7 WASTEWATER TREATMENT PLANT CITY LEASE UNDER THE TERMS AND CONDITIONS CONTAINED THEREIN MADE BY:

LESSOR	SAN LUIS CIVIC IMPROVEMENT CORPORATION, A NONPROFIT CORPORATION
LESSEE	CITY OF SAN LUIS, ARIZONA, A MUNICIPAL CORPORATION OF THE STATE OF ARIZONA
DATED	10–4–02
TERM EXPIRES	10–4–2042
RECORDED	11–1–02
DOCUMENT NO.	2002–31213

(NOT A SURVEY MATTER)

8 TERMS AND CONDITIONS OF RESOLUTION NO. 454, RECORDED IN DOCUMENT NO. 2017–16631, FOR USE OF THE LEVEE ROAD.
(AFFECTS THE SUBJECT PROPERTY, HOWEVER, IS NOT PLOTTABLE.)

9 UNRECORDED LEASE UNDER THE TERMS AND CONDITIONS CONTAINED THEREIN MADE BY:

LESSOR	CITY OF SAN LUIS, AN ARIZONA MUNICIPALITY
LESSEE	ARTEMIS SUN INSTITUTIONAL SOLAR, INC., A TEXAS CORPORATION
DATED	1–30–14
TERM	UNDISCLOSED
AS DISCLOSED BY	THIRD AMENDMENT TO SITE LEASE
RECORDED	6–27–18
DOCUMENT NO.	2018–16580

AND THEREAFTER, LESSEE'S INTEREST WAS ASSIGNED TO LUIS SPEAR POINT SOLAR I, LLC, A DELAWARE LIMITED LIABILITY COMPANY BY UNRECORDED INSTRUMENT;

AND THEREAFTER, A FOURTH AMENDMENT RECORDED IN DOCUMENT NO. 2018–16581.
(NOT A SURVEY MATTER)

10 TERMS AND CONDITIONS OF CONTRACT NO. 18–07–34–L 1933 BY AND BETWEEN THE CITY OF SAN LUIS AND THE UNITED STATES DEPARTMENT OF THE INTERIOR, BUREAU OF RECLAMATION, AS SET FORTH IN DOCUMENT NO. 2022–31612.
(NOT A SURVEY MATTER)

17 EASEMENTS AND RIGHTS INCIDENT THERETO, AS SET FORTH IN INSTRUMENT:

RECORDED IN	DOCUMENT NO. 2023–21631
PURPOSE	CONSTRUCTION, OPERATION AND MAINTENANCE OF NEW UNDERGROUND FIBER–OPTIC CABLE AND APPURTENANT FACILITIES

(AFFECTS THE SUBJECT PROPERTY, HOWEVER, IS NOT PLOTTABLE.)

SURVEY CERTIFICATE

To
CITY OF SAN LUIS, ARIZONA

This is to certify that this map or plat and the survey on which it is based were made in accordance with the 2021 Minimum Standard Detail Requirements for ALTA/NSPS Land Title Surveys, jointly established and adopted by ALTA and NSPS and includes items 1, 3, 4, 8, 13 and 18 from Table A thereof.
The fieldwork was completed on 08/10/2024.

Date of Plat or Map: 08/19/2024

REGISTERED LAND SURVEYOR CERTIFICATE NO. 31018 KEVIN A. DAHL Date Signed 08/19/24 ARIZONA U.S.A.

KEVIN A. DAHL, R.L.S. 31018 STATE OF ARIZONA

FOR REFERENCE ONLY

C:\Users\Jason\Desktop\August 2024\24160\drawings\24160.dwg

DRAWINGS ISSUE RECORD:

DATE:

DAHL, ROBINS & ASSOCIATES, INC.
1560 S. 5th Avenue
Yuma, AZ 85364
Phone: (928) 819-0825
Fax: (928) 783-0828
www.dahlrobins.com

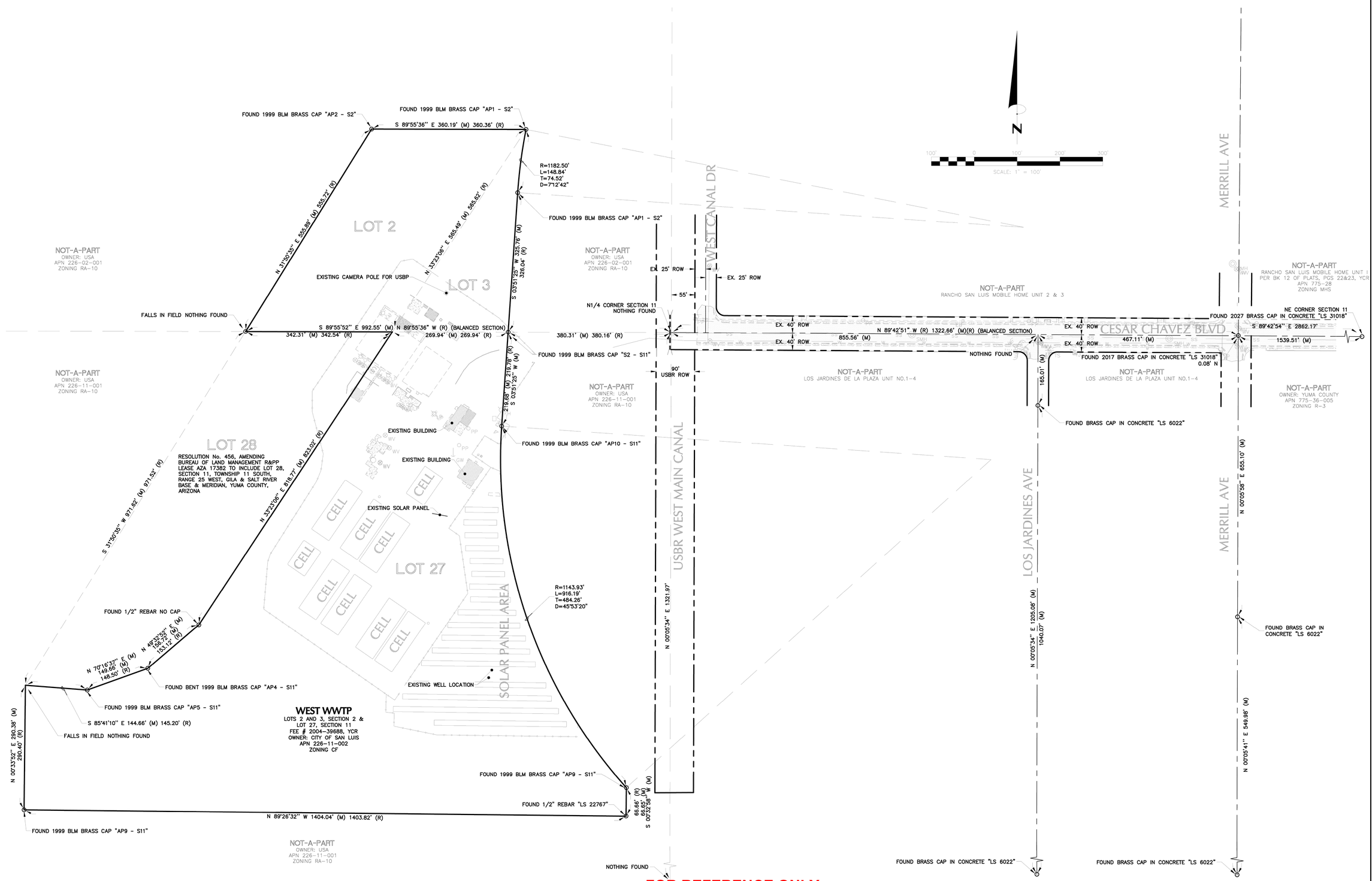
CITY OF SAN LUIS WEST WASTEWATER TREATMENT PLANT
SAN LUIS
ARIZONA

ALTA/NSPS LAND TITLE SURVEY

A SURVEY OF A PORTION OF THE LOTS 2 AND 3 OF SECTION 2, AND A PORTION OF THE LOT 27 OF SECTION 11, ALL IN TOWNSHIP 11 SOUTH, RANGE 25 WEST OF THE GILA & SALT RIVER BASE & MERIDIAN, YUMA COUNTY, ARIZONA

DATE:	AUG 2024
DESIGNED BY:	DRA
DRAWN BY:	JDL
CHECKED BY:	KAD
SURVEYED BY:	MAC
PROJECT NO.:	24160
SHEET	OF
1	2

THIS DRAWING AND THE DATA CONTAINED HEREON AND THE PROPERTY OF SAID DOING IS NOT TO BE USED IN A MANNER INCONSISTENT WITH THE PRIOR EXPRESS WRITTEN AUTHORIZATION OF THE COMPANY.



FOR REFERENCE ONLY

C:\Users\Juan\Desktop\August 2024\24160\drawings\24160.dwg

DRAWINGS ISSUE RECORD:

DATE:

DAHL, ROBINS & ASSOCIATES, INC.
1560 S. 5th Avenue
Yuma, AZ 85364
Phone: (928) 819-0825
Fax: (928) 819-0826
www.dahlrobins.com

CITY OF SAN LUIS WEST WASTEWATER TREATMENT PLANT

SAN LUIS
ARIZONA

ALTA/NSPS LAND TITLE SURVEY

A SURVEY OF A PORTION OF THE LOTS 2 AND 3 OF SECTION 2, AND A PORTION OF THE LOT 27 OF SECTION 11, ALL IN TOWNSHIP 11 SOUTH, RANGE 25 WEST OF THE GILA & SALT RIVER BASE & MERIDIAN, YUMA COUNTY, ARIZONA

REGISTERED LAND SURVEYOR
CERTIFICATE NO.
31018
KEVIN A.
DAHL
08/19/24
ARIZONA U.S.A.

DATE:	AUG 2024
DESIGNED BY:	DRA
DRAWN BY:	JDL
CHECKED BY:	KAD
SURVEYED BY:	MAC
PROJECT NO.:	24160
SHEET	OF
2	2

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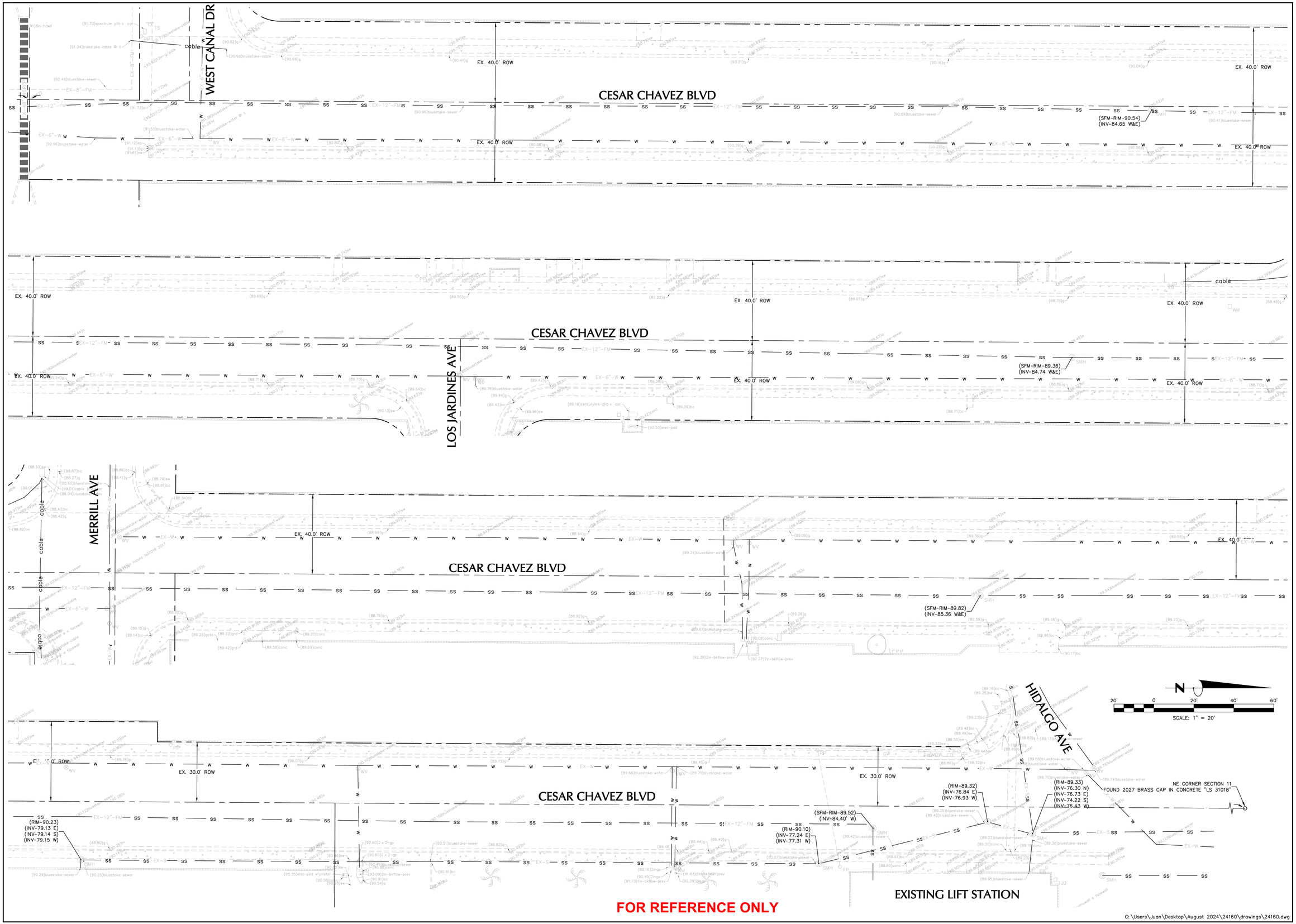

FOR REFERENCE ONLY

C:\Users\Juan\Desktop\August 2024\24160\drawings\24160.dwg

DRAWINGS ISSUE RECORD:

DATE:

DAHL, ROBINS & ASSOCIATES, INC.
1560 S. 5th Avenue
Yuma, AZ 85364
Phone: (928) 819-0825
Fax: (928) 819-0826
www.dahlrobins.com

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CITY OF SAN LUIS

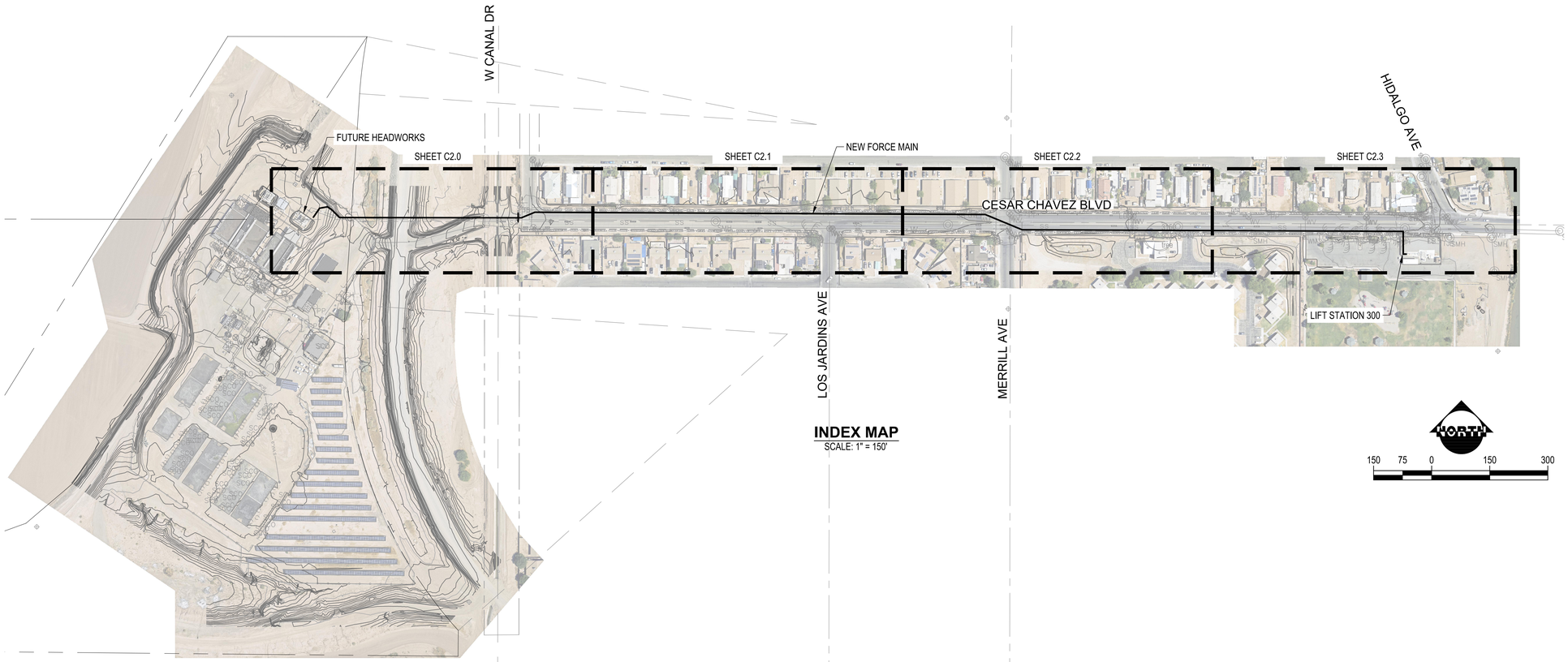
SAN LUIS
ARIZONA

TOPOGRAPHIC SURVEY

REGISTERED LAND SURVEYOR
CERTIFICATE NO.
31018
KEVIN A.
DAHL
06-Signed 09/27/24
ARIZONA, U.S.A.

DATE:	AUG 2024
DESIGNED BY:	DRA
DRAWN BY:	JDL
CHECKED BY:	KAD
SURVEYED BY:	MAC
PROJECT NO.:	24160
SHEET	OF
1	1

CITY OF SAN LUIS
YUMA COUNTY, ARIZONA
LIFT STATION 300 INFLUENT SEWER FORCE MAIN
SHEET INDEX



INDEX MAP
SCALE: 1" = 150'

W:\B777\Engineering\B777 - 3MGD Exp\3MGD FINAL DSN\sheets\B777-C5\0 FORCE MAIN INDEX SHEET.dwg - Tab: C1.0 - by kvo on 12/15/25 at 9:34:44 AM

NO	BY	DATE	REVISIONS	DATE	APP.

Professional Engineer — Duong T. Do — 40050 — Date Signed — Arizona, U.S.A. — Expires 12/31/27

PREPARED BY: DUONG DO
PROJECT ENGINEER: #40050
R.C.E. NO.: —
EXP. DATE:
SCALE:
DRAWN: KV
DESIGNED: NT, NE
CHECKED: DD
DATE: DEC 2025

TITLE: FORCE MAIN INDEX SHEET

JOB: CITY OF SAN LUIS
LIFT STATION 300 INFLUENT
SEWER FORCE MAIN UPGRADES
AZ.
SAN LUIS

PACE
Advanced Water Engineering
8723 E. VIA de COMMERCIO, SUITE A-204 | SCOTTSDALE, CA 85258
P: (408) 991-3995 | www.pacewater.com

SHEET C1.0
6 OF 12 SHEETS

JOB NO. B777

100% ISSUED FOR BID

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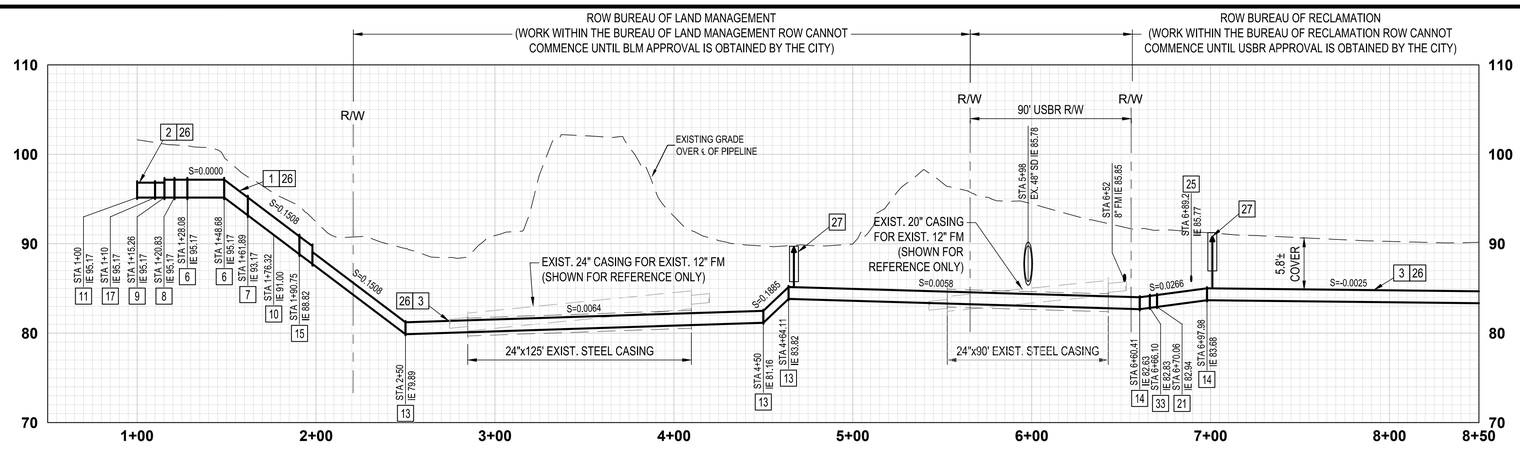
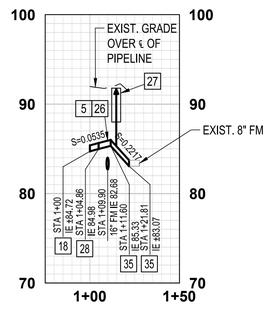
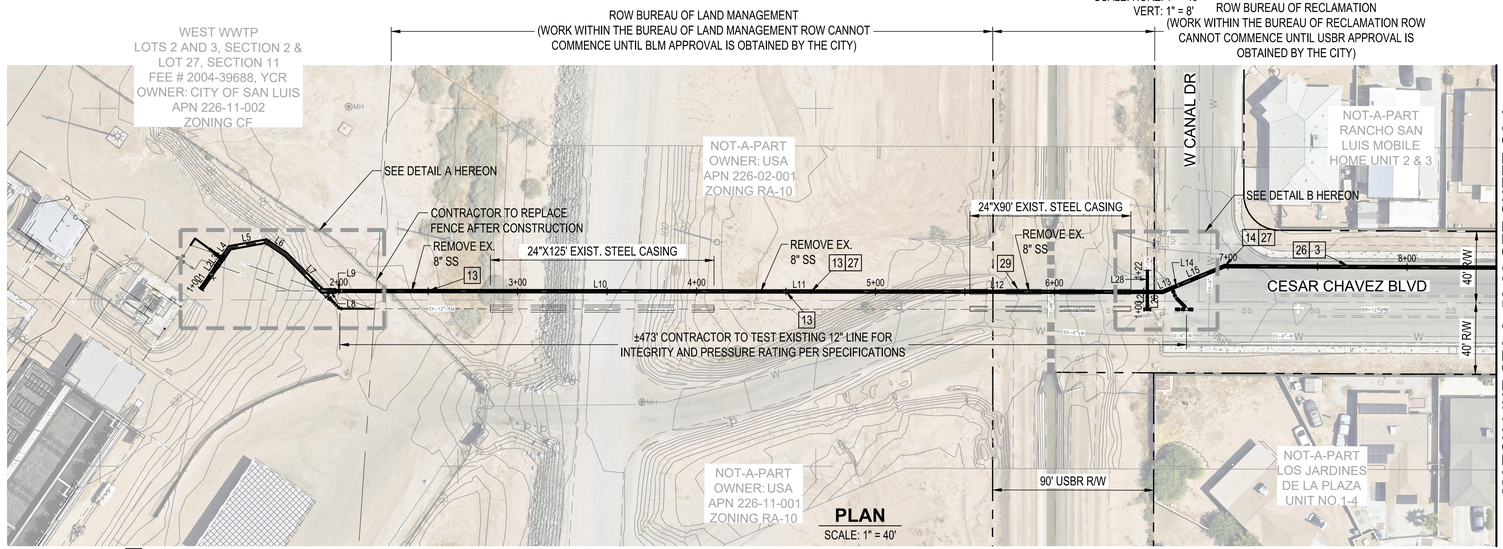


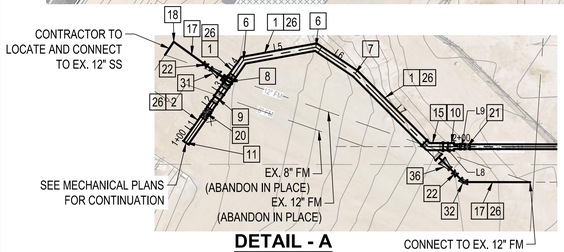
PROFILE
SCALE: HORZ: 1" = 40'
VERT: 1" = 8'



