



**El Paso Water – Public Service Board**

**Request for Proposals**

**RFP 125-22**

October 31, 2022

To: Interested parties

Re: Request for Proposals to Provide Construction Manager At-Risk Services (CMAR) for the Haskell R. Street WWTP Various Improvements Project (Haskell VIP).

El Paso Water (EPWater) is pleased to request proposals for this one-stage procurement to provide Construction Manager At-Risk (CMAR) services for the Haskell R. Street WWTP Various Improvements Project.

Please find attached the following document: RFP 125-22.

The due date for Proposals is January 11, 2023, at 3:00 PM local time. Please submit your Proposal at the following address:

**Attention: Mirtha Solis, Senior Purchasing Agent  
EPWater - Public Service Board  
1154 Hawkins Boulevard El Paso, Texas 79925**

Please submit the Proposal in sealed envelope to Ms. Mirtha Solis. Note: the Fee Proposal must be presented in a separate, sealed envelope. **Do not submit to the ground floor lobby front (security) desk.**

Proposals received by January 11, 2023, at 3:00 PM local time will be publicly opened at 3:15 PM. Proposers and the Public are invited to virtually attend the opening via the GoToMeeting application. Details for joining the virtual meeting are found in Section 5 of this RFP.



**REQUEST FOR PROPOSALS**

**Construction Manager-at-Risk (CMAR)  
Contractor Services  
For  
Haskell R. Street WWTP Various  
Improvements Project**

**El Paso, Texas**

**El Paso Water RFP  
Number 125-22**

**DATE ISSUED  
October 31, 2022**

**EI Paso Water**  
**Request for Proposals**  
**Construction Manager-at-Risk (CMAR) Contractor Services**  
**For**  
**Haskell R. Street WWTP Various Improvements Project**

**EI Paso Water RFP**  
**Number 125-22**

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## 1. RFP BACKGROUND

The purpose of this Request for Proposals (RFP) # 125-22 by El Paso Water (EPWater), hereinafter referred to as the Owner, is to solicit proposals from qualified contractors to provide preconstruction and construction services for the Haskell R. Street Various Improvements Project (Haskell VIP) using the Construction Manager-at-Risk (CMAR) method of project delivery. Included in the scope of services is collaboration with the Engineer during the design phase, providing constructability and value engineering guidance, development of guaranteed maximum price (GMP) proposal(s), and, assuming successful negotiation of GMP(s) with the Owner, ultimately entering into a construction agreement for the construction of the Project.

Responses to this RFP will be evaluated to identify contractors with the requisite experience, qualifications, and resources to complete the Project successfully within an agreed upon GMP(s) in accordance with project requirements that will be specified by the Owner.

**This RFP is subject to revision after the date of issuance via written addenda.** Any such addenda will be announced on EPWater's web site located at:

[https://www.epwater.org/business\\_center/purchasing\\_overview/bids/construction](https://www.epwater.org/business_center/purchasing_overview/bids/construction).

Proposers shall register on the EPWater website and monitor it for announcement of addenda. EPWater will not transmit addenda to potential Proposers. **It is each Proposer's responsibility to obtain all RFP addenda prior to submitting its proposal.**

Proposers will be bound to all direct or inferred obligations made in their Proposal for a period of 180 days after the proposal submission date. In no event will EPWater be liable for any costs incurred by any Proposer or any other party in developing or submitting a Proposal.

## 2. PROJECT SUMMARY AND OBJECTIVES

The Haskell Wastewater Treatment Plant (Haskell WWTP), located in El Paso, TX at 4100 Delta Drive, is a conventional activated sludge facility and is owned and operated by EPWater. It is rated to treat and discharge via two outfall locations to Rio Grande Basin up to 27.7 million gallons per day (MGD) of wastewater on an annual average basis.