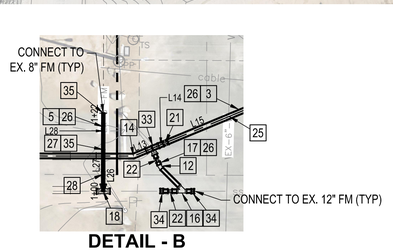
PROFILE L26-L28
SCALE: HORZ: 1" = 40'
VERT: 1" = 8'



PLAN
SCALE: 1" = 40'



DETAIL - A
SCALE: 1" = 20'



DETAIL - B
SCALE: 1" = 20'

LINE DATA				
LINE #	DISTANCE	BEARING	START POINT	END POINT
L26	4.86'	N0°00'05"E	N 545087.64, E 377785.32	N 545092.50, E 377785.32
L27	6.74'	N0°00'07"E	N 545092.50, E 377785.32	N 545099.24, E 377785.32
L28	10.21'	N0°00'03"E	N 545099.24, E 377785.32	N 545109.45, E 377785.32

CONSTRUCTION NOTES:

1. INSTALL 24" C900 PIPE WITH ASSOCIATED DIP FITTINGS AND APPURTENANCES.
2. INSTALL 20" C900 PIPE WITH ASSOCIATED DIP FITTINGS AND APPURTENANCES.
3. INSTALL 16" C900 PIPE WITH ASSOCIATED DIP FITTINGS AND APPURTENANCES.
5. INSTALL 8" C900 PIPE WITH ASSOCIATED DIP FITTINGS AND APPURTENANCES.
6. INSTALL 24" 45° MJ ELBOW W/RESTRAINTS.
7. INSTALL 24" 11.25° MJ ELBOW W/ RESTRAINTS.
8. INSTALL 24"x24"x20" MJ TEE W/ RESTRAINTS.
9. INSTALL 24"x20" MJ REDUCER W/ RESTRAINTS.
10. INSTALL 24"x16" MJ REDUCER W/ RESTRAINTS.
11. INSTALL 20" 90° MJ ELBOW W/ RESTRAINTS AND CAP.
12. INSTALL 12" 22.5° MJ ELBOW W/ RESTRAINTS.
13. INSTALL 16" 11.25° MJ ELBOW W/ RESTRAINTS.
14. INSTALL 16" 22.5° MJ ELBOW W/ RESTRAINTS.
15. INSTALL 24" MJ WYE W/RESTRAINTS.
16. INSTALL 12" MJ WYE W/RESTRAINTS.
17. INSTALL 12" C900 PIPE WITH ASSOCIATED DIP FITTINGS AND APPURTENANCES.
18. INSTALL 12"X12"X8" MJ TEE W/ RESTRAINTS. TIE TO EXIST 12" FORCE MAIN.
20. INSTALL 20" MJ PLUG VALVE WITH VALVE BOX PER DETAIL: (B / C3.1)
21. INSTALL 16" MJ PLUG VALVE WITH VALVE BOX PER DETAIL: (B / C3.1)
22. INSTALL 12" MJ PLUG VALVE WITH VALVE BOX PER DETAIL: (B / C3.1)
25. MAINTAIN WATER/SEWER SEPARATION AND INSTALL PER DETAIL: (A / C3.0)
26. TRENCH AND BACKFILL PER DETAIL: (B / C3.0)
27. INSTALL 2" UNDERGROUND AIR COMBINATION VALVE ASSEMBLY WITH H20 RATED PRE-CAST CONCRETE COLLAR AND MANHOLE LID PER DETAIL: (D / C3.1) SEE SPECIFICATIONS.
28. INSTALL 8" MJ PLUG VALVE WITH VALVE BOX PER DETAIL: (B / C3.1)
29. INSTALL STEEL CASING ISOLATORS FOR PIPELINE THROUGH CASING PER DETAIL: (E / C3.1)
30. INSTALL 16" MJ COUPLING W/RESTRAINTS.
31. INSTALL 20"x12" MJ REDUCER W/ RESTRAINTS.
32. INSTALL 12" 45° MJ ELBOW W/ RESTRAINTS.
33. INSTALL 16"x16"x12" MJ TEE W/ RESTRAINTS.
34. INSTALL 12" MJ COUPLING W/ RESTRAINTS.
35. INSTALL 8" 11.25 MJ ELBOW W/ RESTRAINTS.
36. INSTALL 24"x12" MJ REDUCER W/ RESTRAINTS.

GENERAL NOTE:
THE CONTRACTOR SHALL VERIFY ALL DEPTHS AND SIZES OF EXISTING UTILITY CROSSINGS AND AT THE LIFT STATION PRIOR TO CONSTRUCTION. COAT EXPOSED PIPING PER SPECIFICATIONS.

LINE DATA				
LINE #	DISTANCE	BEARING	START POINT	END POINT
L1	10.00'	N34°49'12"E	N 545099.07, E 377256.46	N 545107.28, E 377262.17
L2	5.26'	N34°49'12"E	N 545107.28, E 377262.17	N 545111.59, E 377265.17
L3	5.58'	N34°49'12"E	N 545111.59, E 377265.17	N 545116.17, E 377268.35
L4	7.25'	N34°49'12"E	N 545116.17, E 377268.35	N 545122.12, E 377272.49
L5	20.60'	N79°44'51"E	N 545122.12, E 377272.49	N 545125.79, E 377292.76
L6	13.21'	S66°10'12"E	N 545125.79, E 377292.76	N 545118.43, E 377303.73
L7	28.86'	S44°55'12"E	N 545118.43, E 377303.73	N 545098.00, E 377324.11
L8	7.22'	S89°56'12"E	N 545098.00, E 377324.11	N 545097.99, E 377331.34
L9	3.71'	N89°57'58"E	N 545097.99, E 377331.34	N 545097.99, E 377335.05
L10	200.00'	S89°55'51"E	N 545097.93, E 377383.36	N 545097.68, E 377583.36
L11	14.11'	S89°55'51"E	N 545097.68, E 377583.36	N 545097.67, E 377597.47
L12	196.30'	S89°56'03"E	N 545097.67, E 377597.47	N 545097.44, E 377793.77
L13	5.70'	N67°30'00"E	N 545097.44, E 377793.77	N 545099.62, E 377799.03
L14	3.96'	N67°30'00"E	N 545099.62, E 377799.03	N 545101.14, E 377802.69
L15	27.91'	N67°30'00"E	N 545101.14, E 377802.69	N 545111.82, E 377828.48
L16	488.96'	S89°42'25"E	N 545111.82, E 377828.48	N 545109.32, E 378317.43

INDEX MAP
SCALE: 1" = 500'

NORTH
40 20 0 40 80

NO	BY	DATE	REVISIONS	DATE	APP.

Registered Professional Engineer (Civil) — DUONG T. DO — 40050 — Arizona, U.S.A. — Date Signed 12/31/25 — Expires 12/31/27

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PREPARED BY: DUONG DO
PROJECT ENGINEER #40050
R.C.E. NO.: —
EXP. DATE:
SCALE:
DRAWN: KV
DESIGNED: NT, NE
CHECKED: DD
DATE: DEC 2025

TITLE: FORCE MAIN PLAN & PROFILE

JOB: CITY OF SAN LUIS
LIFT STATION 300 INFLUENT SEWER FORCE MAIN UPGRADES
SAN LUIS AZ.

PACE
Advanced Water Engineering
8723 E. VIA de COMMERCIO, SUITE A-204 | SCOTTSDALE, CA 85258
P: (408) 991-3595 | www.pacewater.com

SHEET C2.0
7 OF 12 SHEETS
JOB NO. B777

100% ISSUED FOR BID

W:\B777\Engineering\B777 - 3MGD Exp\3MGD FINAL DSN\sheets\B777-CA-0 FORCE MAIN PLAN & PROFILE.dwg - Tab: C2.0 - by kvo on 12/16/25 at 2:11:14 PM

CONSTRUCTION NOTES:

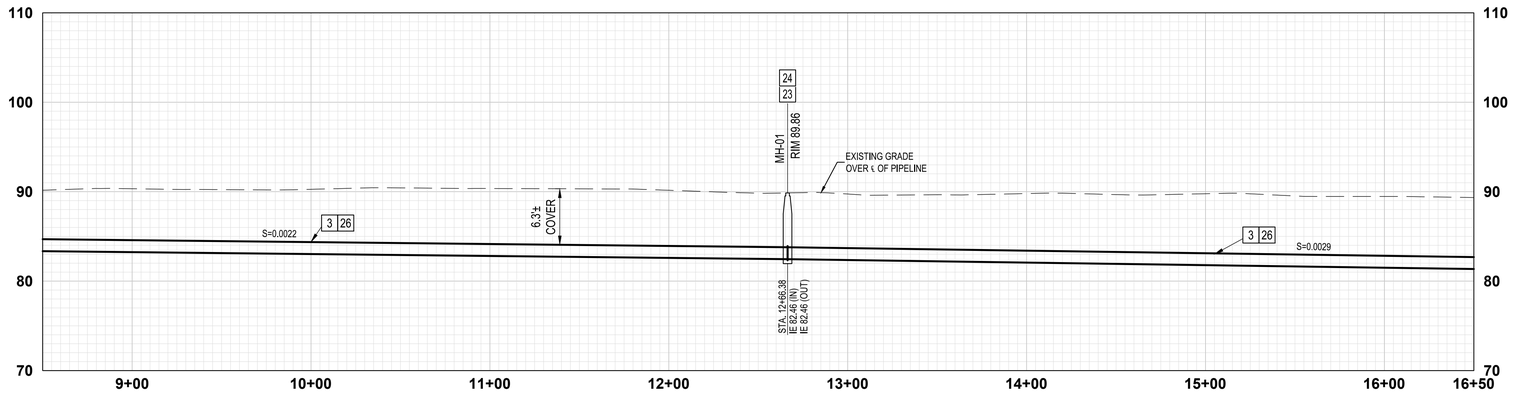
3 INSTALL 16" C900 PIPE WITH ASSOCIATED DIP FITTINGS AND APPURTENANCES.

23 INSTALL 48" CONCRETE MANHOLE PER DETAIL: D / C3.0 WITH MANHOLE COVER PER DETAIL: A / C3.1

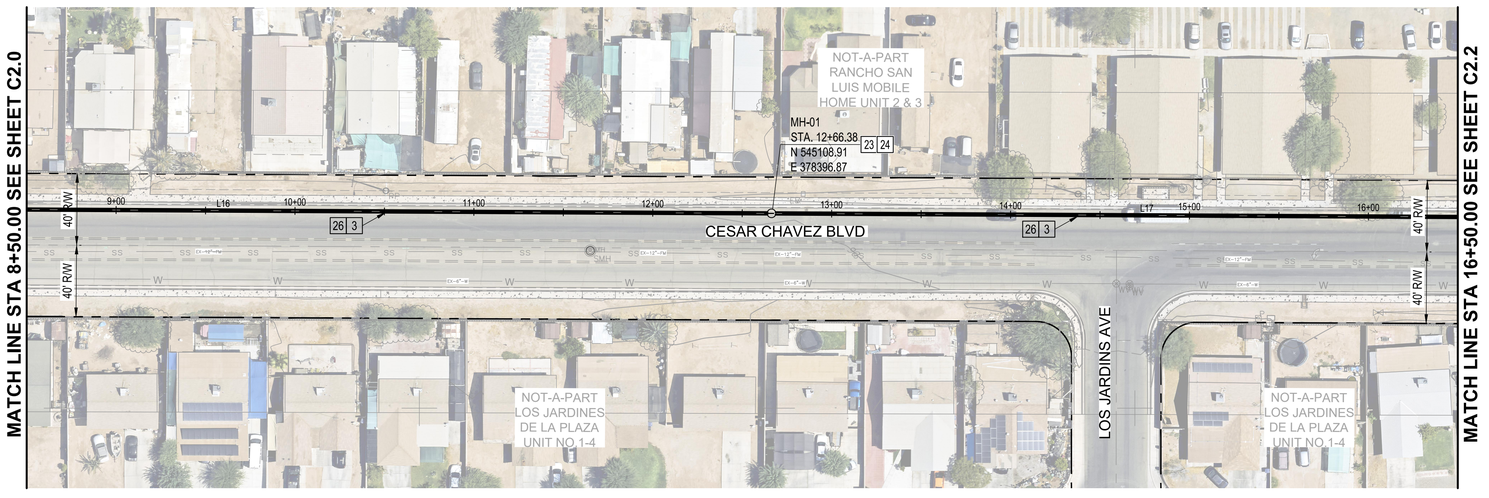
24 INSTALL FORCE MAIN CLEAN OUT PER DETAIL: F / C3.0

26 TRENCH AND BACKFILL PER DETAIL: B / C3.0

GENERAL NOTE:
THE CONTRACTOR SHALL VERIFY ALL DEPTHS AND SIZES OF EXISTING UTILITY CROSSINGS AND AT THE LIFT STATION PRIOR TO CONSTRUCTION. COAT EXPOSED PIPING PER SPECIFICATIONS.



PROFILE
SCALE: HORZ: 1" = 40'
VERT: 1" = 8'



PLAN
SCALE: 1" = 40'

LINE DATA				
LINE #	DISTANCE	BEARING	START POINT	END POINT
L16	488.96'	S89°42'25"E	N 545111.82, E 377828.48	N 545109.32, E 378317.43
L17	595.00'	S89°42'25"E	N 545109.32, E 378317.43	N 545106.27, E 378912.43

INDEX MAP
SCALE: 1" = 500'

NORTH

NORTH
40 20 0 40 80

NO	BY	DATE	REVISIONS	DATE	APP.

Registered Professional Engineer (Civil)
DUONG T. DO
40050
Date Signed 12/31/25
ARIZONA, U.S.A.
Expires 12/31/27

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PREPARED BY
DUONG DO
PROJECT ENGINEER
#40050
R.C.E. NO. —
EXP. DATE
DRAWN
KV
DESIGNED
NT, NE
CHECKED
DD
SCALE
DATE
DEC 2025

TITLE
FORCE MAIN
PLAN & PROFILE

JOB
CITY OF SAN LUIS
LIFT STATION 300 INFLUENT
SEWER FORCE MAIN UPGRADES
AZ.
SAN LUIS

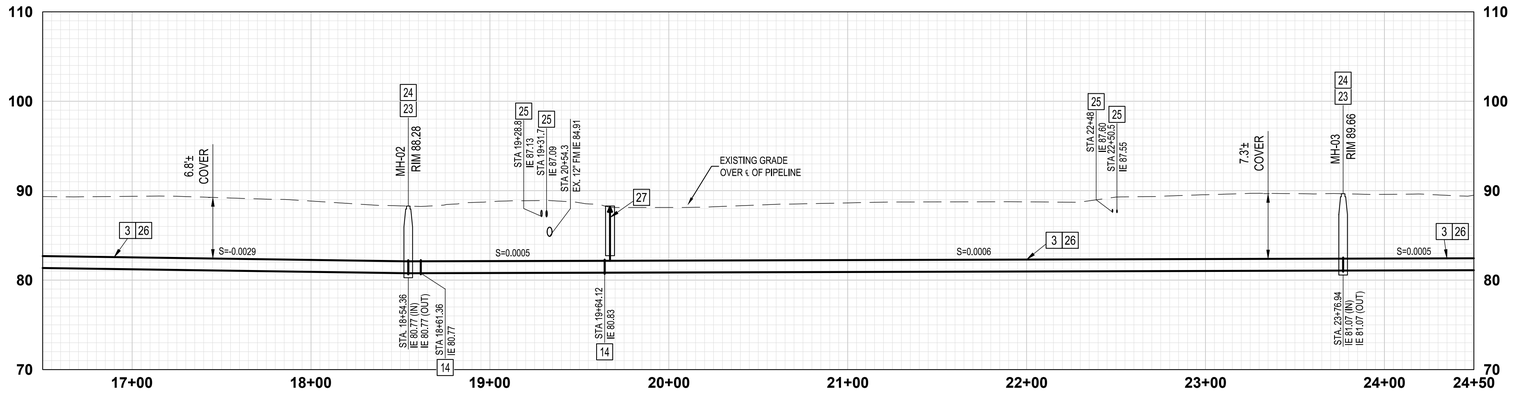
PACE
Advanced Water Engineering
8723 E. VIA de COMMERCIO, SUITE A-204 | SCOTTSDALE, CA 85258
P: (408) 991-3595 | www.pacewater.com

SHEET
C2.1
8 OF 12 SHEETS

JOB NO. B777

100% ISSUED FOR BID

W:\B777\Engineering\B777 - 3MGD Exp\3MGD FINAL DSN\sheets\B777-C4.0 FORCE MAIN PLAN & PROFILE.dwg - Tab: C2.1 - by kvo on 12/15/25 at 1:39:54 PM



PROFILE
SCALE: HORZ: 1" = 40'
VERT: 1" = 8'

CONSTRUCTION NOTES:

3 INSTALL 16" C900 PIPE WITH ASSOCIATED DIP FITTINGS AND APPURTENANCES.

14 INSTALL 16" 22.5° MJ ELBOW W/ RESTRAINTS.

23 INSTALL 48" CONCRETE MANHOLE PER DETAIL: D/C3.0 WITH MANHOLE COVER PER DETAIL: A/C3.1

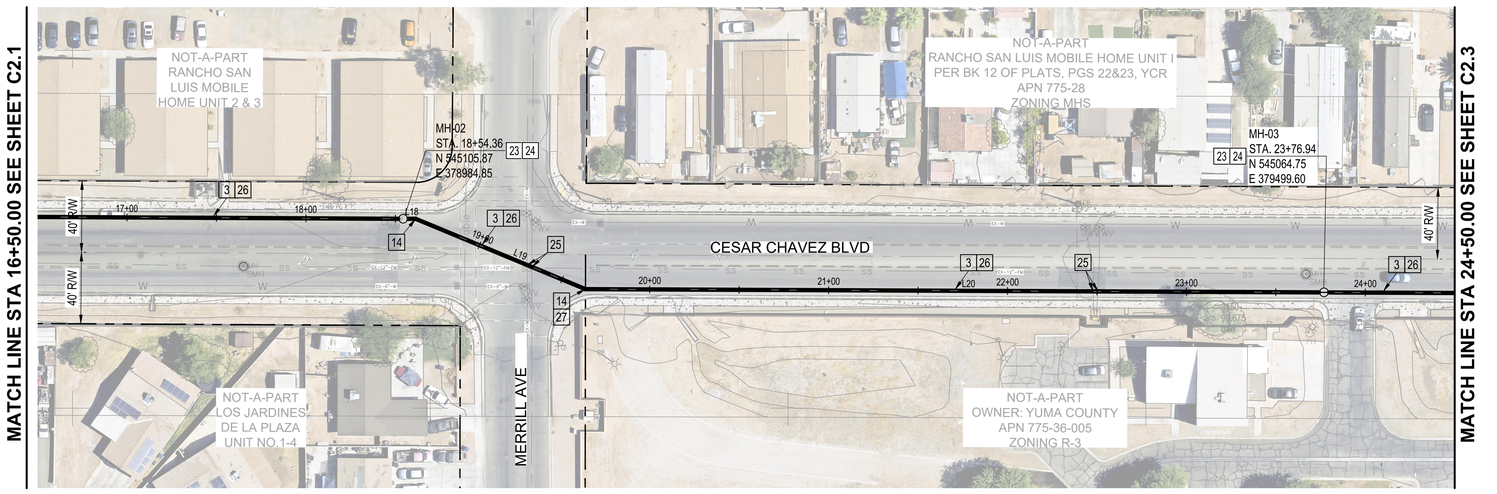
24 INSTALL FORCE MAIN CLEAN OUT PER DETAIL: F/C3.0

25 MAINTAIN WATER/SEWER SEPARATION AND INSTALL PER DETAIL: A/C3.0

26 TRENCH AND BACKFILL PER DETAIL: B/C3.0

27 INSTALL 2" UNDERGROUND AIR COMBINATION VALVE ASSEMBLY WITH H20 RATED PRE-CAST CONCRETE COLLAR AND MANHOLE LID PER DETAIL: D/C3.1 SEE SPECIFICATIONS.

GENERAL NOTE:
THE CONTRACTOR SHALL VERIFY ALL DEPTHS AND SIZES OF EXISTING UTILITY CROSSINGS AND AT THE LIFT STATION PRIOR TO CONSTRUCTION. COAT EXPOSED PIPING PER SPECIFICATIONS.



PLAN
SCALE: 1" = 40'

LINE DATA				
LINE #	DISTANCE	BEARING	START POINT	END POINT
L17	595.00'	S89°42'25"E	N 545109.32, E 378317.43	N 545106.27, E 378912.43
L18	7.00'	N90°00'00"E	N 545105.87, E 378984.85	N 545105.87, E 378991.85
L19	102.76'	S67°30'00"E	N 545105.87, E 378991.85	N 545066.54, E 379086.78
L20	412.82'	S89°45'04"E	N 545066.54, E 379086.78	N 545064.75, E 379499.60
L21	571.73'	S89°44'56"E	N 545064.75, E 379499.60	N 545062.24, E 380071.33

INDEX MAP
SCALE: 1" = 500'

NORTH

NORTH
40 20 0 40 80

NO	BY	DATE	REVISIONS	DATE	APP.

Registered Professional Engineer (Civil)
DUONG T. DO
No. 40050
Expires 12/31/27

PREPARED BY
DUONG DO
PROJECT ENGINEER
R.C.E. NO. #40050
EXP. DATE

DRAWN KV
DESIGNED NT, NE
CHECKED DD
SCALE
DATE DEC 2025

FORCE MAIN PLAN & PROFILE

TITLE

CITY OF SAN LUIS
LIFT STATION 300 INFLUENT
SEWER FORCE MAIN UPGRADES
AZ.
SAN LUIS
JOB

PACE
Advanced Water Engineering
8723 E. VIA de COMMERCIO, SUITE A-204 | SCOTTSDALE, CA 85258
P. (408) 991-3395 | www.pacewater.com

SHEET
C2.2
9 OF 12 SHEETS

JOB NO. B777

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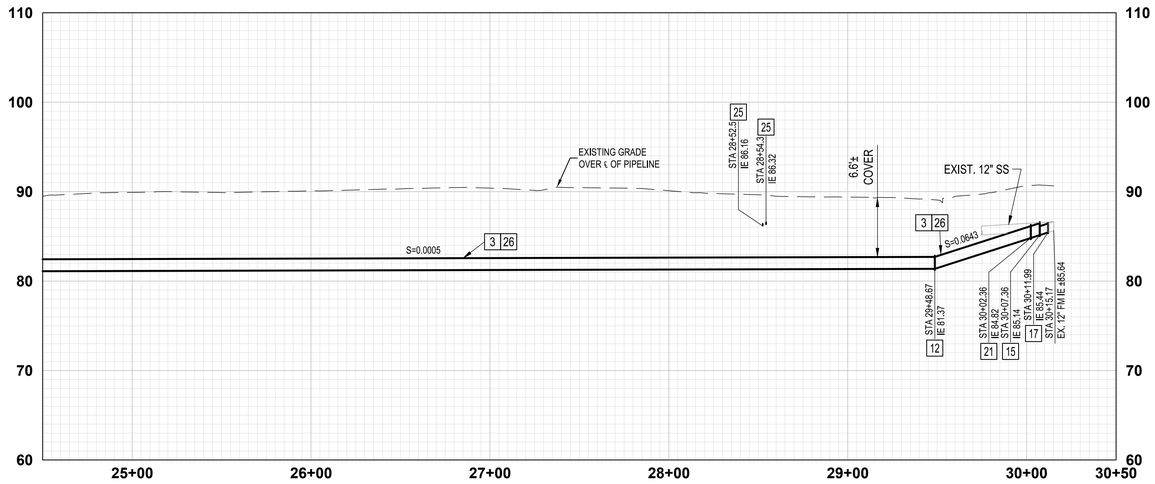

PROFILE
SCALE: HORZ: 1" = 40'
VERT: 1" = 8'

CONSTRUCTION NOTES:

3 INSTALL 16" C900 PIPE WITH ASSOCIATED DIP FITTINGS AND APPURTENANCES.
4 INSTALL 12" C900 PIPE WITH ASSOCIATED DIP FITTINGS AND APPURTENANCES.
12 INSTALL 16" 90° MJ ELBOW W/ RESTRAINTS.
15 INSTALL 16"x12" 90° MJ REDUCING ELBOW W/ RESTRAINTS.
17 REPLACE EXIST. 12" ELBOW WITH 12" MJ TEE W/ RESTRAINTS.
21 INSTALL 16" MJ PLUG VALVE WITH VALVE BOX PER DETAIL: B/C3.1
22 INSTALL 12" MJ PLUG VALVE WITH VALVE BOX PER DETAIL: B/C3.1
25 MAINTAIN WATER/SEWER SEPARATION AND INSTALL PER DETAIL: A/C3.0
26 TRENCH AND BACKFILL PER DETAIL: B/C3.0
28 LOCATE AND CONNECT TO EXISTING PIPE.
29 INSTALL 12" MJ COUPLING W/RESTRAINTS.

GENERAL NOTE:
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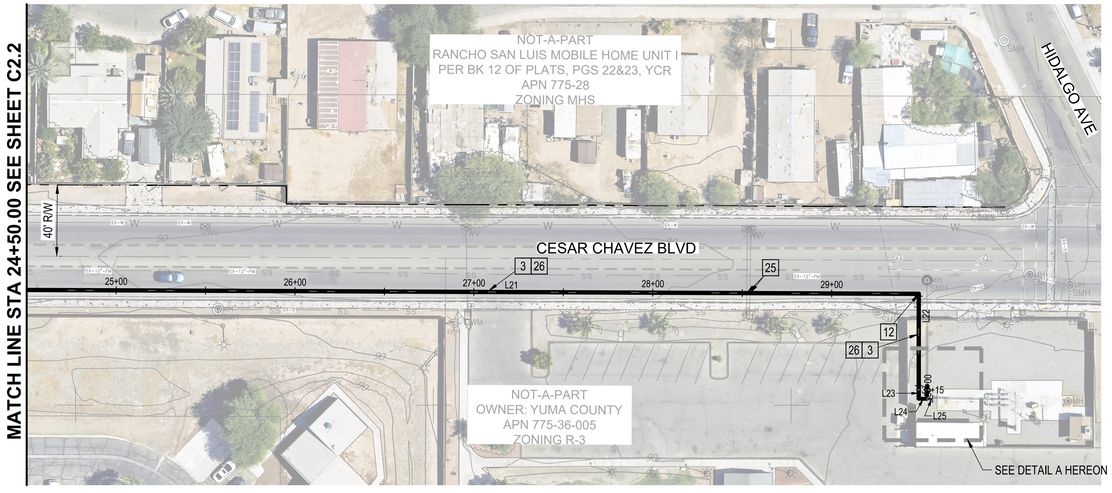
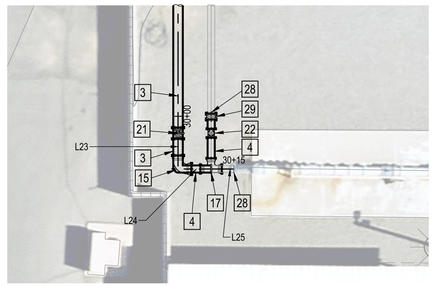


PLAN
SCALE: 1" = 40'



DETAIL -A
SCALE: 1" = 10'

LINE DATA				
LINE #	DISTANCE	BEARING	START POINT	END POINT
L21	571.73'	S89°44'56"E	N 545064.75, E 379499.60	N 545062.24, E 380071.33
L22	53.69'	S0°00'47"W	N 545062.24, E 380071.33	N 545008.55, E 380071.31
L23	5.00'	S0°00'47"W	N 545008.55, E 380071.31	N 545003.55, E 380071.31
L24	4.62'	N90°00'00"E	N 545003.55, E 380071.31	N 545003.55, E 380075.94
L25	3.18'	N90°00'00"E	N 545003.55, E 380075.94	N 545003.55, E 380079.12

INDEX MAP
SCALE: 1" = 500'

NORTH

NORTH
40 20 0 40 80

NO	BY	DATE	REVISIONS	DATE	APP.

Registered Professional Engineer (Civil) DUONG T. DO 40050 Arizona, U.S.A. Date Signed 12/31/25
Expires 12/31/27

PREPARED BY
DUONG DO
PROJECT ENGINEER
R.C.E. NO. #40050
EXP. DATE
DRAWN KV
DESIGNED NT, NE
CHECKED DD
SCALE
DATE DEC 2025

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TITLE
FORCE MAIN PLAN & PROFILE

JOB
CITY OF SAN LUIS
LIFT STATION 300 INFLUENT
SEWER FORCE MAIN UPGRADES
AZ.
SAN LUIS

PACE
Advanced Water Engineering
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P: (408) 991-3595 | www.pacewater.com

SHEET
C2.3
10 OF 12 SHEETS
JOB NO. B777

100% ISSUED FOR BID

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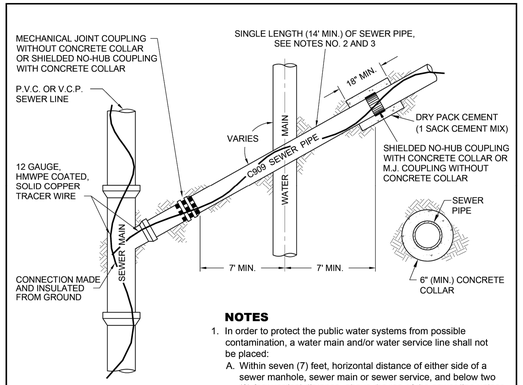
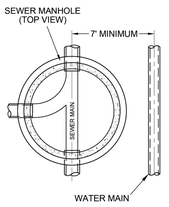




NOTES

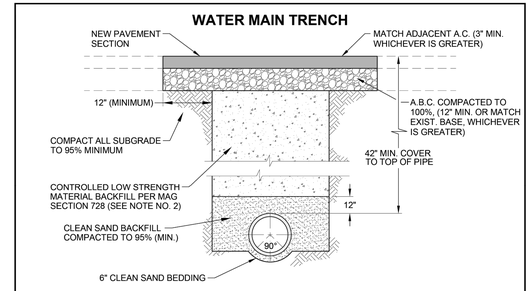
1. In order to protect the public water systems from possible contamination, a water main and/or water service line shall not be placed:
   A. Within seven (7) feet, horizontal distance of either side of a sewer manhole, sewer main or sewer service, and below two (2) feet vertical distance, above the top of the sewer line unless extra protection is provided. Extra protection shall consist of constructing the sewer main with mechanical joints or with approved no-hub joints encased in a minimum of 6" thick by 18" long concrete collar centered on the joint.
   B. Within 2 feet horizontally and 2 feet below the sewer main.
2. For extra protection use molecularly oriented polyvinyl chloride (PVCO) which meets ANSI/AWWA C909 installed at crossing location per drawing.
3. Water over sewer:
   2' or less separation: C909 required
   Over 2' separation: C909 not required.
   Sewer over water:
   C909 is required no matter the distance of separation.
4. All ferrous fittings, pipe, connectors and appurtenances shall receive a 10mil (minimum) polyethylene wrap to prevent direct contact with soil.
5. All sewer lines shall have tracer wire in accordance with State Law and City utility department policy.

Issued: May 2019

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 5-005
TYPICAL WATER & SEWER CROSSINGS

TYPICAL WATER & SEWER CROSSING N.T.S. A



NOTES

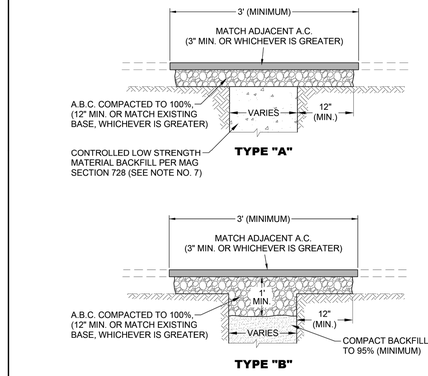
1. Native soil may be used for backfill when approved by the City Engineer.
2. Controlled low strength material shall consist of one sack of cement per cubic yard of clean sand.
3. Bedding shown is a minimum standard for shallow trenches and acceptable native base. Exact type of bedding shall be determined by the City Engineer.
4. Ditch sides shall be sloped or shored as required per OSHA standards.
5. All trenches shall be cold-patched if left open to traffic. All trenches shall be hot-mix paved within two (2) weeks of its excavation.

Issued: May 2019

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 5-010
TYPICAL WATER & SEWER MAIN TRENCH BACKFILL

TYPICAL WATER & SEWER MAIN TRENCH BACKFILL N.T.S. B



NOTES

1. This detail is to be used for trench backfill and pavement replacement.
2. All cut edges shall be sawcut to a true regular line and free of all foreign matter.
3. Edges of asphalt pavement shall be painted with emulsified asphalt or hot asphalt before permanent repair material is placed.
4. Type "B" repairs will not be permitted without prior approval of the City Engineer.
5. Asphaltic concrete for pavement repairs shall meet or be equivalent to requirements of the latest MAG Standard Specifications Section 710.
6. Pavement replacement in State highways or County highways shall be in accordance with ADOT and/or Yuma County requirements.
7. Controlled low strength material shall consist of one sack of cement per cubic yard of clean sand.
8. All trenches shall be cold-patched if left open to traffic prior to hot-mix paving. All trenches shall be hot-mix paved within two (2) weeks from its excavation.

Issued: May 2019

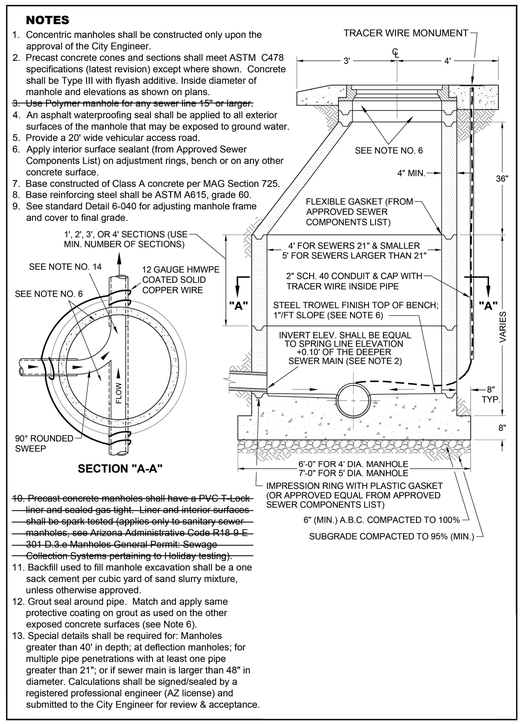
CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 5-016
PAVEMENT REPLACEMENT

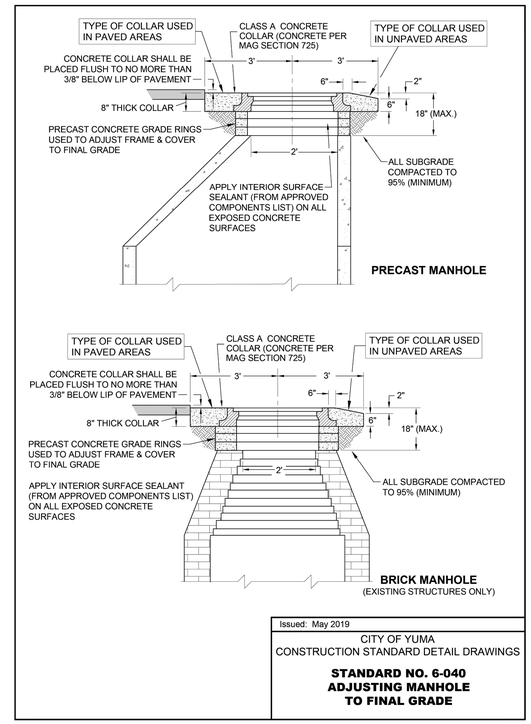
PAVEMENT REPLACEMENT N.T.S. C

NOTES

1. Concentric manholes shall be constructed only upon the approval of the City Engineer.
2. Precast concrete cones and sections shall meet ASTM C478 specifications (latest revision) except where shown. Concrete shall be Type III with flyash additive. Inside diameter of manhole and elevations as shown on plans.
3. ~~Use Polymer manhole for any sewer line 15" or larger.~~
4. An asphalt waterproofing seal shall be applied to all exterior surfaces of the manhole that may be exposed to ground water.
5. Provide a 20' wide vehicular access road.
6. Apply interior surface sealant (from Approved Sewer Components List) on adjustment rings, bench or on any other concrete surface.
7. Base constructed of Class A concrete per MAG Section 725.
8. Base reinforcing steel shall be ASTM A615, grade 60.
9. See standard Detail 6-040 for adjusting manhole frame and cover to final grade.
10. ~~Precast concrete manholes shall have a PVC T-Lock liner and sealed gas tight. Liner and interior surfaces shall be spark tested (applies only to sanitary sewer manholes, see Arizona Administrative Code R18-9-E 301 D.3.e.Manholes General Permit: Sewage Collection Systems pertaining to Holiday testing).~~
11. Backfill used to fill manhole excavation shall be a one sack cement per cubic yard of sand slurry mixture, unless otherwise approved.
12. Grout seal around pipe. Match and apply same protective coating on grout as used on the other exposed concrete surfaces (see Note 6).
13. Special details shall be required for: Manholes greater than 40' in depth; at deflection manholes; for multiple pipe penetrations with at least one pipe greater than 21"; or if sewer main is larger than 48" in diameter. Calculations shall be signed/sealed by a registered professional engineer (AZ license) and submitted to the City Engineer for review & acceptance.



PRECAST POLYMER CONCRETE MANHOLE N.T.S. D

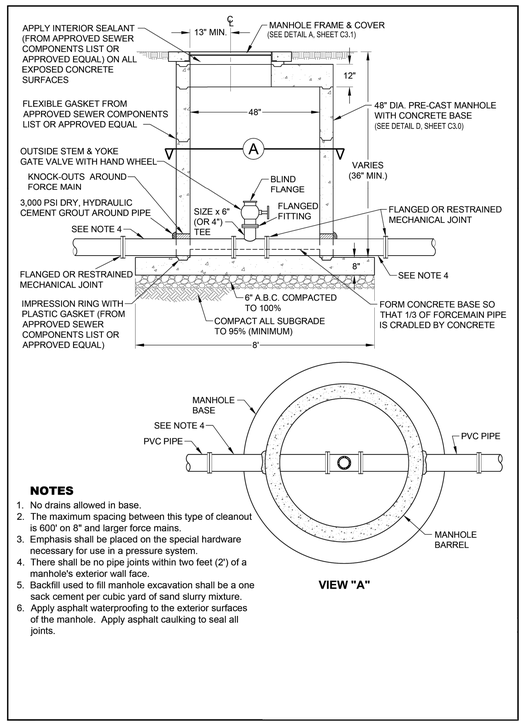


Issued: May 2019

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 6-040
ADJUSTING MANHOLE TO FINAL GRADE

ADJUSTING MANHOLE TO FINAL GRADE N.T.S. E



NOTES

1. No drains allowed in base.
2. The maximum spacing between this type of cleanout is 600' on 8" and larger force mains.
3. Emphasis shall be placed on the special hardware necessary for use in a pressure system.
4. There shall be no pipe joints within two feet (2') of a manhole's exterior wall face.
5. Backfill used to fill manhole excavation shall be a one sack cement per cubic yard of sand slurry mixture.
6. Apply asphalt waterproofing to the exterior surfaces of the manhole. Apply asphalt caulking to seal all joints.

FORCE MAIN PRESSURE CLEANOUT N.T.S. F

NO	BY	DATE	REVISIONS	DATE	APP.

Registered Professional Engineer (Civil) — Dustin T. Duong — 40050 — Arizona, U.S.A. — Date Signed 12/31/25 — Expires 12/31/27

PREPARED BY: DUONG DO
R.C.E. NO.: #40050
EXP. DATE:
SCALE:
DRAWN: KV
DESIGNED: NT, NE
CHECKED: DD
DATE: DEC 2025

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TITLE: CIVIL DETAILS

JOB: CITY OF SAN LUIS
LIFT STATION 300 INFLUENT
SEWER FORCE MAIN UPGRADES
AZ.
SAN LUIS

PACE
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8723 E. VIA de COMMERCIO, SUITE A-204 | SCOTTSDALE, CA 85258
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SHEET
C3.0
11 OF 12 SHEETS

JOB NO. B777

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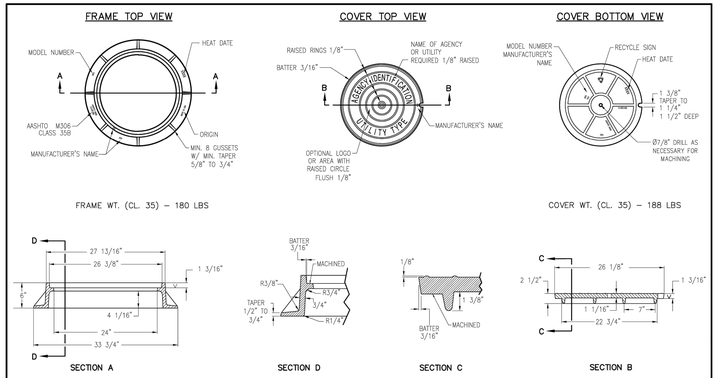
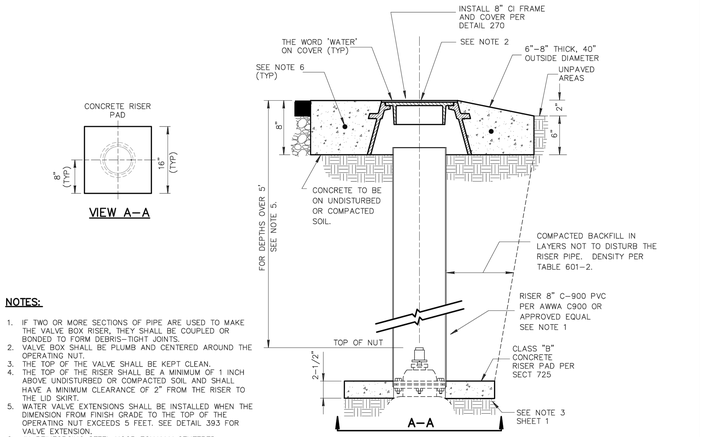
STANDARD MANHOLE FRAME AND COVER — N.T.S. — A



NOTE:
LETTERING ON MANHOLE COVER TO CONTAIN NAME OF AGENCY AND UTILITY FOR WHICH MANHOLE IS NEEDED, (I.E. "PHOENIX SANITARY SEWER"), OR AS DIRECTED. THE TOTAL WIDTH OF INDIVIDUAL LETTERS TO BE SUCH THAT LETTERS AND WORDS ARE EQUALLY SPACED AND BALANCED TO FORM A COMPLETE CIRCLE WITH SPACERS BEFORE AND AFTER THE WORD IDENTIFYING THE AGENCY INVOLVED. LETTERS TO BE 2" IN HEIGHT AND RAISED FLUSH W/ TOP OF RINGS. TYPE OF LETTERS TO BE SUBMITTED FOR APPROVAL. WEIGHT OF CASTINGS SHALL BE NO MORE THAN 2% MORE OR LESS THAN THE APPROXIMATE WEIGHT SPECIFIED. CASTINGS SHALL CONFORM TO ASTM A-48, CLASS 35 AND AASHTO M306. THE BEARING SURFACES OF THE FRAMES AND COVERS SHALL BE MACHINED AND THE COVERS SHALL SEAT FIRMLY WITHOUT ROCKING. ALL DIMENSIONS SHALL HAVE A 1/16" TOLERANCE.

DETAIL NO.	STANDARD DETAIL		REVISED	DETAIL NO.
423-1	MARICOPA ASSOCIATION of GOVERNMENTS ENGLISH	24" CAST IRON MANHOLE FRAME AND COVER	01-01-2020	423-1

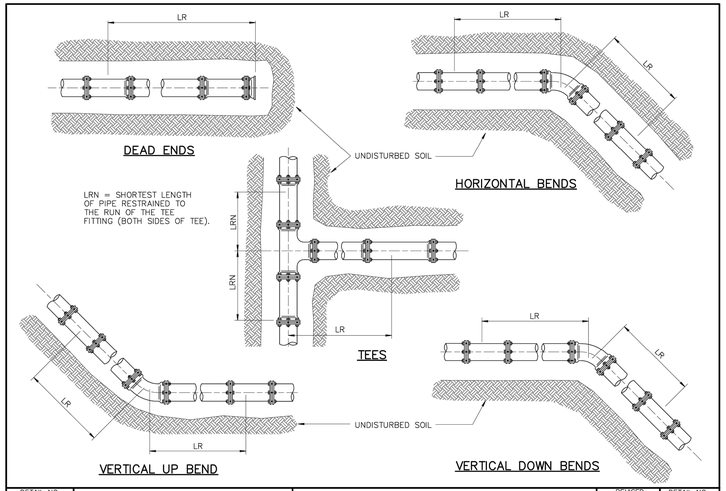
VALVE BOX — N.T.S. — B



NOTES:
1. IF TWO OR MORE SECTIONS OF PIPE ARE USED TO MAKE THE VALVE BOX RISER, THEY SHALL BE COUPLED OR BONDED TO FORM DEBRIS–TIGHT JOINTS.
2. VALVE BOX SHALL BE PLUMB AND CENTERED AROUND THE OPERATING NUT.
3. THE TOP OF THE VALVE SHALL BE KEPT CLEAN.
4. THE TOP OF THE RISER SHALL BE A MINIMUM OF 1 INCH ABOVE UNDISTURBED OR COMPACTED SOIL AND SHALL HAVE A MINIMUM CLEARANCE OF 2" FROM THE RISER TO THE LID SKIRT.
5. WATER VALVE EXTENSIONS SHALL BE INSTALLED WHEN THE DIMENSION FROM FINISH GRADE TO THE TOP OF THE OPERATING NUT EXCEEDS 5 FEET. SEE DETAIL 393 FOR VALVE EXTENSION.
6. #4 REINFORCING STEEL HOOP EQUALLY CENTERED HORIZONTALLY & VERTICALLY.

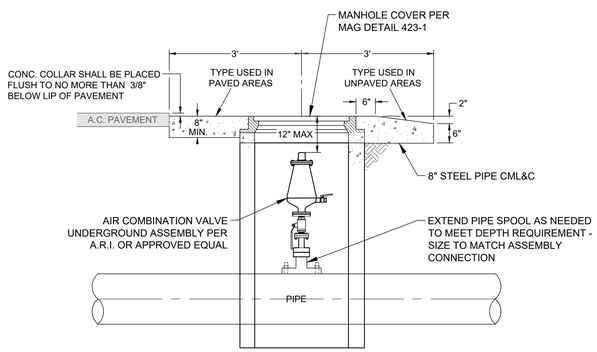
DETAIL NO.	STANDARD DETAIL		REVISED	DETAIL NO.
391-2	MARICOPA ASSOCIATION of GOVERNMENTS ENGLISH	VALVE BOX INSTALLATION AND GRADE ADJUSTMENT	01-01-2023	391-2

JOINT RESTRAINT — N.T.S. — C

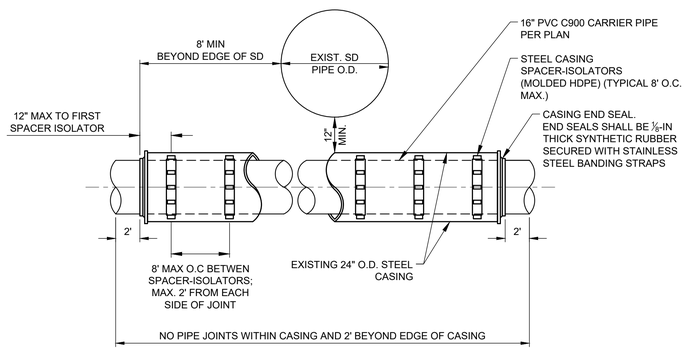


DETAIL NO.	STANDARD DETAIL		REVISED	DETAIL NO.
303-1	MARICOPA ASSOCIATION of GOVERNMENTS ENGLISH	JOINT RESTRAINT FOR DUCTILE IRON, POLYETHYLENE WRAPPED DUCTILE IRON AND PVC WATER PIPES	01-01-2019	303-1

COMBINATION AIR VALVE — N.T.S. — D



STEEL CASING ISOLATOR — N.T.S. — E



F — N.T.S.

NO	BY	DATE	REVISIONS	DATE	APP.

Registered Professional Engineer (Civil) — DUONG DO — 40050 — Arizona, U.S.A. — Date Signed 12/31/27 — Expires 12/31/27

PREPARED BY: DUONG DO — PROJECT ENGINEER — R.C.E. NO. #40050 — EXP. DATE —
SCALE —
DRAWN KV — DESIGNED NT, NE — CHECKED DD
DATE DEC 2025

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TITLE: CIVIL DETAILS

JOB: CITY OF SAN LUIS — LIFT STATION 300 INFLUENT SEWER FORCE MAIN UPGRADES — SAN LUIS AZ.

PACE — Advanced Water Engineering
8723 E. VIA de COMMERCIO, SUITE A-204 | SCOTTSDALE, CA 85258
P: (408) 991-3595 | www.pacewater.com

SHEET C3.1
12 OF 12 SHEETS

JOB NO. B777

100% ISSUED FOR BID

W:\B777\Engineering\B777 - 3MGD Exp\3MGD FINAL DS\sheets\B777-C3.0-CIVIL DETAILS-FNL.dwg - Tab: C3.1 - by kvo on 12/15/25 at 9:03:33 AM

Bid Opening
City of San Luis
LS300 Sewer Force Main Project
BAN NO.
1/27/2026
3:00 PM

DATE	COMPANY NAME	TIME	Amount
1/27/2026	Taylor Engineering PLLC	1:15 PM	$ 2,054,777.00
1/27/2026	Meridian Engineering Company	1:50 PM	$ 2,466,413.25
1/27/2026	Yuma Valley Contractor, Inc.	2:00 PM	$ 1,627,560.17
1/27/2026	Don Peterson Engineers, Inc. dba DPE Construction	2:40 PM	$ 1,638,000.00
1/27/2026	Gutierrez Canales Engineering, PC	2:51 PM	$ 2,132,365.98

January 30, 2026

Mr. Jorge Perez - Assistant Director of Public Works
City of San Luis
1090 East Union Street
San Luis, AZ 85349
Phone (928) 655-9357

Re: COSL LS300 Influent Sewer Force Main – 2025-050
Bid Evaluation & Recommendation #B777

The following is a bid results summary and recommendation for the COSL LS 300 Influent Sewer Force Main – 2025-050.

1.1 Bid Process Summary

The bid process included the following major milestones:

1. The public notice inviting bids were published on QuestCDN #9989354 and in the *Yuma Sun* on December 21, 2025, and December 28, 2025.
2. A mandatory pre-bid conference was held January 6, 2025, at 10:00 AM at COSL City Hall Pedro Conference Room. Eleven (11) contractors attended the pre-bid conference; attendees were in person and virtual via Teams.
3. Bids were received by the City Clerk at City Hall January 27th, 2026, by 3:00PM. Out of the eleven prime bidder plan holders, five bids were received with bid offerings as follows:
    a. Taylor Engineering, PLLC $2,534,777.00
    b. Yuma Valley Contractors $1,627,560.17 Apparent Low Bidder
    c. Gutierrez Canales Engineering, PC $2,132,365.98
    d. Meridian Engineering Company $2,466,413.25
    e. DPE Construction Inc $1,638,000.00
4. The Engineers Estimate of Probable Cost is $1,592,950.19. The apparent low bidder was Yuma Valley Contractors, with a bid price of $1,627,560.17 that includes a scope of work bid of $1,550,057.30 with an additional 5% contingency of $77,502.87. The apparent low bid price is within 2.2% of the engineers' estimate. Bid Tabulation and Yuma Valley Contractor's bid are enclosed for your reference.
5. The funding for this project is, in part, coming from a WIFA, which requires all Bidders to included Davis Bacon wage rates, American Iron & Steel (AIS) requirements.

1.2 Analysis of Contractor's Ability

The apparent low bid contractor, Yuma Valley Contractors, has been in the Yuma/San Luis area for many years, with tremendous experience in pipeline projects. Overall, we believe that Yuma Valley Contractors would be a very capable contractor for the project.

1.3 Valid Contractor's License Verification

A search on AZROC.gov was performed and Yuma Valley Contractors has the A-General Engineering License #106548 that is active with no complaints on file, the License Verification is enclosed for reference.

1.4 Engineer's Recommendation

PACE is recommending to the City of San Luis Award this contract to Yuma Valley Contractors, the apparent low bidder with a bid of $1,627,560.17, which includes a 5% contingency.

Sincerely,

Michael Krebs, PE
VP – Environmental Water Division

MGK/aj

Enclosures: *1. Certified Bid Tabulation*
2. 2026-01-27_Yuma Valley Bid Package
3. Yuma Valley Contractors_AZ License Verification

W:\B777\4-Administrative\Letters\2026-01-30_COSL LS300 Influent SFM Bid Evaluation\2026-01-30_COSL LS300 Influent SFM Bid Evaluation.docx

BIDS TABULATION

COSL LS 300 Influent Sewer Force Main - 2025-050

January 27, 2026, 3:00 PM Local Time

Low Bidder

Bid Item	Description	Unit	Qty	Taylor Engineering, PLLC		Yuma Valley Contractors		Gutierrez Canales Engineering, PC		Meridian Engineering Company		DPE Construction Inc	
				Unit Price	Total Cost	Unit Price	Total Cost	Unit Price	Total Cost	Unit Price	Total Cost	Unit Price	Total Cost
1	Mobilization / Demobilization	LS	1	$ 113,809	$ 113,809	$ 33,696	$ 33,696	$ 170,884	$ 170,884	$ 228,000	$ 228,000	$ 97,680	$ 97,680
2	Installation of New 8" PVC C900 Influent Force Main, Valves, Fittings and Appurtenances	LF	22	$ 4,311	$ 94,842	$ 1,084	$ 23,858	$ 1,481	$ 32,572	$ 2,000	$ 44,000	$ 650	$ 14,300
3	Installation of New 12" PVC C900 Influent Force Main, Valves, Fittings and Appurtenances	LF	546	$ 598	$ 326,508	$ 596	$ 325,378	$ 611	$ 333,480	$ 430	$ 234,780	$ 425	$ 232,050
4	Installation of 16" PVC C900 Portion of the Influent Force Main, Valves, Fittings and Appurtenances	LF	2809	$ 402	$ 1,129,218	$ 306	$ 860,453	$ 410	$ 1,151,409	$ 560	$ 1,573,040	$ 280	$ 786,520
5	Installation of 20" PVC C900 Portion of the Influent Force Main, Valves, Fittings and Appurtenances	LF	14	$ 6,517	$ 91,238	$ 5,249	$ 73,481	$ 4,758	$ 66,606	$ 4,495	$ 62,930	$ 2,675	$ 37,450
6	Installation of 24" PVC C900 Portion of the Influent Force Main, Valves, Fittings and Appurtenance	LF	90	$ 1,493	$ 134,370	$ 1,543	$ 138,909	$ 1,764	$ 158,715	$ 900	$ 81,000	$ 800	$ 72,000
7	Installation of Clean-out and Manholes Structures	LS	1	$ 65,908	$ 65,908	$ 94,282	$ 94,282	$ 117,158	$ 117,158	$ 125,215	$ 125,215	$ 320,000	$ 320,000
		Total Bid Price		**$**	**2,053,687.65**	**$**	**1,627,560.17**	**$**	**2,132,365.98**	**$**	**2,466,413.25**	**$**	**1,638,000.00**

Expires 12/31/2026

BID FORM

TO: City of San Luis, Arizona
1090 East Union Street
P.O. Box 1170
San Luis, Arizona 85349

BIDDER: Yuma Valley Contractors, Inc.
1334 S 5th Ave
Yuma, AZ 85364

Project Name: City of San Luis Lift Station 300 Influent Force Main Upgrades

In compliance with the ADVERTISEMENT FOR BIDS:

Having examined the CONTRACT DOCUMENTS, site of work, and being familiar with the conditions to be met, hereby submits the following BID for furnishing the material, equipment, labor and everything necessary for the completion of the work listed and agrees to execute the CONTRACT DOCUMENTS and furnish the required CONTRACT AND LABOR AND MATERIAL SURETY 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 Maricopa Association of Governments (MAG) Uniform Standard Specifications and Details for Public Works Construction as adopted by the City of San Luis, the City of Yuma Construction Standard Detail Drawings – 2019 edition [details], the City of San Luis Supplemental to the MAG Uniform Standard Specifications and Details for Public Works Construction and the City of Yuma Construction Standard Detail Drawings, except as otherwise required by the PLANS, TECHNICAL SPECIFICATIONS and GENERAL CONDITIONS;

Understands that this BID for construction of this PROJECT shall be submitted with a proposal guarantee of cash, certified check, cashier's check or BID SURETY BOND for an amount not less than 10 percent of the amount bid;

Agrees that upon receipt of NOTICE OF AWARD, from the City of San Luis, Arizona, Bidder will execute the CONTRACT DOCUMENTS within ten (10) calendar days;

Understands that the work shall commence on day 1 of the Contract Time and be completed within **120 calendar days.**

Hereby acknowledges receipt of and agrees Bidder's PROPOSAL is based on the following Addenda listed by number and date issued):

Number	Date	Number	Date
1 KP	Jan 6, 2026		
2 KP	Jan 19, 2026		

(List any additional addenda on the back of this sheet)

And hereby submits the following BID SCHEDULE of units and quantities as a part of this BID KIT:

BID SCHEDULE

ADDENDUM #2 VERSION

TO: City of San Luis, Arizona
1090 East Union Street
P.O. Box 1170
San Luis, Arizona 85349

BIDDER:

Project Name: City of San Luis Lift Station 300 Influent Force Main

Bid Item	Description	Unit	Quantities	Unit Price	Total Cost
1	Mobilization / Demobilization	LS	1	33696.23	33,696.23
2	Installation of New 8" PVC C900 Influent Force Main, Valves, Fittings and Appurtenances	LF	22	1,084.47	23,858.34
3	Installation of New 12" PVC C900 Influent Force Main, Valves, Fittings and Appurtenances	LF	546	595.93	325,377.78
4	Installation of 16" PVC C900 Portion of the Influent Force Main, Valves, Fittings and Appurtenances	LF	2809	306.32	860,452.88
5	Installation of 20" PVC C900 Portion of the Influent Force Main, Valves, Fittings and Appurtenances	LF	14	5,248.67	73,481.38
6	Installation of 24" PVC C900 Portion of the Influent Force Main, Valves, Fittings and Appurtenance	LF	90	1,543.43	138,908.70
7	Installation of Clean-out and Manholes Structures	LS	1	94,281.99	94281.99

NOTE: Detailed descriptions of bid items are on the following page.

TOTAL $ 1,550,057.30

5% CONTINGENCY SUBTOTAL $ 77,502.87

TOTAL BASE BID $ 1,627,560.17

TOTAL BASE BID AMOUNT IN WORDS

One million six hundred twenty seven thousand five hundred sixty dollars and seventeen cents

Bid Item 1 - Mobilization / Demobilization

Payment shall be made for mobilization and demobilization to and from the site, for bonds and insurance. CONTRACTOR shall provide all the necessary mobilization requirements for the proper construction activities, include providing all the necessary accommodations for personnel and equipment as describe in these Specification.

Bid Item 2 - Installation of New 8" PVC C900 Influent Force Main, Valves, Fittings and Appurtenances

Payment shall be made for site work associated with the installation of the new influent FM as described in the Contract Documents. The work shall include all pipes, fitting, and associated labor and materials required for the proper trenching, installation, and backfill of the pipes. This shall also include all incidentals including traffic control, SWPPP, potholing, pavement restoration, wire tracing, surveying, etc. of the required work. Quantities shown are estimated. Payment shall be based on actual installed quantity and unit price.

Bid Item 3 - Installation of New 12" PVC C900 Influent Force Main, Valves, Fittings and Appurtenances

Payment shall be made for site work associated with the installation of the new influent FM as described in the Contract Documents. The work shall include all pipes, fitting, and associated labor and materials required for the proper trenching, installation, and backfill of the pipes. This shall also include all incidentals including traffic control, SWPPP, potholing, pavement restoration, wire tracing, surveying, etc. of the required work. Quantities shown are estimated. Payment shall be based on actual installed quantity and unit price.

Bid Item 4 - Installation of 16" PVC C900 Portion of the Influent Force Main, Valves, Fittings and Appurtenances

Payment shall be made for site work associated with the installation of the new influent FM as described in the Contract Documents. The work shall include all pipes, fitting, and associated labor and materials required for the proper trenching, installation, and backfill of the pipes. This shall also include all incidentals including traffic control, SWPPP, potholing, pavement restoration, wire tracing, surveying, etc. of the required work. Quantities shown are estimated. Payment shall be based on actual installed quantity and unit price.

Bid Item 5 - Installation of 20" PVC C900 Portion of the Influent Force Main, Valves, Fittings and Appurtenances

Payment shall be made for site work associated with the installation of the new influent FM as described in the Contract Documents. The work shall include all pipes, fitting, and associated labor and materials required for the proper trenching, installation, and backfill of the pipes. This shall also include all incidentals including traffic control, SWPPP, potholing, pavement restoration, wire tracing, surveying, etc. of the required work. Quantities shown are estimated. Payment shall be based on actual installed quantity and unit price.

Bid Item 6 - Installation of 24" PVC C900 Portion of the Influent Force Main, Valves, Fittings and Appurtenance

Payment shall be made for site work associated with the installation of the new influent FM as described in the Contract Documents. The work shall include all pipes, fitting, and associated labor and materials required for the proper trenching, installation, and backfill of the pipes. This shall also include all incidentals including traffic control, SWPPP, potholing, pavement restoration, wire tracing, surveying, etc. of the required work. Quantities shown are estimated. Payment shall be based on actual installed quantity and unit price.

Bid Item 7 - Installation of Clean-out and Manholes Structures

Payment shall be made for the work associated with the installation of the clean-outs and manholes and associated appurtenances as shown on the drawings, specified in the contract documents.

THIS BID IS SUBMITTED BY Yuma Valley Contractors Inc. ,

a corporation organized under the laws of the State of Arizona ,

or a partnership consisting of _____ ,

or individual trading as _____ ;

of the City of Yuma (City, State) and is the holder of Arizona State

Contractor's license(s): General Engineering (type)

Classification A License No. 106548 .

The Bidder hereby certifies that as of the below date, the bond amount posted with the Arizona Registrar of Contractors is

$ 75,000 and that the Bidder's actual volume of work has not exceeded the contemplated gross volume pursuant to Arizona Administrative Code, Title 4 Chapter 9 [Authority: ARS §32-1101 et seq.]

Respectfully Submitted,

Bidder Yuma Valley Contractors, Inc.

Address 1334 S 5th Ave

City, State, ZIP Yuma, AZ 85364

E-mail kirkp@jsyinc.com

By:

[Signature] [Date]

Name 1/27/26

Title Vice President/ COO

ATTEST: [If Bidder is an Individual]

Witness:

[Signature] [Date]

Name and Title _____

BID SURETY BOND

Project Name: City of San Luis Lift Station 300 Influent Force Main

For: City of San Luis, Arizona

KNOW ALL MEN BY THESE PRESENTS:

That we, Yuma Valley Contractors, Inc., as Principal, (hereinafter called the Principal), and the Swiss Re Corporate Solutions America Insurance Corporation, a corporation duly organized under the laws of the State of Missouri and duly licensed and possessing a certificate of authority to transact surety business in the State of Arizona, as Surety, (hereinafter called the Surety), are held and firmly bound unto City of San Luis, Arizona [hereinafter called City] as Obligee, in the sum of ten percent (10%) of the total amount of the bid of Principal, submitted by him to the City for the work described below, for the payment of which sum, well and truly to be made, the said Principal and the said Surety, bind ourselves, our heirs, executors, and administrators, successors, and assigns, jointly and severally, firmly by these presents, and in conformance with Arizona Revised Statutes [ARS].

WHEREAS, the said Principal is herewith submitting its PROPOSAL for the City of San Luis Lift Station 300 Influent Force Main Upgrades 2025-050

NOW, THEREFORE, if the City shall accept the PROPOSAL of the Principal and the Principal shall enter into a CONTRACT with the City in accordance with the terms of the PROPOSAL and give the Bonds and Certificates of Insurance as specified in the Standard Specifications with good and sufficient Surety for the faithful performance of the CONTRACT and for the prompt payment of labor and materials furnished in the prosecution of the CONTRACT, or in the event of the failure of the Principal to enter into the CONTRACT and give the Bonds and Certificates of Insurance, if the Principal pays to the City 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, ARS, and all liabilities on this bond shall be determined in accordance with the provisions of the section to the extent as if it were copied at length herein.

Signed and sealed this 21st day of January, 2026.

Yuma Valley Contractors, Inc.
Principal Firm [Seal]

Principal Signature

Kirk Perkins V.P./COO
Name and Title

Swiss Re Corporate Solutions America Insurance Corporation
Surety Firm [Seal]

Surety Signature

Tina Marie Perkins, Attorney-In-Fact
Name and Title

Marsh & McLennan Agency LLC
Agency of Record

4703 E Camp Lowell Dr, Suite 101, Tucson, AZ 85712
Address
{NOTE: attach current power of attorney}

SWISS RE CORPORATE SOLUTIONS

SWISS RE CORPORATE SOLUTIONS AMERICA INSURANCE CORPORATION ("SRCSAIC")
SWISS RE CORPORATE SOLUTIONS PREMIER INSURANCE CORPORATION ("SRCSPIC")
WESTPORT INSURANCE CORPORATION ("WIC")

GENERAL POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS, THAT SRCSAIC, a corporation duly organized and existing under laws of the State of Missouri, and having its principal office in the City of Kansas City, Missouri, and SRCSPIC, a corporation organized and existing under the laws of the State of Missouri and having its principal office in the City of Kansas City, Missouri, and WIC, organized under the laws of the State of Missouri, and having its principal office in the City of Kansas City, Missouri, each does hereby make, constitute and appoint:

TINA MARIE PERKINS, SARALYN B. SEYMOUR, BRIAN D. WILDER,
DEBBIE CLAYTON, HOLLY BYRD, ALEXANDRA HAAS, RANDI L. MORGAN
JOINTLY OR SEVERALLY

Its true and lawful Attorney(s)-in-Fact, to make, execute, seal and deliver, for and on its behalf and as its act and deed, bonds or other writings obligatory in the nature of a bond on behalf of each of said Companies, as surety, on contracts of suretyship as are or may be required or permitted by law, regulation, contract or otherwise, provided that no bond or undertaking or contract or suretyship executed under this authority shall exceed the amount of:

ONE HUNDRED TWENTY-FIVE MILLION ($125,000,000.00) DOLLARS

This Power of Attorney is granted and is signed by facsimile under and by the authority of the following Resolutions adopted by the Boards of Directors of both SRCSAIC and SRCSPIC at meetings duly called and held on the 18th of November 2021 and WIC by written consent of its Executive Committee dated July 18, 2011.

"RESOLVED, that any two of the President, any Managing Director, any Senior Vice President, any Vice President, the Secretary or any Assistant Secretary be, and each or any of them hereby is, authorized to execute a Power of Attorney qualifying the attorney named in the given Power of Attorney to execute on behalf of the Corporation bonds, undertakings and all contracts of surety, and that each or any of them hereby is authorized to attest to the execution of any such Power of Attorney and to attach therein the seal of the Corporation; and it is

FURTHER RESOLVED, that the signature of such officers and the seal of the Corporation may be affixed to any such Power of Attorney or to any certificate relating thereto by facsimile, and any such Power of Attorney or certificate bearing such facsimile signatures or facsimile seal shall be binding upon the Corporation when so affixed and in the future with regard to any bond, undertaking or contract of surety to which it is attached."

SWISS RE CORPORATE SOLUTIONS AMERICA INSURANCE CORPORATION CORPORATE SEAL 1973 MISSOURI

SWISS RE CORPORATE SOLUTIONS PREMIER INSURANCE CORPORATION CORPORATE SEAL MISSOURI

By _____
Erik Janssens, Senior Vice President of SRCSAIC & Senior Vice President of SRCSPIC & Senior Vice President of WIC

By _____
Gerald Jagrowski, Vice President of SRCSAIC & Vice President of SRCSPIC & Vice President of WIC

WESTPORT INSURANCE CORPORATION CORPORATE SEAL MISSOURI

IN WITNESS WHEREOF, SRCSAIC, SRCSPIC, and WIC have caused their official seals to be hereunto affixed, and these presents to be signed by their authorized officers

this 10 day of NOVEMBER, 20 22

Swiss Re Corporate Solutions America Insurance Corporation
Swiss Re Corporate Solutions Premier Insurance Corporation
Westport Insurance Corporation

State of Illinois
County of Cook ss

On this 10 day of NOVEMBER, 20 22, before me, a Notary Public personally appeared Erik Janssens, Senior Vice President of SRCSAIC and Senior Vice President of SRCSPIC and Senior Vice President of WIC and Gerald Jagrowski, Vice President of SRCSAIC and Vice President of SPCSPIC and Vice President of WIC, personally known to me, who being by me duly sworn, acknowledged that they signed the above Power of Attorney as officers of and acknowledged said instrument to be the voluntary act and deed of their respective companies.

OFFICIAL SEAL
CHRISTINA MANISCO
NOTARY PUBLIC, STATE OF ILLINOIS
My Commission Expires March 28, 2026

Christina Manisco, Notary

I, Jeffrey Goldberg, the duly elected Senior Vice President and Assistant Secretary of SRCSAIC and SRCSPIC and WIC, do hereby certify that the above and foregoing is a true and correct copy of a Power of Attorney given by said SRCSAIC and SRCSPIC and WIC, which is still in full force and effect.
IN WITNESS WHEREOF, I have set my hand and affixed the seals of the Companies this 21st day of January, 20 26.

Jeffrey Goldberg, Senior Vice President & Assistant Secretary of SRCSAIC and SRCSPIC and WIC

NON-COLLUSION AFFIDAVIT

Project Name: City of San Luis Lift Station 300 Influent Force Main

For: City of San Luis, Arizona

That pursuant to Section 1128 of Title 23 USC, the undersigned in submitting a PROPOSAL for performing the following work by CONTRACT, being duly sworn, disposes and says that he has not, nor anyone associated with the business identified below, either 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 this CONTRACT.

Description of CONTRACT:

VP/COO
Signature of Bidder

VP/COO
Title

Yuma Valley Contractors, Inc.
Business Name

1334 S 5th Ave Yuma, AZ 85364
Address

Subscribed and sworn to before me this 27th day of January, 2026.

Notary Public

Notary Public in and for the County of Yuma, State Arizona.

My Commission Expires Aug. 20, 2027.

REBECCA BEDOYA
Notary Public - Arizona
Yuma County
My Commission Expires
August 20,2027
Commission # 652614

BIDDER'S PARTICIPATION, SUBCONTRACTOR AND SUPPLIER LIST

Project Name: City of San Luis Lift Station 300 Influent Force Main

For: City of San Luis, Arizona
1090 East Union Street
P.O. Box 1170
San Luis, Arizona 85349

This form shall be submitted along with the BID in the same sealed envelope.

The BIDDER must list below the names and addresses of all qualified subcontractors and major suppliers to be employed on the various portions of the work indicated.

BIDDER AND ALL CONTRACTORS SHALL BE DULY LICENSED IN ACCORDANCE WITH ARIZONA REVISED STATUTES AT THE TIME OF THE BID OPENING.

BIDDER,

SUB CONTRACTOR AND/OR SUPPLIER	**CURRENT AZ LICENSE [SUB CONTRACTOR]**
1. Yuma Valley Contractors, Inc.	ROC 106548, ROC 067763, ROC 072856
2. DPE Construction, Inc.	ROC 090323, ROC 080704, ROC 306193
3. Evans Custom Concrete, LLC	Material Supplier
4. Ferguson Waterworks	Pipe Supplier
5. Cemex Materials	Material Supplier

Visit OpenBooks (https://openbooks.az.gov/) Aide (https://www.azoca.gov/) Ombudsman-Citizens' Get the facts on COVID-19 (https://azdhs.gov/covid19/index.php)

Arizona Registrar of Contractors (https://roc.az.gov/)

Home Contractor Search (https://azroc.my.site.com/AZRoc/s/contractor-search) AZ.Gov (https://az.gov/search/google) FAQ (https://az.gov/) Login/Regist (https://azroc

Contractor Search

DISCLAIMER

The data supplied below is based on your specific request(s) and is correct to the best of our knowledge as of the date and time it was extracted from our data files. The information is provided without personal research or analysis. The data is subject to change on a daily basis. You may obtain additional public records related to any licensee, including dismissed complaints and nondisciplinary actions and orders, by contacting the ROC directly. If this information is required for legal purposes, you may request an affidavit or certified copies for a fee as specified in A.R.S. 32-1104A3 (https://www.azleg.gov/viewdocument/?docName=http://www.azleg.gov/ars/32/01104.htm). Please read our Standard Terms of Use at roc.az.gov/terms (https://roc.az.gov/terms)

Please note: The company or individuals listed on this license may hold other Arizona contracting licenses. To view information, status and complaint history for the past two years on other licenses held, go to the License Inquiry page and do a "Company Name and Personnel" search by entering the name of the company or individuals listed on the license.

DETAILS FOR

Yuma Valley Contractors Inc

LICENSE NUMBER ROC 106548

This information is current as of 2026-01-29 14:35:12

Share this License or Send it to Yourself: Email | Save for Later

If you are the contractor listed, feel free to contact our Licensing Department at (602) 542-1525 for more information.

CONTRACTOR

Business Entity Name	**Yuma Valley Contractors Inc**
City and State	**YUMA, AZ, 85364**
Phone	**9287836942**
Status / Action	**Active**

LICENSE

Class & Description
General Commercial A General Engineering

Entity Type
Corporation

Issued / Renewal

First Issued
1995-03-21

Renewed Through
2027-02-28

QUALIFYING PARTY & PERSONNEL

The Qualifying Party listed below is associated with this license. All other persons named, if any, are associated with the company. They are not all necessarily associated with this license.

Name : Norman Bruce Jacobson
Position : Qualifying Party
Other Positions : OFFICER

Name : Norman Bruce Jacobson
Position : Officer
Other Positions : OFFICER

Name : Daniel Bruce Jacobson
Position : Officer
Other Positions : OFFICER

Name : Michael J Jarvis
Position : Officer
Other Positions : OFFICER
Disassociation Date : 2024-05-22

COMPLAINT INFORMATION

Complaints against this contractor are listed below. Complaints that were cancelled, resolved or settled without a corrective work order or dismissed are not included. Contact the Registrar of Contractors at 602-542-1525 or toll-free statewide at 1-877-My AZROC (1-877-692-9762) to identify the ROC office location you need to visit to view complete complaint documentation. This website does not display all public sanctions or public information concerning a license's disciplinary history. Obtain any additional public information

by using the Public Records Request form to confirm the license's entire history.

	CLOSED CASES	
0	0	0
Open Cases	Disciplined Cases	Resolved / Settled Cases

BOND INFORMATION

How to collect from a license bond (https://roc.az.gov/recovery-fund?targetclass=answer-question-collect#question-collect)

Bond Type :	**Surety**
Bond Number :	**S300-4300-1904**
Effective Date :	**2015-02-01**
Bond Company :	**Washington International Insurance Company**
Amount :	**$ 75000**
Paid :	**$ 0**
Available :	**$ 75000**
Status :	**Active**

To find out if a contractor's ROC license is current and see other information related to the license, enter their 6 digit license number or their name below. If searching by a person's name, be sure to use first then last - for example: 'John Doe' instead of 'Doe, John'. You can also use the ADVANCED SEARCH functions by clicking the gray "Advanced Search" button below to search by City, Classification, Status and more. Click to read the complete instructions.

If you are looking for a complete list of our current contractors, we highly recommend using our Posting List (https://roc.az.gov/posting-list) page.

Enter your search terms here*... Search

Advanced Search Clear

IF YOU EXPERIENCE A TECHNICAL PROBLEM, PLEASE CLICK HERE (mailto:Webmaster@roc.az.gov).

FOR A LIST OF PENDING LICENSE APPLICATIONS CLICK HERE (https://roc.az.gov/posting-list#newAppsLicensesDiscipline)

If you are looking for a complete list of our current contractors, we highly recommend using our Posting List (https://roc.az.gov/posting-list) page.
For a list of contractors with their full information, please submit a Public Records Request through our Public Records Request One-Stop page. (https://azroc.my.site.com/AZRoc/s/roc-online-services) Thank you.

This resource is being provided for the information and convenience of the public. The listed businesses and their order of appearance do not constitute an endorsement, preference, or recommendation by the Registrar of Contractors.

While the Registrar of Contractors strives to make the information on this website as timely and accurate as possible, the Agency makes no claims, promises, or guarantees about the accuracy, completeness, or adequacy of the contents of this site, and expressly disclaims liability for errors and omissions in its contents. Please contact the Registrar at 877-692-9762 if you'd like to verify any of the information, or to report a discrepancy.

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(https://www.google.com/maps/place/1700+W+Washington+St,+Phoenix,+AZ+85

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registrar-of-
contractors/)

(https://www.instagram.co

AGENDA ITEM REVIEW FORM

Regular City Council Meeting **7. D.**

Meeting Date: 02/11/2026

Department Head: Tomas Sanchez, City Engineer, Engineering

Submitted By: Oscar Barnett, Project Manager, Engineering

Action Requested:

ITEM:

Discussion and possible action on any and all matters regarding the award of a contract to Kimley Horn and Associates, Inc. for the design of Well Site #6 Booster Pumps Station Expansion Design. **(Tomas Sanchez, City Engineer)**

SUMMARY:

The Engineering Department, on behalf of the Department of Public Works – Water Division, is seeking Council approval for the design of the booster pump station expansion at Well Site 6 to address increasing water demands on the East Side of the City. The improvements will extend the existing service footprint to better serve the surrounding area and will incorporate future-oriented electrical planning and upgrades, as the current electrical equipment is operating near capacity. These booster pump station expansions and electrical enhancements are intended to ensure reliable system performance today while providing the necessary infrastructure to support future demand and operational needs.

RECOMMENDATION / SUGGESTED MOTION:

I MOVE TO APPROVE THE PROFESSIONAL SERVICES CONTRACT WITH KIMLEY HORN AND ASSOCIATES, INC. FOR THE DESIGNING OF WELL SITE 6 BOOSTER PUMPS STATION EXPANSION IN THE AMOUNT OF $136,460.00 AS PRESENTED.

Fiscal Impact

IS THERE FISCAL IMPACT ASSOCIATED WITH THIS ITEM:	Yes
CITY/STATE/FEDERAL FUNDS:	City
TOTAL:	$136,460.00
BUDGETED AMOUNT:	$1,000,000.00
AVAILABLE AMOUNT TO TRANSFER:	N/A
ACCT NAME & GL#/REMAINING BALANCE BEFORE PURCHASE:	See Fiscal Impact

FISCAL IMPACT STATEMENT (IF THIS IS A BUDGET TRANSFER, YOU MUST ATTACH THE BUDGET ADJUSTMENT FORM):

Capital Outlay - Water 300-860-90015 $978,520.00 available

Attachments

Contract

PROFESSIONAL ENGINEERING SERVICES AGREEMENT

Professional Services Agreement (this "Agreement") is effective the ____ day of _____, 2026, between the City of San Luis, Arizona, a municipal corporation of the State of Arizona ("CITY"), and Kimley-Horn and Associates, Inc. an Arizona professional limited liability company, authorized to do business in the State of Arizona ("ENGINEER"). ENGINEER and CITY may be referred to singularly as the "Party" and collectively as the "Parties."

RECITALS

The Parties entered into this Agreement based on the following facts, understanding and intentions of the Parties:

A. CITY has determined that it is in the public interest to proceed with the work described below in Section One (the "Project").

B. CITY has determined that the Project involves the performance of professional and technical services of a temporary nature.

C. CITY desires to engage ENGINEER, and ENGINEER agrees to render certain technical advice and professional services to CITY, as necessary.

In consideration of the mutual covenants contained herein, the Parties agree as follows:

SECTION I – DESCRIPTION OF PROJECT

The Project described in the attached Exhibit 1, ENGINEER's Scope and Fee Proposal for Engineering Services, dated January 27th, 2026, for providing design and professional services related to the expansion of the existing booster pump station, located at Well Site 6. Services include the preparation of construction drawings and permitting support for improvements to the existing booster pump station.

SECTION II – SCOPE OF WORK

ENGINEER's scope of work is as described in Exhibit 1.

SECTION III – ADDITIONAL SERVICES

CITY and ENGINEER understand that it may be necessary, in conjunction with the Project, for ENGINEER to perform or secure the performance of services other than those set forth in the proposal. If the CITY requests additional services, ENGINEER shall advise CITY in writing of the need for additional services and the cost and estimated time to perform the additional services. ENGINEER shall not proceed to perform any such additional service until CITY has determined that such additional service is beyond the scope of the basic services to be provided by ENGINEER and has given its written authorization to proceed. Written approval for performance and compensation for additional services may be granted by the San Luis City Engineer or City Manager. Except as stated in this paragraph, any additional service shall require a written amendment to this Agreement and shall be subject to all the provisions of this Agreement.

SECTION IV – AUTHORITY OF THE SAN LUIS CITY ENGINEER

ENGINEER shall perform all necessary services provided under the Agreement and outlined in the proposal and shall do, perform, and carry out such work to meet the professional standard of care. The City Engineer reserves the right to make changes, additions or deletions, to the scope of work as deemed to be necessary or advisable to implement and carry out the purposes of the Agreement. Any changes, additions or deletions to the scope work shall be subject to an approved and executed amendment to the Agreement. The City Engineer is authorized to execute the change orders on behalf of CITY.

SECTION V – RESPONSIBILITY OF ENGINEER
By executing this Agreement, ENGINEER represents and states to CITY that it possesses or will arrange to secure from others all necessary professional capabilities, experience, resources and facilities necessary to provide to CITY the services contemplated under this Agreement. ENGINEER further warrants that it will follow the current generally accepted practices of the profession to make findings, render opinions, prepare factual presentations, and provide professional advice and recommendations regarding the Project for which services are rendered under this Agreement.

SECTION VI – INDEPENDENT CONTRACTOR
The Parties to this Agreement agree that ENGINEER, its employees, agents and subcontractors shall be independent contractors with regard to the providing of services under this Agreement and that ENGINEER's employees, agents and subcontractors shall not be considered to be employees or agents of CITY, for any purpose, whatsoever, and will not be entitled to any of the benefits CITY provides for its employees. Rights of the ENGINEER as independent contractor include, but are not limited to, control of the work, manner and methods of the work, and the right to contract with other employers.

Rights of the CITY include, but are not limited to, inspection and approval of the work and the right to contract with others to perform the work.

SECTION VII – MATERIALS AND EQUIPMENT
ENGINEER shall furnish at its own expense all materials and equipment necessary to carry out the terms of this Agreement.

SECTION VIII – DIGITAL FILES
ENGINEER shall furnish copies of all deliverables in digital format. Files shall be compatible with the current versions used by CITY. CITY shall be the owner of the files and owner of all copyrights or other intellectual property rights thereto.

SECTION IX – EMPLOYMENT OF PERSONNEL
ENGINEER shall provide experienced and qualified personnel to carry out the work to be performed by ENGINEER under this Agreement and shall be responsible for and in full control of the work of such personnel.

SECTION X – TIME OF PERFORMANCE
Subject to the provisions of this Agreement, ENGINEER agrees to perform the Project in accordance with the proposal. The services of ENGINEER are to be undertaken and completed in such a sequence as to assure their expeditious completion in light of the purpose of this Agreement. ENGINEER's anticipated period of performance following execution of this agreement will be 90 days to complete scope of work, as described in Exhibit 1. Time if of the essence of this Agreement.

SECTION XI – COMPENSATION
Subject to the provisions of this Agreement, ENGINEER agrees to perform the work and services specified and outlined in the proposal for an amount not to exceed $136,460.00, as delineated in the proposal at Exhibit 1, unless specifically authorized by a written amendment to this Agreement executed prior to the commencement of any additional work. ENGINEER shall prepare invoices in accordance with this Agreement and shall submit such invoices to CITY once a month covering the amount and value of the Project satisfactorily performed by ENGINEER up to the date of such invoice. No later than 45 days from the receipt of an invoice, CITY shall pay ENGINEER for work satisfactorily performed on a time and materials basis.

If the CITY wants the ENGINEER to travel outside of Yuma County, then it shall be handled as an additional service which shall require a written amendment to this Agreement and shall be subject to all the provisions of this Agreement.

SECTION XII – ASSIGNMENT
ENGINEER shall not assign any duties, responsibilities or obligations under this Agreement without the prior written consent of CITY.

SECTION XIII – INDEMNIFICATION

To the fullest extent permitted by law, ENGINEER agrees to indemnify, protect, defend and hold harmless CITY, its Mayor, Council Members, any and all of its officers, directors, officials, and employees ("Indemnified Parties") for, from and against any and all suits, claims, losses, liabilities, damages, costs, expenses and debt, including reasonable attorneys' fees and costs incurred by the CITY which arise out of, attributable to or to the extent caused in whole or in part by negligent acts or omissions of ENGINEER (or its officers, directors, shareholders, agents or employees) including but not limited to injuries to ENGINEER's employees who may or may not be covered by workers' compensation insurance; except, to the extent such suits, claims, losses, liabilities, damages, costs, expenses and debt result from acts or omission of the CITY or any Indemnified Parties. This indemnification provision shall apply to suits, claims, losses, liabilities, damages, costs, expenses and debt that are not otherwise covered by the CITY's Liability Insurance provided for by the Arizona Municipal Risk Pool.

Notwithstanding the foregoing, but without limiting insurance coverage provided by Section 14 of this Agreement, ENGINEER, and its partners, agents and employees, shall not be liable to CITY, whether jointly severally or individually, in excess of the compensation paid by the City to the ENGINEER under any Agreement as a result of any negligent act or omission not amounting to willful or intentional wrong. CITY hereby agrees that to the fullest extent permitted by law, but without limiting insurance coverage provided by Section 14 of this Agreement, ENGINEER shall not be liable to CITY for any special, indirect or consequential damages whatsoever, whether caused by ENGINEER's negligence, errors, omissions, strict liability, breach of contract, breach of warranty or other cause or causes whatsoever.

SECTION XIV – INSURANCE

A. Insurance Requirements.

Prior to the beginning and throughout the duration of the work, ENGINEER will maintain insurance in conformance with the requirements set forth below. ENGINEER will use existing coverage to comply with these requirements. If that existing coverage does not meet the requirements set forth in this Section Fifteen, then such coverage shall be amended to do so. ENGINEER acknowledges that the insurance coverage and policy limits set forth in this Section Fifteen constitute the minimum amount of coverage required. Any insurance proceeds in excess of the limits and coverage required in this Agreement, the following types and amounts of insurance:

Without in any way limiting ENGINEER's liability pursuant to the indemnification described above, ENGINEER shall maintain, during the term of this Agreement, the following types and amounts of insurance:

Coverage Type	Coverage Amounts- Minimum Limits:
Commercial General Liability, including: Premises and Operations Contractual Liability Personal-Injury Liability Independent Contractors Liability	$1,000,000 Combined Single Limit, per occurrence and $2,000,000 general aggregate

Coverage for an additional insured shall not be limited to its vicarious liability. Defense costs must be paid in addition to limits.

Comprehensive Automobile Liability (including, owned, non-owned and hired autos)	$1,000,000 Combined Single Limit, per Occurrence

If ENGINEER owns no vehicles, then this requirement may be satisfied by a non-owned auto endorsement to the general liability policy described above. If ENGINEER or ENGINEER's employees use personal motor vehicles in any way on this Project, then ENGINEER shall obtain evidence of personal motor vehicle liability coverage for each such person.

Workers Compensation and Employer's Liability	Statutory $1,000,000
Professional Liability (Errors and Omissions) Insurance	$1,000,000 per claim and $2,000,000 annual aggregate

Except for Workers Compensation and Professional Liability Insurance coverage, such insurance shall include additional endorsements naming CITY and its directors, officers, employees and agents as additional insured with respect to liabilities arising out of the performance of services under this Agreement. ENGINEER shall provide CITY with certificates of insurance documenting that the ENGINEER has obtained the above coverages. Such certifications shall include the required provisions and endorsements required by this Agreement. Such Certificates shall include a statement that insurance may not be canceled without 30 days' prior written notice to CITY by first class mail, postage prepaid, 10 days of notice in the event that cancellation is due to nonpayment of premium.

B. Certificates of Insurance and Endorsements.

ENGINEER will provide the City with a certificate of insurance and endorsement naming CITY as an additional insured under General Liability and Auto Liability, if applicable. Such liability insurance maintained by ENGINEER shall be primary and non-contributory and any coverage maintained by CITY shall not be expected to contribute to any claims arising from the work under this Agreement. The ENGINEER shall provide these certificates to the CITY within 10 days of execution of this Agreement and prior to engaging any operation or activities set forth in this Agreement. The foregoing policies shall provide that no cancellation, major change in coverage, or expiration by the insurance company or the insured during the term of this Agreement shall occur without 30 days' written notice to CITY prior to the effective date of such cancellation or change in coverage.

SECTION XV – COMPLIANCE WITH LAWS AND REGULATIONS

Services performed by ENGINEER pursuant to this Agreement shall be performed in accordance with full compliance to all applicable federal, state, and CITY laws and any rules or regulations promulgated under such laws including but not limited to the following Arizona required provisions:

A. Conflict of Interest

ENGINEER declares that he presently has no interest and shall not acquire any interest, direct or indirect, financial or otherwise, which would conflict in any manner or degree with the performance of the services under this Agreement. ENGINEER further declares that in the performance of this Agreement no subcontractor or person having such interest shall be employed. ENGINEER certifies that, if he hires any employee, no one who has or will have any financial interest in this Agreement is an officer or employee of CITY. The Parties agree that in the performance of the services under this Agreement ENGINEER shall at all times be deemed an independent contractor and not an agent or employee of CITY. Under Arizona law, rules and regulations, no member, official or employee of the CITY shall have any personal interest, direct or indirect in this Agreement, nor shall any such member, official or employee participate in any decision relating this Agreement which affects his or her

personal interest or the interest of any corporation, partnership or association in which he or she is, directly or indirectly, interested. This Agreement is subject to A.R.S. §38-511.

B. Employment Eligibility

ENGINEER hereby warrants that it complies with all federal immigration laws and regulations that relate to its employees and with A.R.S. §§ 23-214 and 41-4401 relating to verification of employment eligibility. A breach of this warranty shall be deemed a material breach of this Agreement. CITY retains the legal right to inspect the papers of ENGINEER to ensure that ENGINEER complies with this warranty.

C. San Luis Business License

ENGINEER shall obtain and maintain a San Luis Business License.

SECTION XVI – INSPECTION OF WORK

CITY's representative or its designee shall at all times have the right to inspect the work, services or performance of ENGINEER. ENGINEER shall furnish all reasonable aid and assistance required by CITY for proper examination of the work or services. Such inspection shall not relieve ENGINEER of any obligation to perform such services in accordance with the law or this Agreement.

SECTION XVII – NO WAIVER

ENGINEER agrees that any waiver by CITY of any breach or violation of any term or condition of this Agreement shall not be deemed to be a waiver of any subsequent breach or violation of the same or any other term or condition. The acceptance by CITY of the performance of any work or services by ENGINEER shall not be deemed to be a waiver of any term or condition of this Agreement.

SECTION XVIII – ATTORNEYS' FEES; COURT VENUE

Should either Party to this Agreement commence legal action against the other (including a formal judicial proceeding, mediation or arbitration), the case shall be handled in Yuma County, Arizona or United States District Court for the District of Arizona at the election of the plaintiff in such legal action. The Parties waive any right to object to such venue. Nothing in this paragraph will be deemed to have authorized the bringing of any legal action in a court which does not otherwise have jurisdiction to adjudicate the legal action. The Party prevailing in such action shall be entitled to reasonable attorneys' fees which shall be fixed by the judge, mediator or arbitrator hearing the case and such fees shall be included in the judgment, together with all costs.

SECTION XIX – NOTICES

A. All notices to be given under this Agreement, or which may be given by either Party to the other, shall be considered validly given and fully received when made in writing and delivered or refused delivery by means of prepaid service by:
   - deposit in the United States Postal Service by certified mail, return receipt requested, and postage prepaid,
   - personal delivery by process server or
   - sent by a nationally recognized courier (e.g., Federal Express, UPS)

B. Notices for delivery to the CITY shall be to the attention of the City Engineer, copies to the City Manager, City Attorney, and City Clerk.

C. Notices for delivery to the ENGINEER shall be to the attention of Kevin W. Payne, P.E., CFM, Senior Project Manager, 3300 E. Sunrise Dr. Suite 130, Tucson, Arizona 85718 (or successor statutory agent).

or such other addresses as either Party may from time to time designate in writing and deliver in a like manner. Any such change of address notice shall be given at least ten (10) days before the date on which the change is to become effective.

SECTION XX – DISPUTE RESOLUTION
In the event of any dispute arising under or related to this Agreement, the Parties shall first meet in good faith to attempt to resolve the dispute through direct negotiations. If the dispute cannot be resolved through such negotiations, the Parties agree to submit the dispute to confidential, non-binding mediation. The mediation shall be conducted by a mutually agreed-upon mediator, or if the Parties cannot agree, a mediator shall be appointed by a recognized mediation organization. The mediation shall occur within 21 days of the mediator's appointment and shall last no more than two business days unless otherwise agreed by the Parties. The costs of mediation shall be shared equally by the parties. Under no circumstances shall the Parties submit the dispute to arbitration, whether binding or non-binding, as a method of resolution.

SECTION XXI – TERMINATION
Either Party may terminate this Agreement upon 30 days' written notice to the other Party. In the event of such termination, CITY shall pay ENGINEER for all services performed up to the effective date of the termination. An itemized statement of the work performed to the date of termination shall be submitted to CITY. In ascertaining the services actually rendered under this Agreement up to the date of termination, consideration shall be given to both completed work and work in the process of completion and to complete and incomplete documents whether delivered to CITY or in the possession of ENGINEER.

SECTION XXII – OWNERSHIP OF DOCUMENTS
Upon completion, termination or suspension of this Agreement, all original documents, designs, drawings, maps, models, computer files, surveys, notes and other documents prepared in the course of providing the services to be performed pursuant to this Agreement shall become the sole property of CITY and may be used, reused, or otherwise disposed of by CITY without the permission of ENGINEER.

Any modifications made by the CITY to any of the ENGINEER's documents, or any use, partial use or reuse of the documents without written authorization or adaptation by the ENGINEER will be at the CITY's sole risk and without liability to the ENGINEER, and the CITY shall indemnify, defend and hold the ENGINEER harmless from all claims, damages, losses and expenses, including but not limited to attorneys' fees, resulting therefrom.

When ENGINEER creates any copyrightable material or invents any patentable property under this Agreement, CITY shall retain a royalty-free, non-exclusive and irrevocable license to reproduce, publish, recover, or otherwise use the materials or property and to authorize others to do the same.

SECTION XXIII – GOVERNING LAW AND SEVERABILITY
This Agreement shall be administered and interpreted under the laws of Arizona. Jurisdiction of litigation arising from this Agreement shall be in Arizona. If any part of this Agreement is found to conflict with applicable laws, then such part shall be inoperative and void insofar as it conflicts with such laws, but the remainder of the Agreement shall continue to be in full force and effect.

SECTION XXIV – HEADINGS
The descriptive headings of the paragraphs of this Agreement are inserted for convenience only, and shall not control or affect the meaning or construction of the provisions of this Agreement.

SECTION XXV – AUTHORITY
The undersigned represent to each other that they have full power and authority to enter into this Agreement and that all necessary actions have been taken to give full force and effect to this Agreement.

SECTION XXVI – NO THIRD-PARTY BENEFICIARIES
There are no third-party beneficiaries to this Agreement, and no person or entity not a Party shall have any right or cause of action under this Agreement.

SECTION XXVII – NO AGENCY CREATED
It is not intended by this Agreement to, and nothing contained in this Agreement shall create any agency, partnership, joint venture or other similar arrangement between the Parties.

SECTION XXVIII – NO PERSONAL LIABILITY
No member, official or employee of the CITY shall be personally liable to ENGINEER, or any successor or assignee, (a) if any default occurs or breach by the CITY, (b) for any amount which may become due to the ENGINEER or its successor or assign, or (c) under any obligation of the CITY under this Agreement. Notwithstanding anything contained in this Agreement to the

contrary, the liability of ENGINEER under this Agreement shall be limited solely to the assets of ENGINEER and shall not extend to or be enforceable against: (i) the individual assets of the individuals or entities who are shareholders, members, managers constituent partners, officers or directors of the general partners or members of ENGINEER; (ii) the shareholders, members or managers or constituent partners of ENGINEER; or (iii) officers of ENGINEER.

SECTION XXIX – SURVIVAL
All representations and warranties of ENGINEER, ENGINEER's indemnity, hold harmless and defense obligations shall survive the expiration or earlier termination of the Agreement.

SECTION XXX – TIME OF THE ESSENCE
Time is of the essence in this Agreement, and ENGINEER agrees to use the utmost diligence and dispatch to speedily to have all the work specified in this Agreement entirely completed within 90 days of issuance of Notice to Proceed. Unless otherwise specifically provided in this Agreement, any consent to delay in the performance of the ENGINEER of any obligation shall be applicable only to the particular transaction to which it relates, and it shall not apply to any other obligation or transaction.

SECTION XXXI – FURTHER ACTS
Each of the Parties shall execute and deliver all such documents and perform all such acts as reasonably necessary, from time to time, to carry out the matters contemplated by this Agreement.

SECTON XXXII – CERTIFICATION

A. SAFETY. The ENGINEER expressly agrees that it shall be solely responsible for supervising its employees and that it shall comply with all rules, regulations, orders, standards, and interpretations promulgated pursuant to the federal Occupational Safety and Health Act (known as OSHA) and any occupational safety and health act of Arizona including but not limited to training provisions of personal protective equipment; adherence to all appropriate lockout-tagout procedures and providing all notices, safety data sheets, etc., as required by the right-to-know standard.

B. NO BOYCOTT OF ISRAEL. The ENGINEER certifies, to the extent permitted by law, that it does not participate in and agrees not to participate in during the term of this Agreement in a boycott of Israel under A.R.S. § 35-393.01.

C. NO FORCED LABOR OF THE ETHNIC UYGHURS. Under A.R.S. § 35-394, ENGINEER certifies, to the extent permitted by law, that it does not currently, and agrees for the duration of this Agreement that it will not, use:

1. The forced labor of ethnic Uyghurs in the People's Republic of China.
2. Any goods or services produced by the forced labor of ethnic Uyghurs in the People's Republic of China.
3. 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.

By signing this Agreement, the ENGINEER certifies in writing that if the ENGINEER becomes aware during the term of the Agreement that the ENGINEER is not in compliance with the written certification, the ENGINEER shall notify the CITY within five business days after becoming aware of the noncompliance. If the ENGINEER does not provide the CITY with a written certification that the ENGINEER has remedied the noncompliance within one hundred eighty days after notifying the CITY of the noncompliance, the Agreement terminates, except that if the Agreement's termination date occurs before the end of the remedy period, the Agreement terminates on the Agreement termination date.

SECTON XXXIII – FORCE MAJEURE

If ENGINEER or CITY are prevented or materially restricted from performing any of their obligations under this Agreement by an event of force majeure, then the obligations of each Party shall be suspended or reduced to the extent made necessary by

the event. As used in this section, "force majeure" means any act or cause not reasonably within the control of the Party whose ability to perform is impaired and which that Party could not have prevented by the exercise of reasonable diligence. Examples of 'force majeure" include, but are not limited to, acts of God, fire, flood, explosions, strikes or labor disputes over which the affected Party has no control, sabotage, riots, civil commotion, acts of civil or military authority, wars, pandemic, either state or federally mandate health and safety matters or material changes in applicable business laws or regulations.

SECTON XXXIV – COUNTERPARTS

This Agreement may be executed in one or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument. The signature pages from one or more counterparts may be removed from such counterparts and such signature pages all attached to a single instrument so that the signature of all Parties may be physically attached to a single document. Further, ENGINEER shall provide the original, wet ink signature to the CITY for the purposes of recording this agreement.

SECTION XXXV – ENTIRE AGREEMENT

This Agreement, including its Exhibit, represents the entire understanding of CITY and ENGINEER as to those matters contained in this Agreement. No prior oral or written understanding shall be of any force or effect with respect to those matters covered in it. This Agreement may not be modified or altered except by amendment in writing signed by both Parties.

The Parties have executed this Agreement in Yuma County, Arizona, on the day and year set forth above, which is the day the last Party signed this Agreement. The original Agreement will be filed with the City of San Luis Clerk. The ENGINEER agrees that this Agreement, as negotiated, is for the stated work and understands that payment for the total work will be made on the basis of the indicated amount. The CITY shall pay to the ENGINEER, as full consideration for the faithful performance of the Agreement, subject to any additions or deductions as provided in the project documents, the sum of $136,460.00.

[Remainder intentionally left blank, signature page follows.]

City of San Luis, Arizona

_____
Nieves Riedel, City Mayor

Date: _____

Attest:

_____
Sonia Cornelio, City Clerk

Approved As to Form:

_____
Kay Marion Macuil, City Attorney

Kimley-Horn and Associates, Inc.

_____
Kevin Payne, P.E., Senior Project Manager

Date: _____

Kimley»Horn

January 27, 2026

Mr. Jorge Perez
Assistant Director of Public Works
City of San Luis, Arizona

Re: Well Site 6 Booster Pump Station Expansion Design Scope and Fee For the City of San Luis

Dear Mr. Perez:

Kimley-Horn and Associates, Inc. ("Engineer" or "Kimley-Horn") is pleased to submit this letter agreement (the "Agreement") to the City of San Luis ("City") for providing design and professional services related to the expansion of the existing booster pump station located at Well Site 6.

PROJECT DESCRIPTION

This project involves the preparation of construction drawings and permitting support for improvements to the existing booster pump station at Well Site 6 in San Luis, Arizona. Building upon recommendations from the Basis of Design Report and the hydrotank Condition Assessment Report, the project includes expanding the current facility—equipped with three (3) 600 gpm pumps—to add a second booster station with VFDs that will meet increased demand associated with new development and long-term growth on the east side of the City and allow for removal of the hydropnuematic tanks from this site. The improvements will extend the existing service fingerprint to better serve the surrounding area and will incorporate future-oriented electrical planning and upgrades, as the existing electrical equipment is operating near capacity. These enhancements are intended to provide reliable system performance today while establishing the necessary infrastructure to support future demand and operational needs.

SCOPE OF SERVICES

Task 1. Project Management

Project management includes contract management, schedule, invoicing, internal meetings with staff, Quality Control/Quality Assurance, CADD maintenance, and discipline coordination.

Kimley-Horn will attend the following meetings as a part of this project:

- Up to two comment resolution meetings (2 Kimley-Horn staff attending virtually).

Any meetings beyond those listed above will be considered additional services.

Task 2. Pre-Design Services

Kimley-Horn will provide procurement support and review of shop drawing submittals for the procurement of long lead items that the City would like to purchase prior to the completion of design. Kimley-Horn will help to identify long lead items and specify the requirements and identify potential manufacturers so that City staff can purchase these items. Identification of these items is based solely on our best professional judgment and the market information available at the time, and some long-lead items may not be identified or may experience changes in availability. Any early procurement by the City cannot be guaranteed to arrive before construction, though the Consultant will coordinate with the City and manufacturers/vendors to recommend acceptable products with favorable lead times to help secure suitable materials when they are needed.

These services are assumed not to exceed twenty-four (24) hours of senior-level staff time and twelve (12) hours of professional-level staff time, based on the following assumptions:

- Review of up to five (5) shop drawing submittals.
- One (1) site visit to verify that the dimensions of proposed replacement equipment are compatible with existing electrical infrastructure, including conduits, wiring, and related appurtenances.

In addition, Kimley-Horn will prepare a preliminary site layout for City review. Upon receipt of City approval of the preliminary site layout, Kimley-Horn will proceed with development of the 90% design documents.

- One (1) virtual site layout pre-design meeting is included.

Task 3. Construction Documents

Kimley-Horn will prepare 90% and Final Sealed Design drawings, as-needed specifications and opinion of probable construction cost (OPCC) for the well site improvements. All design and construction documents will be prepared in accordance with applicable MAG Standards and Details. Anticipated sheets include:

1. Cover Sheet
2. General Notes and Legend Sheet
3. Site Plan
4. Booster Pump Station Plan and Sections
5. Booster Pump Station Details
6. Miscellaneous Details and Connections
7. General Structural Notes (as needed)
8. Structural Details (as needed)
9. Foundation and Framing Details (as needed)
10. Electrical Legends
11. Site One Line Diagram

12. Panel Schedules
13. Electrical Plans
14. Electrical Details

(Final sheet count and content may be adjusted as the design advances.)

Kimley-Horn will prepare detailed electrical drawings identifying equipment planned for replacement as well as existing equipment to remain in place and be protected during construction. The electrical design will include coordination of required electrical service upgrades and modifications necessary to support the booster pump system improvements, including coordination with Arizona Public Service (APS), the serving electric utility.

Kimley-Horn assumes one review cycle at the 90% submittal stage. During these stages, any comments received from the City will be addressed and incorporated into the respective design phase. The City will be responsible for providing all necessary survey data and conducting the geotechnical investigation required for completing the design.

Selection of pumps will be confirmed with pump manufacturer during the development of drawings.

Task 4. Post-Design Services

Kimley-Horn will prepare and assemble the complete ADEQ permitting submittal package, including required application forms, technical documentation, and supporting design materials. Kimley-Horn will submit the application to ADEQ on the City's behalf and coordinate agency review comments, including preparation of any required revisions and resubmittals. The City will be responsible for payment of all ADEQ permit fees associated with each submittal and resubmittal, as applicable.

Kimley-Horn will also provide the following bid phase assistance. These services are assumed not to exceed six (6) hours of senior-level staff time and fourteen (14) hours of professional-level staff time:

- Prepare bid schedule
- Answer contractor questions
- Review bids and recommend award

In addition, Kimley-Horn will provide the following construction phase services, based on the assumptions noted below:

- Review of submittals (assumed up to eight (8) submittals).
- Respond to requests for information (RFIs) and issue clarifications or interpretations of the Contract Documents, as appropriate (assumed up to four (4) RFIs).
- Provide special inspections for electrical and mechanical equipment, including verification that equipment installation, anchorage, connections, and associated

components comply with the approved construction documents, manufacturer requirements, and applicable codes (assume 2 electrical/mechanical special inspection site visits).
- Provide structural special inspections, including verification of reinforcing steel placement prior to concrete placement to confirm rebar size, spacing, cover, and installation comply with the approved construction documents and applicable codes (assume 2 structural special inspection site visits).
- Attend pump station start-up and commissioning activities (assumed to occur on the same day; one (1) site visit).

ADDITIONAL SERVICES

Any services not specifically provided for in the above scope will be billed as additional services and performed at our then current hourly rates. The list of additional services included but are not limited:

- Additional meetings and site visits
- Water quality sampling
- Environmental investigation
- Topographical survey
- Subsurface Utility Engineering (SUE)
- Geotechnical investigation
- Hydraulic modeling
- Archaeological services
- Cathodic protection design
- Easement acquisition or ROW services
- Traffic control
- Erosion control
- Bid phase services (addendums, construction contract)
- As-built drawings

INFORMATION PROVIDED BY CLIENT

We shall be entitled to rely on the completeness and accuracy of all information provided by the Client or the Client's consultants or representatives. The Client shall provide all information requested by Kimley-Horn during the project, including but not limited to the following:

- As-builts
- Survey Data
- Geotechnical Investigation (if required)
- O&M equipment data

- Prior calculations for site power, including load calculations and power quality/harmonics
- Existing cable sizing and condition assessment to confirm of conduits and cables suitability for re-use

SCHEDULE

The proposed schedule is tentative and is dependent on receipt of a formal Notice to Proceed from the City as well as the timely provision of all requested information and supporting data necessary to advance the design. The schedule is subject to change based on these factors and any unforeseen conditions that may arise during the project.

Milestone/Deliverable	Duration
Notice to Proceed	1 day (Assume February 16, 2026)
Preliminary Site Layout	2 weeks
90% Design	4 weeks
City Review	1 week
Final Sealed Design	2 weeks
Permitting Documentation	2 weeks

FEE AND EXPENSES

Kimley-Horn will perform the services in this scope for the total lump sum fee of $**136,460.00**. Individual task amounts are informational only. Kimley-Horn reserves the right to reallocate amounts among tasks as necessary. All permitting, application, and similar project fees will be paid directly by the Client.

CLOSURE

We appreciate the opportunity to provide these services to you. Please contact me if you have any questions at 520-278-2678 and alejandra.fraijoarce@kimley-horn.com.

Very truly yours,

KIMLEY-HORN AND ASSOCIATES, INC.

Kimley»Horn

By: Alejandra Fraijo Arce, P.E.
Project Manager

Kevin Payne, PE, CFM
Senior Project Manager (Authorized Signer)

cc: Fee

City of San Luis
Well Site 6 Booster Pump Station Improvements
Design Fee Proposal

TASK DESCRIPTION	SUBTOTAL	PM/Senior Professional II $ 240.00	Senior Professional $ 210.00	Professional $ 170.00	Designer $ 150.00	Analyst $ 125.00	Project Accountant $ 105.00	Admin Support $ 105.00
Task 1. Project Management	**$ 5,720.00**	**18**	**2**	**4**	**2**	**0**	**0**	**0**
Review Meetings (up to 2)	$ 1,400.00		2	4	2			
Project AdminIstration	$ 4,320.00	18						
Task 2. Pre-Design Services	**$ 18,660.00**	**0**	**36**	**30**	**40**	**0**	**0**	**0**
Procurement Assistance & Shop Drawing Review	$ 10,380.00		30	24				
Preliminary Site Layout Preparation	$ 8,280.00		6	6	40			
Task 3. Construction Documents	**$ 75,320.00**	**0**	**28**	**72**	**48**	**400**	**0**	**0**
Civil/Mechanical	$ 29,860.00		6	40	12	160		
Structural	$ 11,680.00		2	8	16	60		
Electrical	$ 33,780.00		20	24	20	180		
Task 4. Post Design Services	**$ 49,420.00**	**10**	**90**	**136**	**0**	**40**	**0**	**0**
Permitting	$ 7,460.00		2	12		40		
Bid Phase Assistance	$ 3,640.00		6	14				
Review of Submittals	$ 7,440.00		16	24				
RFI	$ 6,080.00		16	16				
Special Inspections (Assumes 4)	$ 18,600.00		40	60				
Pump Station Start-Up and Commissioning	$ 6,200.00	10	10	10				
SUBTOTAL DIRECT LABOR	**$ 130,460.00**	**28**	**156**	**242**	**90**	**440**	**-**	**-**

EXPENSES	
Pre-Design Services Site Visit (1 Round-trip)	$ 1,000.00
Special Inspections (4 Round-trips)	$ 4,000.00
Pump Station Start-Up and Communissioning (1 Round-trip)	$ 1,000.00
EXPENSE SUBTOTAL	**$ 6,000.00**

	SUBTOTAL
TOTAL PROJECT	**$ 136,460.00**

AGENDA ITEM REVIEW FORM

Regular City Council Meeting **7. E.**

Meeting Date: 02/11/2026

Department Head: Joe Estes, City Attorney, Attorney's Office

Submitted By: Justin Neuman, Paralegal, Attorney's Office

Action Requested: Motion
Resolution

ITEM:

Discussion and possible action on any and all matters regarding Resolution No. 2392. A Resolution of the Mayor and City Council of the City of San Luis, Arizona, approving the intergovernmental agreement between the City of San Luis and Gadsden Elementary School District for the use of City facilities for reunification drills. **(Jenny Torres, Acting City Manager)**

SUMMARY:

The Gadsden Elementary School District has requested permission to use Joe Orduño Park to conduct its school reunification drills. These drills are to be conducted once per school year, per school, and help both parents and students understand the procedure for reuniting in the event of an emergency. The purpose of this IGA is to ensure that these drills are conducted safely and efficiently, with proper coordination between the City and the Gadsden Elementary School District.

Under the IGA, the city's approval must be by resolution. There is no cost associated with this IGA.

RECOMMENDATION / SUGGESTED MOTION:

I MOVE TO APPROVE AND ADOPT RESOLUTION NO. 2392.

Fiscal Impact

IS THERE FISCAL IMPACT ASSOCIATED WITH THIS ITEM:	N/A
CITY/STATE/FEDERAL FUNDS:	N/A
TOTAL:	N/A
BUDGETED AMOUNT:	N/A
AVAILABLE AMOUNT TO TRANSFER:	N/A
ACCT NAME & GL#/REMAINING BALANCE BEFORE PURCHASE:	N/A

FISCAL IMPACT STATEMENT (IF THIS IS A BUDGET TRANSFER, YOU MUST ATTACH THE BUDGET ADJUSTMENT FORM):

N/A

Attachments

Resolution No. 2392

OFFICE OF THE
MAYOR
CITY OF SAN LUIS

Resolution

No. 2392

A RESOLUTION OF THE MAYOR AND COUNCIL OF THE CITY OF SAN LUIS, ARIZONA, APPROVING AN AGREEMENT BETWEEN THE CITY OF SAN LUIS, ARIZONA AND GADSDEN ELEMENTARY SCHOOL DISTRICT FOR THE USE OF CITY FACILITIES FOR REUNIFICATION DRILLS

WHEREAS, the City of San Luis desires to allow Gadsden Elementary School District to use city facilities for the purpose of reunification drills; and

WHEREAS, the parties to the intergovernmental agreement desire to enter said agreement; and

NOW THEREFORE BE IT RESOLVED by the Mayor and City Council of the City of San Luis, Arizona as follows:

Section 1: That the Intergovernmental Agreement, as attached hereto as Exhibit "A", is hereby authorized and approved.

Section 2: That the appropriate City Officials are hereby authorized and directed to enter into said agreement on behalf of the City and take any and all actions as may be necessary to effectuate said agreement.

PASSED, ADOPTED, and APPROVED by the Mayor and City Council of the City of San Luis, Yuma County, Arizona, this ___ day of February, 2026.

_____
Nieves Riedel, Mayor

ATTEST:

_____
Sonia Cornelio, City Clerk

APPROVED AS TO FORM:

_____
Joseph Estes, City Attorney

Exhibit

A

INTERGOVERNMENTAL AGREEMENT
BETWEEN
GADSDEN ELEMENTARY SCHOOL DISTRICT
AND
CITY OF SAN LUIS

This Intergovernmental Agreement ("Agreement") is entered into as of the __ day of _____, 2026, by and between Gadsden Elementary School District, a political subdivision of the State of Arizona (the "District") and the City of San Luis, a municipal corporation of the State of Arizona (the "City) (cumulatively the "Parties," individually each being a "Party").

WHEREAS, the Parties are authorized to enter into this Agreement pursuant to A.R.S. §§ 11-952 and 15-342;

WHEREAS, the District wants to allow the City to use certain District facilities, including buildings and parks, under the terms and conditions set forth herein;

WHEREAS, the City wants to allow the District to use certain City facilities, including buildings and parks, under the terms and conditions set forth herein;

NOW THEREFORE, in consideration of the mutual agreements set forth herein, the Parties agree as follows:

1. Purpose

The purpose of this Agreement is to establish the terms and conditions under which the District may use facilities belonging to the City and the City may use facilities belonging to the District.

2. Term

This Agreement shall commence and be effective from September 18, 2025, and shall be for a period of five (5) years, with the possibility of renewal upon agreement of the Parties in writing, unless terminated by either Party as provided for in this Agreement. Payment, performance, and obligations for any fiscal period are subject to the availability and appropriation of monies.

3. Termination

Either Party may, at any time and without cause, terminate this Agreement by providing sixty (60) days written notice of intent to terminate. Unless otherwise agreed upon in writing by the Parties, all property purchased by the District under this Agreement shall remain the property of the District and shall be returned to the District when no longer in use or upon termination of this Agreement, whichever is sooner. Unless otherwise agreed upon in writing by the Parties, all property purchased by the City under this Agreement shall remain the property of the City and

shall be returned to the City when no longer in use or upon termination of this Agreement, whichever is sooner.

4. Mutual Responsibilities

a. The Parties shall each designate appropriate liaisons for implementation of this Agreement and agree to notify the other within fourteen (14) days of any change in their designated liaison.

c. The Parties agree to comply with all applicable Federal, State, and local laws, including those prohibiting discrimination.

d. Neither Party shall use the name of the other Party or its employees in any publicity or advertising material without prior written approval by a duly authorized representative of the other Party.

5. City Responsibilities

a. The City shall:

b. Allow the District use of Joe Orduño Park, 965 Park Avenue, San Luis, AZ for the purposes of conducting school reunification drills. The drills shall be limited to one (1) per school per year and be conducted in accordance with the District's approved Emergency Operations Planning.

c. Allow full access to necessary facilities during the drill, such as restrooms and parking.

d. Endeavor to allocate personnel and resources to support the drill, subject to the availability of such resources and the City's operational priorities. District acknowledges that the City's primary obligation is to public safety and that this provision of services for the drill is secondary to any emergent needs that may occur.

6. District Responsibilities

a. The District shall:

b. In response to an actual or imminent emergency affecting public health, safety, or welfare (an "Emergency"), allow the City use of the District's facilities in accordance with the City's approved Emergency Operations Planning. Prior to any Emergency, the parties shall in good faith identify and document the Facilities eligible for emergency use, including any access routes, utility points, capacity limits, and sensitive or restricted areas.

c. Conduct the aforementioned drills in accordance with the Emergency Operating Plan, attached and incorporated herein as Exhibit "A".

7. Cancellation for Conflict of Interest

This Agreement is subject to the conflict of interest provisions of A.R.S. § 38-511, the terms of which statute are deemed to be incorporated herein by reference.

8. Non-Discrimination

The Parties shall comply with Executive Order 2009-09 and all other applicable State and Federal employment laws, rules, and regulations mandating that all persons shall have equal access to employment opportunities, and that no person shall be discriminated against due to race, creed, color, religion, sex, national origin, or disability.

9. Insurance

The District and the City each represent and warrant to the other that it shall at all times maintain adequate insurance to cover any liability arising from the acts and omissions of its agents and employees arising out of the performance of this Agreement. Neither Party shall be responsible for maintaining insurance coverage for liability arising from the acts and omissions of the employees or agents of the other Party. The minimum insurance Parties shall maintain pursuant to this agreement shall meet or exceed the following standards:

Commercial General Liability – Occurrence Form	General Aggregate	$2,000,000	
	Products-Completed Operations Aggregate	$1,000,000	
	Personal and Advertising Injury	$1,000,000	Policy shall contain a waiver of subrogation against the City of San Luis for losses arising from the performance of this agreement.
	Each Occurrence	$1,000,000	
Business Automobile Liability	Combined Single Limit (CSL)	$1,000,000	
Worker's Compensation and	Workers' Compensation	Statutory	

Employer's Liability			
	Employer's Liability		
	Each Accident	$1,000,000	
	Disease – each employee	$1,000,000	
	Disease - policy limit	$1,000,000	

10. Employees

The employees of the City who participate in the provision of services under this agreement shall not be considered as employees of the District, and employees of the District shall not be considered employees of the City. Accordingly, employees of one Party shall not be entitled to employee benefits normally provided to bona fide employees of the other party. Nothing in this Agreement or its performance except as provided in A.R.S. § 23-1022(D) shall be construed to result in any person being the officer, agent, employee, or servant of either party when such person, absent this Agreement and the performance thereof, would not in law have such status.

11. Mutual Indemnification

Each Party (as "Indemnitor") agrees to indemnify, defend, and hold harmless the other Party and its officers, officials, agents and employees (collectively "Indemnitee") from and against any and all claims, losses, liability, costs, or expenses (including reasonable attorney fees), hereinafter collectively referred to as "claims," arising out of bodily injury of any person (including death) or property damage, but only to the extent that such claims which result in vicarious/derivative liability to the Indemnitee, are caused by the acts, omissions, negligence, misconduct, or other fault of the Indemnitor, its officers, officials, agents, employees, or volunteers.

12. Applicable Law

This Agreement shall be subject to and interpreted under the laws of the State of Arizona. In the event of any litigation that in any way relates to or arises out of the subject matter of this Agreement, the Parties hereby consent to the personal jurisdiction of the state court of Arizona, and further agree that the venue of any such litigation shall be exclusively limited to the state court located in Yuma County, Arizona. The prevailing party in any litigation arising under this Agreement shall be entitled, in addition to all other relief, to reasonable attorneys' fees and costs incurred in the litigation.

13. Mediation

Neither Party may file a claim against the other without first participating in good faith in mediation with a trained and impartial mediator. The Parties shall equally share the expenses of

the mediator; however, each Party shall bear its own costs for presentation before the mediator, including the costs incurred by the Party for representation by an attorney at the mediation, if such representation is desired.

14. Record Retention and Inspection

The Parties shall retain, and shall contractually require each subcontractor to retain, all books, accounts, reports, files, and other records relating to the performance of this Agreement for a period of five (5) years after the completion of the Agreement and make such documents open to inspection and audit at reasonable times.

15. Fingerprint Clearance

Each Party warrants and agrees that its employees, contractors, and subcontractors who may have unsupervised contact with District students shall comply with the fingerprinting requirements of A.R.S. § 15-512 and that such fingerprint clearance will remain in effect throughout the term of this Agreement.

16. Employee Worker Eligibility

By entering into this Agreement, both Parties warrant compliance with A.R.S. §§ 41-4401 and 23-214(A), the Federal Immigration and Nationality Act (FINA), and all other Federal immigration laws and regulations at all times when operating in the State of Arizona. Either Party may request verification of compliance from any contractor or subcontractor performing work under this Agreement.

17. Notice

Any notice or modification required or permitted hereunder shall be in writing and shall be deemed given if delivered in person or three days after mailing by United States registered or certified mail, postage prepaid, and addressed as follows:

To the City:

City of San Luis
1090 E. Union St.
P.O. Box 1170
San Luis, AZ 85349

To the District:

Gadsden Elementary School District
1350 E. Cesar Chavez Blvd.
P.O. Box 6870
San Luis, AZ 85349

18. Entire Agreement

This Agreement constitutes the entire agreement between the District and the City. Any changes or modifications shall be accomplished by amendment to this Agreement executed by the duly authorized representative of the Parties.

19. No Creation of Third-Party Rights

The terms of this Agreement are intended only to define the respective rights and obligations of the Parties. Nothing expressed herein shall create any rights or duties in favor of any potential third-party beneficiary or other person, agency, or organization.

20. Severability

The Parties agree that should any part of this Agreement be held to be invalid or void, the remainder of the Agreement shall remain in full force and effect with those offending portions omitted.

21. Authority to Execute Agreement

The persons executing this Agreement on behalf of the Parties hereby represent and guarantee that they have been authorized to do so on behalf of the entity they represent. Further representation is made that due diligence has occurred, and that all necessary internal procedures and processes, including compliance with the open meeting law where necessary, have been satisfied in order to legal bind the entity to the terms of this Agreement.

22. Counterparts

This Agreement may be executed in multiple counterparts, each of which shall constitute an original and together shall constitute the Agreement. The District shall provide the City with the original wet ink signature for the purpose of recording with the County Recorder's Office.

[Signature Page Follows.]

IN WITNESS HEREOF, the Parties sign this Agreement:

DATED this __ day of _____, 2026 upon resolution of the Gadsden Elementary School District Governing Board approving this Agreement and authorizing its Superintendent to sign below:

Gadsden Elementary School District

By:_____
Lizette Esparza

Its: Superintendent

DATED this __ day of _____, 2026 upon resolution of the San Luis City Council approving this Agreement and authorizing its representative to sign below:

City of San Luis

By:_____
Jenny Torres

Its: Acting City Manager

Attorney Approval:

This Agreement has been reviewed pursuant to A.R.S. § 11-952 by the undersigned attorneys, who have determined that it is in proper form and is within the powers and authorities granted under the laws of the State of Arizona to their respective clients.

By:_____
Counsel for the District

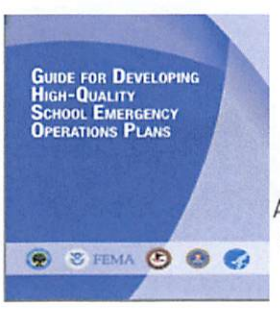
By:_____
Counsel for the City

Exhibit

A

Gadsden Elementary School District #32

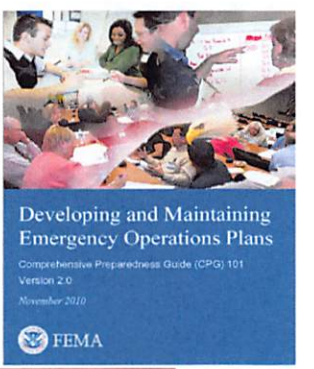
- **BASIC PLAN**
- **EMERGENCY OPERATIONS PLAN (EOP)**



ARIZONA DEPARTMENT OF HEALTH SERVICES

ARIZONA Department of Education

Arizona Department of Emergency and Military Affairs



Gadsden Elementary School District #32
Emergency Operations Plan
Adopted Date:

EOP BASIC PLAN

AGENCY/DEPARTMENT–FOCUSED EOP FORMAT

BASIC PLAN

- **a) INTRODUCTION MATERIALS**
  - i. Promulgation Document/Signatures
  - ii. Approval and Implementation
  - iii. Record of Changes
  - iv. Record of Distribution
  - v. Table of Contents
- **b) PURPOSE, SCOPE SITUATION OVERVIEW AND ASSUMPTIONS**
  - i. Purpose
  - ii. Scope
  - iii. Situation Overview
    - a. Hazard Analysis Summary
    - b. Capability Assessment
    - c. Mitigation Overview
  - iv. Planning Assumptions
- **c) CONCEPT OF OPERATIONS**
- **d) ORGANIZATION AND ASSIGNMENT OF RESPONSIBILITIES**
- **e) DIRECTION, CONTROL AND COORDINATION**
- **f) INFORMATION COLLECTION, ANALYSIS AND DISSEMINATION**
- **g) COMMUNICATION**
- **h) ADMINISTRATION, FINANCE AND LOGISTICS**
- **i) PLAN DEVELOPMENT AND MAINTENANCE**
- **j) AUTHORITIES AND REFERENCES**

SECTION II: FUNCTIONAL ANNEX SPECIFIC PROCEDURES

SECTION III: THREAT/HAZARD SPECIFIC PROCEDURES

APPENDIX "A": RESPONSE AND DEPARTMENT CHECKLISTS

APPENDIX "B": LEAD AGENCY WORKSHEETS

APPENDIX "C": SUPPORT/COORDINATING WORKSHEETS

EOP BASIC PLAN

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EOP BASIC PLAN

I. INTRODUCTION MATERIAL

A. PROMULGATION STATEMENT

The Emergency Operations Plan (EOP) and supporting materials, is a guide to how the School conducts all-hazards response. To clarify, all-hazards events (please refer to EOP Section III: Threat/Hazard Specific Procedures) are typically associated with the following categories:

- **Natural Hazard** - These events are emergencies caused by forces extraneous to man in elements of the natural environment. (e.g., earthquake, flood, hazardous weather, public health emergency).
- **Technological Hazard** - These incidents involve materials created by man and that pose a unique hazard to the general public and environment. The jurisdiction needs to consider incidents that are caused by accident (e.g., mechanical failure, human mistake), result from an emergency caused by another hazard, or are caused intentionally. (e.g., infrastructure/utility disruption, radiological, or hazardous material release).
- **Human-caused** - These are disasters created by man, either intentionally or by accident. (e.g., criminal or violent behavior, intruder, civil unrest, active shooter, terrorism).
- **Biological Hazard** – These incidents include infectious diseases such as pandemic influenza and meningitis, contaminated food outbreaks, and toxic materials released in and/or near the school facility.

More guidance on all-hazards planning may be found in Section III: Threat/Hazard Specific Procedures.

The EOP is written in support of emergency management and is built upon the National Response Framework as scalable, flexible, and adaptable coordinating structures to align key roles and responsibility. This plan and contents within shall apply to all **Gadsden Elementary School District** administration, staff, and students, and others participating in protection, prevention, mitigation, preparedness, response and recovery efforts. Furthermore, it is recommended that community partners supporting EOP procedures maintain their own procedures and actively participate in the training, exercise, and maintenance needed to support this plan.

This plan is intended to capture specific authorities and best practices for managing incidents from the serious but purely local, to large-scale community or regional events, or catastrophic in nature.

Most emergencies follow some recognizable build-up period during which actions can be taken to achieve an appropriate state of maximum readiness. General actions are detailed in the appropriate sections of this document; however, it is acknowledged that disasters are unique occurrences, which require specific resources dependent upon the type, nature, and extent of the emergency. In this regard, this document is not all-inclusive, nor does it limit or restrict reasonable or prudent actions.

EOP BASIC PLAN

This EOP was prepared by **Gadsden Elementary School District** staff and approved by senior administration, enabling activities contained within this document to be performed within the school capability. Furthermore, this EOP has been distributed internally within the **Gadsden Elementary School District** and with external agencies that may be affected by its implementation.

The **Gadsden Elementary School District** stipulates that no guarantee is implied by this EOP of a perfect response system. As personnel and resources may be overwhelmed, the **Gadsden Elementary School District** can only endeavor to make every reasonable effort to respond to the situation, with the resources and information available at the time.

B. APPROVAL AND IMPLEMENTATION

This plan shall apply to all **Gadsden Elementary School District** students, faculty, and staff and others participating in protection, prevention, mitigation, preparedness, response, and recovery efforts. Furthermore, the EOP may be applied to any school-sponsored events, whether on or off property, and all public or private school-sanctioned activities.

The **Gadsden Elementary School District**, Superintendent, Associate Superintendent, Principals or designee, shall be responsible for plan oversight and coordination with applicable community partners. This EOP is based on the "all-hazards" concept and plans for natural, technological, biological, and human-caused disasters and incidents. The plan is flexible in that part of the plan or the entire plan may be activated based on the specific emergency and decision by school leadership.

This EOP and its supporting contents are hereby approved, supersedes all previous editions formerly referred to as the **District-Wide Emergency Plan** and is effective immediately upon the signing of signature authority noted below.

Approval Signature: _____,
Superintendent

District/School Name: Gadsden Elementary School District #32

Date: _____

DISTRICT LEVEL SIGNATURE PAGE AND

ACKNOWLEDGEMENT OF RECEIPT BY COMMUNITY PARTNERS

Superintendent: _____

Approval Signature: _____
Superintendent

District Name: _____

Date: _____

Your signature on this receipt indicates that you have received a copy of the **Gadsden Elementary School District's** Emergency Operations Plan. It does not signify approval, review, or agreement on the part of you or your organization, or the City/County of San Luis, AZ/Yuma County to adhere to the contents within. It is for informational purposes only. This plan remains the property of the **Gadsden Elementary School District**, which reserves the right to modify it at any time.

Representative's Name (print): _____ Title: _____
City of San Luis, AZ Law Enforcement Agency

Signature: _____ Date: _____
(Law Enforcement Agency Representative)

Representative's Name (print): _____ Title: _____
City of San Luis, AZ Fire Services Agency

Signature: _____ Date: _____
(Fire Services Agency Representative)

Name (print): _____ Title: _____
City of San Luis, AZ Emergency Management Agency

Signature: _____ Date: _____
(City/County Emergency Management Agency Representative)

Name (print): _____ Title: _____
Yuma County Public Health Department

Signature: _____ Date: _____
(County Public Health Department Representative)

II. PURPOSE, SCOPE, SITUATION, AND ASSUMPTIONS

A. PURPOSE

The purpose of the **Gadsden Elementary School District** Emergency Operation Plan is to outline the school's approach to emergency operations and to enable local, state and federal coordination in addition to public/private support. It provides general guidance for emergency management activities. The EOP and its contents describe the school emergency response organization and assigns responsibilities for various emergency tasks. Specific support materials found in the EOP Sections beyond the Basic Plan, or in annexes and appendices, may describe details of who does what, when and how, or provides additional information in support of potential emergency response actions. Additionally, the EOP describes capabilities and resources, as well as establishes responsibilities and operational processes, to help protect the school from natural, technological, biological, and human-caused hazards; with the primary objectives to save lives and protect public health, property, and the environment, and, reduce adverse psychological consequences and disruptions.

Although emergencies/disasters and catastrophic incidents typically result in impacts far beyond the immediate or initial incident area, the EOP provides a framework to enable the management of cascading impacts and multiple incidents as well as the prevention of and preparation for subsequent events.

The **Gadsden Elementary School District** Emergency Operation Plan supports the school and the district general operating procedures. It is the responsibility of those referenced in this plan to integrate their departmental policy, procedures, and emergency management activities such as task performance and organization, while also participating in training, exercises and plan integration and maintenance needed to support a collective process.

Additionally, the Plan:

- Empowers employees in an incident to act quickly and knowledgeable;
- Informs students, faculty, and staff, and trains key stakeholders on their roles and responsibilities before, during, and after an incident;
- Provides other members of the community with assurances that the **Gadsden Elementary School District** has established policy and procedures to respond to incidents/hazards in an effective way;
- Establishes intra-agency and multi-jurisdictional mechanisms for involvement in, and coordination of, incident response and recovery operations;
- Provides guidance for emergency operations and the utilization of all available **Gadsden Elementary School District** and government resources for the protection of lives, property, and the continuance of school operations in an emergency.

B. SCOPE

It is the school's Principal/Superintendent that is the responsible authority to direct the response involving an incident occurring on property, or at any **Gadsden Elementary School District** event sponsored or sanctioned.

This plan and all contents contained herein shall apply to all **Gadsden Elementary School District** students, faculty, staff and visitors, and others participating in protection, prevention, mitigation, preparedness, response and recovery efforts. An incident or event influencing **Gadsden Elementary School District** may also affect the surrounding community; therefore, this plan shall support community emergency operations and any supporting Memorandums of Understanding (MOU) and/or Memorandums of Agreement (MOA).

The scope of the EOP applies to incidents and/or events of all sizes, including those that exceed the school response services and capabilities that may result in activation of the local emergency operations center. MOUs/MOAs in coordination with additional support requested from local, state, and federal entities may be activated.

The **Gadsden Elementary School District** EOP outlines the expectations of faculty and staff; roles and responsibilities; direction and control systems; internal and external communications; training and sustainability of the EOP; authority and references as defined by local, state, and federal government mandates; common and specialized procedures; and specific hazard vulnerabilities and response/recovery for **Gadsden Elementary School District.**

C. SITUATION OVERVIEW

Gadsden Elementary School District is a stakeholder in the local and state disaster risks. The **Gadsden Elementary School District** is exposed to hazards, which have the potential for disrupting the school community and causing widespread damage and casualties. Such hazard exposure may include geographic location, population concentration to include demographics, buildings, rail, air and highway traffic. Other risk factors may include: floods, tornadoes, terrorist activities, fires, explosions, transportation accidents, pandemic and other infectious diseases, shooting, school collapse, tornado, bomb threats, hostage situation, utility outage, neighborhood disturbance, food poisoning, armed intruder, etc.

The school works with the law enforcement, county health department, fire services and emergency management staff of the city of San Luis, AZ and Yuma county when deemed appropriate by the district/school. A cooperative working relationship and team approach between the school and municipal governments for emergency response is seen as a major responsibility for which the school supports. Prevention, protection, response, and recovery capability consideration, along with the adequate training, equipment, and personnel needs may be coordinated.

The district/schools are dependent upon the local municipalities and county for fire suppression and rescue services, major hazardous material response capabilities, EMS, bomb squad response, public health guidance, law enforcement tactical responses, support from emergency management, and assistance in emergency operations staffing.

The **Gadsden Elementary School District** has assigned **Associate Superintendent - Lina Galvan** to address emergency preparedness. In addition to supporting local, private, and community partners and to the degree possible, the school has adopted and supports FEMA emergency management practices,

protection, prevention, mitigation, preparedness, response and recovery in their planning process, and is committed to developing and exercising plans in addition to training and exercising with local populations.

D. PLANNING ASSUMPTIONS

The **Gadsden Elementary School District** EOP is based on the following planning assumptions and considerations as presented in this section.

- Any employee of **Gadsden Elementary School District** may be tasked by this EOP.
- School officials and representatives recognize their responsibilities for the safety and well-being of students, staff, and visitors; and assume their responsibilities in the implementation of this EOP.
- External resources may be requested to assist the school.
- In most cases, law enforcement or fire service personnel will assume Incident Command, or establish a unified command, depending on the type of emergency.
- Incident management activities will be initiated and conducted using the Incident Command System, contained in the National Incident Management System (NIMS).
- Outside assistance will likely be available in most emergencies affecting the school. Although these procedures define procedures for coordinating such assistance, it is essential for the school to be prepared to carry out disaster response and short-term actions on an independent basis, or in the event, the incident is community or region wide.
- It is possible for a major disaster to occur any time and any place in or near the school. In some cases, timely dissemination of warnings and increased readiness measures may be possible. However, many disasters can, and may occur with little or no warning.
- Proper implementation and understanding of these procedures through training and exercising will reduce or prevent disaster-related losses.
- Emergencies on the school grounds may involve multiple responding departments and agencies including, but not limited to, local law enforcement, county health department, fire services, emergency management, environmental health and safety, emergency medical services, and appropriate school, city, county, state and federal agencies.
- Other schools operating on the **Gadsden Elementary School District** property shall coordinate their emergency actions with this EOP.

III. CONCEPT OF OPERATIONS

A. GENERAL

It is the responsibility of the school/district to protect life and property from the effects of emergency situations within its own jurisdiction. **Gadsden Elementary School District** has the primary responsibility for initial emergency management activities. Concept of Operations information located in this section is designed to give an overall picture of incident management. It will primarily clarify the

purpose, and explain the school's overall approach to an emergency (i.e., what should happen, in what sequence and at whose direction).

Top priorities for incident management are to:

- Protect and save lives, and protect the health and safety of students, faculty, staff, visitors, responders, and recovery workers.
- Protect property and mitigate damages and impacts to individuals, the community, and the environment.

An emergency, as used in this plan, is intended to describe a range of situations, from an incident to a major disaster. It includes the following:

INCIDENT - An incident is a situation that is limited in scope and potential effects.

EMERGENCY - An emergency is a situation that is larger in scope and more severe in terms of actual or potential effects than an incident.

DISASTER - A disaster involves the occurrence or threat of significant casualties and/or widespread property damage that is beyond the capability of the local government to handle with available local resources.

This EOP is based on the "all-hazards" concept and is flexible in that part of the plan or the entire plan may be activated based on the specific emergency and decision by school leadership.

The school concept of operations is that the emergency functions of various departments and agencies involved in emergency management will generally parallel normal day-to-day functions or operations.

Day-to-day functions that do not contribute directly to the emergency may be suspended for the duration of any emergency. The efforts that would normally be required for those functions will be redirected to the accomplishment of emergency tasks by the school.

The **Gadsden Elementary School District** EOP addresses preparedness activities embedded within the key areas of emergency planning.

B. KEY AREAS OF EMERGENCY PLANNING AND INCIDENT MANAGEMENT

In the event of an incident, the **Gadsden Elementary School District** will utilize these definitions (The Guide—p. 2) that are predicated on an all-hazard approach. There is acknowledgement that most responsibilities and functions performed during an emergency are not hazard specific. Likewise, these procedures account for activities pre-incident, incident, and post-incident; consequently, key areas are noted as the following:

1. **Prevention** – Consists of actions that reduce risk from human-caused incidents. Prevention planning can also help mitigate secondary or opportunistic incidents that may occur after the primary incident.
2. **Protection** – Reduces or eliminates a threat to people, property and the environment. Primarily focused on adversarial incidents, the protection of critical infrastructure and key resources (CIKR) is vital to local jurisdictions, national security, public health and safety and economic vitality.

3. **Mitigation** – Mitigation activities are those which eliminate or reduce the probability of a disaster occurring. Also included are those long-term activities which lessen the undesirable effects of unavoidable hazards.
4. **Response** – Response is the actual provision of emergency services during a crisis. These activities help to reduce casualties and damage, and speed recovery. Response activities include evacuation, rescue, and other similar operations.
5. **Recovery** – Recovery is both a short-term and long-term process. Short-term operations seek to restore vital services to the School and provide for the basic needs of students, faculty, and staff. Long-term recovery focuses on restoring the School to its normal pre-disaster, or an improved, state of affairs. The recovery period is also an opportune time to institute future mitigation measures, particularly those related to the recent emergency.

C. NATIONAL INCIDENT MANAGEMENT SYSTEM (NIMS)

NIMS provides a consistent, standardized approach to incident management at all jurisdictional levels regardless of the cause, size, or complexity of the incident. NIMS is not a response or resource allocation plan. NIMS represents a core set of principles, terminology, and organizational processes that enables effective, efficient, and collaborative incident management.

NIMS components integrated into this plan include:

- **Resource Management** - describes standard mechanisms to systematically manage resources, including personnel, equipment, supplies, teams, and facilities, both before and during incidents in order to allow organizations to more effectively share resources when needed.
- **Command and Coordination** - describes leadership roles, processes, and recommended organizational structures for incident management at the operational and incident support levels and explains how these structures interact to manage incidents effectively and efficiently. The Incident Command System (ICS) falls under Command and Coordination.
- **Communications and Information Management** - describes systems and methods that help to ensure that incident personnel and other decision makers have the means and information they need to make and communicate decisions.

Within capabilities and working with community partners, the **Gadsden Elementary School District** integrates NIMS and the use of the Incident Command System (ICS) in accordance with the Homeland Security Presidential Directive (HSPD) 5. Additionally, the U.S. Department of Education and the Arizona State Minimum Requirements for schools, has provided guidance as to "key personnel," such as executive leaders, general personnel, Command Staff and Incident Managers, to complete specific courses in order to support NIMS implementation.

In a major emergency or disaster, the school/district may be damaged or need to be evacuated, people may be injured, and/or other incident management activities may need to be initiated. These activities will be organized and coordinated to ensure efficient incident management. NIMS/ICS is used to manage incidents and major District/School planned events. The school ICS approach is used in all phases of incident management, including pre-incident activities, incident and post-incident.

D. EMERGENCY OPERATIONS PLAN ACTIVATION AUTHORITY

The **Superintendent, Associate Superintendent, and School Principals** is/are typically the responsible authority for directing emergency measures for the school or district, and is provided the authority to activate this EOP (**Superintendent, Associate Superintendent, and School Principals**),

The **Superintendent, Associate Superintendent, and/or School Principal** will obtain information on the nature of the incident and assessment of the situation and will make the determination of next steps and assume the role of, or delegate the role of incident commander if the situation warrants.

An incident warranting multi-jurisdictional resources, emergency response activities will employ the Incident/Unified Command System (ICS) structure.

Timely warnings of emergency conditions are essential to preserve the safety and security of the school or district community and critical to an effective response and recovery. Direction on communications may be found in the Communication Section of the Basic Plan. Additional information may be obtained at the District level **Gadsden Elementary School District #32, 1350 E Cesar Chavez Blvd., San Luis, AZ 85349.**

IV. ORGANIZATION AND ASSIGNMENT OF RESPONSIBILITIES

A. ORGANIZATION

Emergency Management for **Gadsden Elementary School District** is comprised of the following:

POLICY GROUP

The Policy Group is comprised of senior/executive positions such as:

- Superintendent & Associate Superintendent
- School Board
- School Administrators
- Public Relations Coordinator

In complex incidents, the Policy Group will be convened at the **Gadsden Elementary School District offices, 1350 E Cesar Chavez Blvd., San Luis, AZ 85349 and/or Yuma County San Luis Library, 1075 6th Ave, San Luis, AZ 85349.**

The role of the Policy Group is to:

- Support the on-scene Incident Commander with strategic guidance, information analysis, and needed resources
- Provide policy and strategic guidance
- Help to ensure that adequate resources are available
- Identify and resolve issues common to all organizations
- Keep elected officials and other executives informed of the situation and decisions.

- Provide factual information, both internally and externally through the Joint Information Center (JIC) – **School Messenger Group: ACTIVATED EOP.**

DISTRICT DEPARTMENTS

District departments will support emergency response operations through performance of their normal roles and responsibilities. If called upon, district departments will activate personnel and implement appropriate response actions identified in the plan, or as directed by the Incident Commander.

Activation of the ICS for a school event may be modified as needed to best serve the nature of the incident. When the ICS is activated, staff will direct the efforts of their departments according to their respective procedures for emergency operations.

	Department	Departmental Duties and Responsibilities
1.	Transportation	Upon learning of an incident, the Transportation Director will report directly to the Incident Commander for assignment unless otherwise notified.
2.	Maintenance/Security	Upon learning of an incident, the Maintenance Director will report directly to the Incident Commander for assignment unless otherwise notified.
3.	Food Service	Upon learning of an incident, the Maintenance Director will report directly to the Incident Commander for assignment unless otherwise notified.
4.	District Leadership Team	Upon learning of an incident, the District Directors will report directly to the Incident Commander for assignment unless otherwise notified.
5.	School Leadership Team	Upon learning of an incident, the School Leadership Team will report directly to the Incident Commander for assignment unless otherwise notified.

B. SCHOOL POSITION ROLES AND EXPECTED ACTIONS

PRINCIPAL/BUILDING ADMINISTRATOR

The **principal may serve as the Incident Commander** or delegate that authority to a qualified individual. At all times, the principal still retains the responsibility for the overall safety of students and staff. However, delegating the authority to manage the incident allows the principal to focus on policy-level activities and interfacing with other agencies and parents.

SCHOOL SITE SAFETY AND SECURITY STAFF

The **Principal (Vice Principal)** is responsible for emergency management planning and all school community related operations. Upon the activation of the EOP for a school incident, the **Principal (Vice Principal)** assumes the role as **Incident Commander** unless delegated.

TEACHERS

Teachers shall be responsible for the supervision of students and shall remain with students until directed otherwise.

Responsibilities may include:

- Supervise students under their charge.
- Take steps to ensure the safety of students, staff, and other individuals in the implementation of incident management protocols.
- Direct students in their charge to inside or outside assembly areas, in accordance with signals, warning, written notification, or intercom orders according to established incident management procedures.
- Give appropriate action command during an incident.
- Take attendance when class relocates to an outside or inside assembly area or evacuates to another location.
- Report missing students to the Incident Commander or designee
- Execute assignments as directed by the Incident Commander or ICS supervisor.
- Obtain first aid services for injured students from the school nurse or person trained in first aid. Arrange for first aid for those unable to be moved.
- Render first aid if necessary. Consider training school staff in first aid and CPR.

INSTRUCTIONAL ASSISTANTS

Responsibilities may include assisting teachers as directed and/or supporting the Incident Commander in additional responsibilities.

COUNSELORS, SOCIAL WORKERS, and PSYCHOLOGISTS

Counselors, social workers, and psychologists provide assistance with the overall direction of the incident management procedures at the site.

Responsibilities may include:

- Take steps to ensure the safety of students, staff, and other individuals in the implementation of incident management protocols.
- Direct students in their charge according to established incident management protocols.
- Render first aid if necessary.
- Assist in the transfer of students, staff, and other individuals when their safety is threatened by a disaster.
- Execute assignments as directed by the Incident Commander or ICS supervisor.

SCHOOL NURSES/HEALTH ASSISTANTS

Responsibilities may include:

- Administer first aid or emergency treatment as needed.
- Supervise administration of first aid by those trained to provide it.
- Organize first aid and medical supplies.

CUSTODIANS/MAINTENANCE PERSONNEL

Responsibilities may include:

- Survey and report building damage to the Incident Commander or Operations Section Chief.
- Control main shutoff valves for gas, water, and electricity and ensure that no hazard results from broken or downed lines.
- Provide damage control as needed.
- Assist in the conservation, use, and disbursement of supplies and equipment.
- Keep Incident Commander or designee informed of condition of school.

SCHOOL SECRETARY/OFFICE STAFF

Responsibilities may include:

- Answer phones and assist in receiving and providing consistent and factual information to callers as approved by the Incident Commander and Public Information Officer (PIO).
- Provide for the safety of essential school records and documents.
- Execute assignments as directed by the Incident Commander or ICS supervisor.
- Provide assistance to the principal and Policy/Coordination Group.
- Monitor radio emergency broadcasts.
- Assist with health incidents as needed, acting as messengers, etc.

DISTRICT PUBLIC RELATIONS COORDINATOR

Responsibilities may include:

- Provide assistance to district emergency management coordinator and/or Incident Commander in disseminating proper incident information and updates in the multiple communication modes and platforms.

FOOD SERVICE/CAFETERIA WORKERS

Responsibilities may include:

- Use, prepare, and serve food and water on a rationed basis whenever the feeding of students and staff becomes necessary during an incident.
- Execute assignments as directed by the Incident Commander or ICS supervisor.

TRANSPORTATION/BUS DRIVERS

Responsibilities may include:

- Supervise the care of students if disaster occurs while students are in the bus.
- Transfer students to new location when directed.
- Execute assignments as directed by the Incident Commander or ICS supervisor.
- Transport individuals in need of medical attention.

OTHER STAFF (ITINERANT STAFF, SUBSTITUTE TEACHERS)

Responsibilities may include reporting to the Incident Commander or ICS supervisor if requested or activated.

STUDENTS

Responsibilities may include:

- Cooperate during emergency drills and exercises, and during an emergency situation.
- Learn to be responsible for themselves and others if the emergency situation warrants.
- Understand the importance of not being a bystander by reporting situations of concern to appropriate staff.

PARENTS/GUARDIANS

Responsibilities may include:

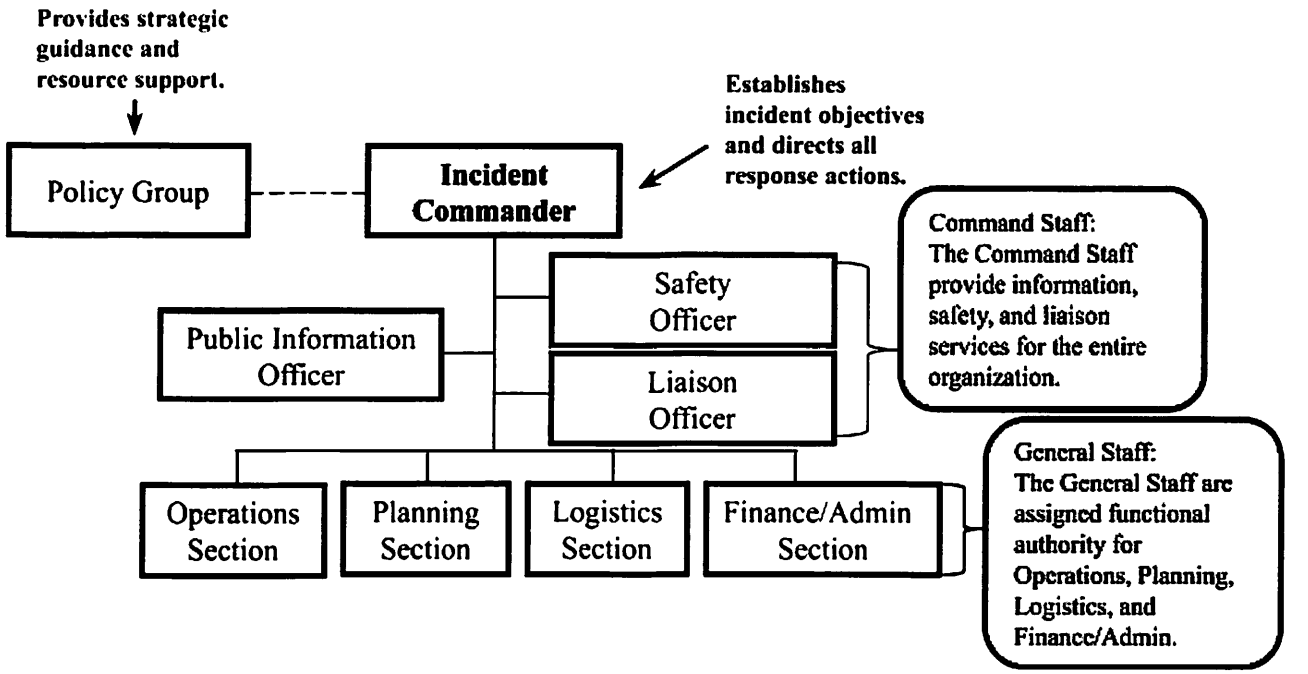
- Understanding their roles during a school emergency.
- Encourage and support school safety, violence prevention, and incident preparedness programs within the school.
- Participate in volunteer service projects for promoting school incident preparedness.
- Provide the school with requested information concerning the incident, early and late dismissals, and other related release information.
- Practice incident management preparedness in the home to reinforce school training and ensure family safety.

V. DIRECTION, CONTROL, and COORDINATION

A. INCIDENT COMMAND SYSTEM

The Incident Command System (ICS) organizational structure develops in a top-down, modular fashion that is based on the size and complexity of the incident, as well as the specifics of the hazard environment created by the incident. As incident complexity increases, the organization expands from the top down as functional responsibilities are delegated.

The school ICS may be organized into the following functional areas:



The **Gadsden Elementary School District** Incident Commander will be integrated into the Incident Command structure, or assume a role within a Unified Command structure.

If a school emergency is within the authorities of the first-responder community, i.e. emergency requiring law enforcement or fire services, etc., Command will transition, or form a Unified Command structure, upon the arrival of qualified first responders. A transfer of command briefing should occur when feasible.

INCIDENT COMMAND POST

The Incident Command Post (ICP) is the location from which the Incident Commander oversees all incident operations. There is generally only one ICP for each incident, but it may change locations during the event. Every incident must have some form of an ICP. Location and alternate location: **Gadsden Elementary School District offices, 1350 E Cesar Chavez Blvd., San Luis, AZ 85349 and/or Yuma County San Luis Library, 1075 6th Ave, San Luis, AZ 85349.**

The ICP will be positioned outside of the present and potential hazard zone, but located within safe proximity to the emergency site. The ICP is generally responsible for incident response management as follows:

- Serves as a temporary field location for tactical-level on-scene incident command and management
- Is the on-site headquarters for the Incident Commander, Command Staff and General Staff; and
- Serves as a field collection point for tactical intelligence and analysis

INCIDENT COMMANDER

The Incident Commander (IC) is the primary person in charge at the incident and will establish incident objectives based on the following five primary objectives: IC and IC alternate: **Superintendent, Associate Superintendent, and School Principal.**

1. Life safety
2. Protect public health
3. Incident stabilization
4. Property and environment preservation
5. Reduce adverse psychological consequences and disruptions

Additionally, the IC will manage the incident scene, and he or she must keep the Executive/Senior Administration and the Policy Group informed and up to date on important matters pertaining to the incident.

School-related responsibilities and duties may include:

- The first staff person on scene, **Principal, Vice Principal, Counselor, Instructional Coach, and/or Secretary** will assume the role of Incident Commander until a more qualified individual can assume command.
- The Incident Commander is delegated the appropriate authority to direct tactical on-scene operations until a coordinated incident management framework can be established with local resources.
- Establish the Incident Command Post (ICP), the incident organization, and determine strategies to implement protocols and adapt as needed.
- Provide an assessment of the situation to the Executive/Senior Administration, which may also include the Policy Group or other officials, recommend incident response activities, identify incident management resources required, and direct the on-scene incident management activities from the ICP.
- Monitor incident safety conditions and develop measures for ensuring the safety of building occupants (including students, staff, volunteers, and responders).
- Coordinate media relations and information dissemination with the PIO.
- Serve as the primary on-scene contact for outside agencies assigned to the incident, establish unified command as necessary, develop working knowledge of local/regional agencies, and assist in accessing services when the need arises.
- Document activities.
- Assume overall direction of all incident management procedures based on actions and procedures outlined in this EOP.
- Determine whether to implement incident management protocols (e.g., Evacuation, Shelter in Place, Lockdown, etc.), as described more fully in Section II—Functional Annexes.

- Arrange for transfer of students, staff, and other individuals when safety is threatened by a disaster.
- Work with emergency services personnel. (Depending on the incident, community agencies such as law enforcement or fire department may have jurisdiction for investigations, rescue procedures, etc.)
- Keep the Policy Group informed of the situation.

UNIFIED COMMAND

Unified Command applies ICS to incidents involving multiple jurisdictions or agencies. It enables schools and agencies with different legal, geographic, and functional responsibilities to coordinate, plan, and interact effectively.

Additionally, the Incident Commanders within the Unified Command will **make joint decisions and speak as one voice**. Any differences are worked out within the Unified Command. Within Unified Command, law enforcement would not tell school personnel how to manage, i.e. parent-student reunification, etc., or tell the firefighters how to do their job.

PUBLIC INFORMATION OFFICER

The Public Information Officer (PIO) is responsible for interfacing with the media or other appropriate agencies requiring information directly from the incident.

- Check in with the Incident Commander and receive a situation brief.
- If necessary, establish and supervise a Joint Information Center (JIC) with PIO's from the other responder agencies.
- Coordinate press releases among response organizations.
- Designate a media center and facilitate scheduled press briefings.
- Ensure all press releases and public information are reviewed and approved by the Incident Commander, or designee.
- Monitor news media outlets reports of the incident.

SAFETY OFFICER

Monitors incident operations and advises the Incident Commander or Unified Command on matters relating to the health and safety of incident personnel. Ultimate responsibility for the safe conduct of incident management rests with the Incident Commander or Unified Command and supervisors at all levels.

Duties may include:

- Developing and maintaining the incident Safety Plan.
- Coordinating multi-agency safety efforts.
- Implementing measures to promote the safety of incident personnel and incident sites.
- Stopping and/or preventing unsafe acts during the incident.

LIAISON OFFICER

Serves as the incident command's point of contact for representatives of governmental agencies, jurisdictions, NGOs, and private sector organizations that are not included in the Unified Command. Through the Liaison Officer, these representatives provide input on their agency, organization, or jurisdiction's policies, resource availability, and other incident-related matters. Under either a single Incident Commander or a Unified Command structure, representatives from assisting or cooperating jurisdictions and organizations coordinate through the Liaison Officer. The Liaison Officer may have assistants.

OPERATIONS SECTION

The Operations Section directs all tactical operations of an incident including implementation of response/recovery activities according to established incident management procedures and protocols, care of students, first aid, crisis intervention, search and rescue, site security, damage assessment, evacuations, and the release of students to parents.

Specific responsibilities may include:

- Implementation of Functional and Threat/Hazard annexes.
- Monitor site security and utilities.
- Establish medical triage/treatment with staff trained in first aid and CPR.
- Organize psychological first aid services for those in need.
- Document all activities.

PLANNING SECTION

Collects, evaluates, and disseminates information needed to measure the size, scope, and seriousness of an incident, and to plan appropriate incident management activities.

Duties may include:

- Assist Incident Commander in the collection and evaluation of information about an incident as it develops (including site map and area map of related events), assist with ongoing planning efforts, and maintain incident time log.
- Document all activities.
- Participate upon request with community partners in the development of an Incident Action Plan (IAP).

LOGISTICS SECTION

Supports incident management operations by securing and providing needed personnel, equipment, facilities, resources, and services required for incident resolution; coordinating personnel; assembling and deploying volunteer teams; and facilitating communication among incident responders.

Additional responsibilities may include:

- Establish and oversee communications center and activities.

- Coordinate access to and distribution of supplies during an incident, and monitor inventory of supplies and equipment.
- Document all activities.

FINANCE/ADMINISTRATION SECTION

Oversees all financial activities including purchasing necessary materials, tracking incident costs, arranging contracts for services, timekeeping for employees, submitting documentation for reimbursement, and recovering school records following an incident.

Additional duties may include:

- Assume responsibility for overall documentation and recordkeeping activities; when possible, photograph or videotape damage to property.
- Monitor and track expenses and financial losses, and secure all records.

The Finance and Administration Section may not be established onsite at the incident. Rather, the school and school district management offices may assume responsibility for these functions.

VI. COMMUNICATION

Communication is a critical part of incident management. This section outlines **Gadsden Elementary School District** communications plan and supports its mission to provide clear, effective internal and external communication between the school, staff, students, parents, responders, and media.

A. NOTIFICATION AND WARNING

Timely warnings of emergency conditions are essential to preserve the safety and security of the school community and critical to an effective response and recovery.

- Upon learning of an emergency and assessing the need for local agency support such as law enforcement or fire services, **School Principal, Assigned School Leadership Team Member, and/or District Administrator** will call 911.
- Notification to key district administrators, departments and personnel for emergency response as follows:
    - District and/or school personnel shall relay threat information, warnings, to ensure the school community is notified.
    - Staff shall respond according to their procedures for emergency operations, unless otherwise dictated by the event.
- Emergency notifications, warnings and alerts will typically be disseminated within the school or district using items such as, **CrisisGo,** voice command, intercom system, social platforms, the school radio, or other modes.
- CrisisGo prepared statements/parent notifications

In any case, it is important for the communication hubs to be notified of the emergency to ensure all appropriate notifications are made. Multiple communication strategies and back-up systems may be used.

Primary and Alternative Communication Methods

- **Telephone (classroom, office, district office, mobile cell phones)**
- **Intercom-CrisisGo**
- **Communication Platforms:**
    - **TEAMS**
    - **School Messenger (Mass communication)**
    - **CrisisGo**
- **Communication To Parents**
    - **Telephone, School Messenger**
- **Communication to Community**
    - **PR Coordinator via news outlets, social media**
- **Emergency Contact Binders**
    - **Each school site will have an emergency binder with student updated student demographic information.**
    - **Schools will also have access to CrisisGo**

B. EMERGENCY PUBLIC INFORMATION

In the event that a crisis occurs on school property, the Public Information Officer will be notified as soon as possible to report to the Incident Command location. The PIO will ultimately be responsible for the communications efforts relative to the crisis.

For a detailed plan of emergency public information, **Jose Luis Cisneros District Public Information Officer.**

C. NON-EMERGENCY EXTERNAL COMMUNICATIONS

During an incident the school expects to receive a high volume of calls seeking information as to the welfare of students, staff and faculty from concerned parents, relatives, spouses, friends and loved ones. The surge in volume of calls to the school main numbers may quickly exceed the system capabilities.

If available, call centers are activated and staffed as soon as possible to handle anticipated volume of non-emergency calls related to the incident.

Call centers may also be a resource in helping to control rumors.

VII. ADMINISTRATION, FINANCE, AND LOGISTICS

IGA created with the city of San Luis along with EOP can be found in appendices.

VIII. PLAN DEVELOPMENT and MAINTENANCE

The school EOP utilizes existing program expertise and personnel to provide prevention, protection, mitigation, preparedness, response, and recovery efforts of post event consequences. The EOP is structured according to *The Guide for Developing High-Quality School Emergency Operations Plans*, U.S. Department of Education, Office of Elementary and Secondary Education, Office of Safe and Healthy Students Washington, DC, 2013, while also striving to following the principles of the National Incident Management System (NIMS) and Incident Command System (ICS). The format for this EOP template is also in alignment with Developing Multi-Hazard Emergency Operations Plans for Schools courses MAG 364, E0364, and E0361 which are offered at the state and national level.

The **Gadsden Elementary School District** shall oversee or coordinate with community partners the following EOP actions:

- The EOP shall be reviewed annually and modified as necessary by **Gadsden Elementary School District Leadership Team, School Level Leadership Team, All full time and part time classified and certified staff including volunteers and community partners**.
- The school EOP shall be coordinated with the District and when possible, community partners that may be affected by EOP implementation, in an effort to ensure consistency and compatibility of their jurisdictional plans.
- Substantive changes between review periods, such as changes in roles or responsibilities, will prompt notification to listed stakeholders. Minor edits such as grammar or spelling changes will require no notification.

- Each school unit or department identified as having a role in this EOP is responsible for communicating the content of the EOP to their staff and ensuring key staff has the opportunity to attend scheduled EOP training and exercise activities.

A. TESTING, TRAINING, AND EXERCISE

The development of the EOP Training and Exercise Schedule is a key component of the school's ability to respond to an emergency situation. It is recommended that appropriate district and school staff have a general understanding of what **Gadsden Elementary School District** role will be during an event and the expected response protocol. Therefore, training and exercise opportunities will provide the required background and understanding of staff roles.

- EOP training opportunities, as well as review of preparedness or response support materials, shall be incorporated into the annual Training and Exercise Schedule.
- Each school unit or department identified as having a role in this EOP is responsible for communicating the content of the EOP to their staff and ensuring key staff has the opportunity to attend and participate in EOP training and exercise activities.
- It is recommended that the **Gadsden Elementary School District** complete exercises with community partners to train school and response personnel and evaluate the adequacy of the EOP. Homeland Security Exercise and Evaluation Program (HSEEP) guidelines may be used.

B. PLAN CONTACT INFORMATION

Name and Position	Phone Number	Alternant Phone Number
Lina Galvan	(928) 722-7098	(928) 722-7119
E-mail: tgalvan@gesd32.org		
Department: Associate Superintendent Office		
Brenda Silva	928-722-7119	928-785-6111
E-mail: bacosta@gesd32.org		
Title: Lead Admin and Safety Specialist		

C. RECORD OF CHANGE

Change Number	Date of Change	Description of Change	Change Made By

D. RECORD OF DISTRIBUTION

Date	Version	Name and Title	Department/Agency

REFERENCES

This section provides references, guidance documents, and legal authorities for emergency operations and activities.

- **GOVERNING BOARD POLICIES**
  - GESD#32 Policy
    - **EBC © EMERGENCIES**
- **LOCAL**
- **STATE**
  - Arizona Revised Statutes 15-341 (A) (31)
- **FEDERAL**
  - Robert T. Stafford Disaster Relief and Emergency Assistance Act, PL 100-707
  - Emergency Management and Assistance, Code of Federal Regulations, Title 44.
  - Superfund Amendments and Reauthorization Act of 1986, PL 99-499 (Title III, "Emergency Planning and Community Right-to-Know Act of 1986").
  - Comprehensive Environmental Response Compensation and Liability Act of 1980, PL 96510 (CERCLA or "Superfund").
  - County Health Department Security and Bioterrorism Preparedness and Response Act (42 CFR Part 73)
  - Homeland Security Act of 2002 (CIKR, Intro-2, CPG 101)
  - Homeland Security Presidential Directive (HSPD) 3, 5 and 8:
    - National Response Framework
    - National Incident Management Systems (NIMS)
  - Occupational Safety and Health Administration (OSHA) Rule 1910.120

DEFINITIONS

1. Common Terminology: Using common terminology helps to define organizational functions, incident facilities, resource descriptions, and position titles.
2. Emergency Management (EM). A framework for organizing and managing emergency protection efforts. Prevention, protection, mitigation, preparedness, response, and recovery – in the all-hazards approach.
3. Emergency Operations Center (EOC). Specially equipped facilities from which government officials exercise direction and control and coordinate necessary resources in an emergency.
4. Emergency Public Information (EPI). Information that is disseminated to the public via the news media before, during, and/or after an emergency or disaster.
5. Emergency Operation Plan (EOP). Contains policies and procedures to follow before, during and after an emergency. The EOP integrates emergency preparedness activities into one document. It is the focal point for School planning and preparedness procedures.
6. Emergency Situation. As used in this plan, this term is intended to describe a range of situations, from an incident to a major disaster. It includes the following:
    - Incident. An incident is a situation that is limited in scope and potential effects.
    - Emergency. An emergency is a situation that is larger in scope and more severe in terms of actual or potential effects than an incident.
    - Disaster. A disaster involves the occurrence or threat of significant casualties and/or widespread property damage that is beyond the capability of the local government to handle with available local resources.
7. Federal Emergency Management Agency (FEMA). The federal agency charged with development of an integrated emergency management system and with supporting emergency management and disaster assistance efforts at all levels of government. See: http://www.fema.gov.
8. Hazard: Something that is potentially dangerous or harmful, often the root cause of an unwanted outcome.
    - Human-Caused Hazard: A hazard that arises from deliberate, intentional human actions to threaten or harm the well-being of others. Examples include school violence, terrorist acts, or sabotage.
    - Natural Hazard: A hazard related to weather patterns and/or physical characteristics of an area. Often natural hazards occur repeatedly in the same geographical locations.
    - Technological Hazard: A hazard originating from technological or industrial accidents, infrastructure failures, or certain human activities. These hazards may cause loss of life or injury, property damage, social and economic disruption, or environmental degradation, and often come with little to no warning.

9. Hazardous Material (HAZMAT). A substance in a quantity or form posing an unreasonable risk to health, safety and/or property when manufactured, stored or transported. The substance, by its nature, containment and reactivity, has the capability for inflicting harm during an accidental occurrence. It may be toxic, corrosive, flammable, reactive, an irritant, a strong sensitizer and poses a threat to health and the environment when improperly managed. Included are toxic substances, certain infectious agents, radiological materials and other related materials such as oil or other petroleum products, and industrial solid waste substances.
10. Incident Commander (IC). The person responsible for the management of all incident operations. The IC is in charge of the incident site.
11. Incident Command Post. The location from which the Incident Commander oversees all incident operations. The ICP may be located outside, in a vehicle, trailer, or tent, or within a building. The ICP will be positioned at a safe distance from an accident site where the incident commander, responders and technical representatives can make response decisions, deploy man power and equipment, maintain liaison with the media and handle communications.
12. Incident Command System (ICS). The combination of facilities, equipment, personnel, procedures, and communications operating with a common organizational structure, with responsibility for the management of assigned resources to effectively accomplish stated objectives pertaining to an incident and/or event.
13. Continuity of Operations Plan (COOP) establishes guidance and procedures to ensure the resumption of essential functions in the event that an emergency or disruption incapacitates operations and/or requires the relocation of selected personnel and functions. (See Annex A COOP)
14. Lockdown. A procedure of locking classroom doors, covering windows, moving all persons away from windows and doors during a situation involving dangerous intruders, or other incidents that may result in harm to persons inside the school building.
15. Liaison Officer. A member of the command staff responsible for interacting with representatives from cooperating and assisting agencies.
16. Logistics Section. The section responsible for providing facilities, services, and materials for the incident.
17. NIMS provides a consistent framework for incident management at all jurisdictional levels regardless of the cause, size, or complexity of the incident. NIMS is not an operational incident management or resource allocation plan. NIMS represents a core set of doctrine, concepts, principles, terminology, and organizational processes that enables effective, efficient, and collaborative incident management.
18. Public Information Officer (PIO). A member of the command staff responsible for interfacing with the media or other appropriate agencies requiring information directly from the incident.
19. Resources List. A current list of all resources (equipment, personnel, supplies), which can be used by emergency services in response to local disaster/emergencies.
20. Safe Zone. A geographical region beyond the warm zone where there is no suspected product contamination; often referred to as the cold zone or the outermost zone.

21. Shelter-In-Place. A procedure addressing the need to provide refuge for students, staff and visitors within the school building during an emergency.

22. Staging Area (SA). A pre-selected location having large parking areas and cover for equipment, vehicle operators, and other personnel such as a major shopping area, schools, etc. The SA provides a base for coordinated emergency operations, assembly of persons to be moved by public transportation to reception jurisdictions, a rally point for mutual aid, or a debarking area for returning evacuees.

23. Transfer of Command: The process of moving the responsibility for incident command from one Incident Commander to another is called "transfer of command." It should be recognized that transition of command on an expanding incident is to be expected. It does not reflect on the competency of the current Incident Commander.

24. Unified Command. In ICS, Unified Command is a unified team effort that allows all agencies with responsibility for the incident, either geographical or functional, to manage an incident by establishing a common set of incident objectives and strategies. This is accomplished without losing or abdicating agency authority, responsibility, or accountability. The operations section chief is responsible for implementing the incident action plan.

25. Unified Command: In incidents involving multiple jurisdictions, a single jurisdiction with multiagency involvement, or multiple jurisdictions with multiagency involvement, Unified Command allows agencies with different legal, geographic, and functional authorities and responsibilities to work together effectively without affecting individual agency authority, responsibility, or accountability.