The liquid treatment processes at Haskell WWTP include headworks (screening and grit removal), primary clarification, anoxic and aerated activated sludge basins, secondary clarification, tertiary effluent filtration, and disinfection using chlorine. The solids handling includes waste activated sludge (WAS) thickening using Dissolved Air Flotation Thickeners (DAFT), primary sludge and thickened WAS blending/storage tank, anaerobic digestion, and sludge dewatering using belt filter presses. Dewatered cake is hauled to a landfill for disposal. This RFP identifies seven (7) improvement packages at the Haskell WWTP.

This RFP also includes two (2) more improvement packages in central El Paso, Alfalfa Lift Station (Alfalfa LS) and Alfalfa Force Main (Alfalfa FM). The Alfalfa LS, located in El Paso at 7353 Stiles Drive, was built in 1966 with a Triplex wet well and dry well pump station rated at 4.32 MGD. EPWater wants to increase the lift station's capacity to 6 MGD. The new Alfalfa FM will be built to convey flows to the Haskell WWTP. The length and diameter are to be determined.

The list of the nine (9) improvement packages in the Project is summarized in the following table. The general location is shown in the figure below, for reference only. It is noted that packages 8 and 9 are in central El Paso at 7353 Stiles Drive. The FM route is to be determined.

No.	Improvement Package	Design Firm	Design Completion Estimate	Location
1	36-inch Sluice Gate Replacement	Parkhill	100%	Haskell WWTP
2	Headworks Building Odor Control Upgrades	Hazen	95%	Haskell WWTP
3	Grit Removal System Improvements	Garver	30%	Haskell WWTP
4	Anoxic Basin	Arcadis	0%	Haskell WWTP
5	Aeration System Improvements	Arcadis	0%	Haskell WWTP
6	Aeration Channel Odor Control	Hazen	0%	Haskell WWTP
7	Dewatering Building Odor Control System Upgrades	Hazen	0%	Haskell WWTP
8	Alfalfa Lift Station	Garver	0%	Central El Paso
9	Alfalfa Force Main	Garver	0%	Central El Paso



## **2.1 36-inch Sluice Gate Replacement**

This improvement project is a candidate for an Early Work Package. The existing flow splitter box is located southeast of the Haskell WWTP, between the four (4) secondary clarifiers. The splitter box contains four (4) sluice gates that are corroded and need to be replaced. The design of this improvement is at least 95% complete. Refer to Attachment C.

The upgrades include remove and dispose all four (4) existing sluice gates and associated appurtenances from inside existing secondary clarifiers flow splitter box; Install four (4) new Owner-furnished sluice gates and associated appurtenances to replace existing. Furnish, installation, and operation of temporary pumping and piping system to bypass flow (50 MGD) going to the splitter box with discharge directed to the center of four (4) existing 145 foot diameter secondary clarifiers; furnish and installation of temporary pipe plugs (ranging in size from 36-inch to 60-inch with hydraulic head differential of up to 25 feet to isolate flow from entering and leaving the splitter box as necessary for work on sluice gates; draining the splitter box by pumping as necessary for work on sluice gates; and furnish and installation of temporary electrical or diesel power for operation of bypass pumping including manual transfer switch and cables, complete in place.

## **2.2 Headworks Building Odor Control System Upgrades**

This improvement project is a candidate for an Early Work Package. The existing headworks building, located northwest of the Haskell WWTP, houses a chemical scrubber odor control system. The scrubber system is unable to reach the required sulfide removal efficiency and required a constant chemical supply. In 2016, a plant-wide odor control study (2016 Odor Control Study) was completed, and it was determined that upgrades to this facility are necessary to achieve desired odor removal levels.

The design of this project is at least 95% complete. Refer to Attachment C. The upgrades are include, but are not limited, to the following:

- Demolish existing scrubber tower,
- Demolish existing hypochlorite storage tank,
- Demolish existing sidewalk,
- Demolish existing 42-inch FRP ducting
- Furnish and install a new chemical scrubber with bio-trickling filter,
- New concrete slab,
- New FRP ductwork,
- Electrical,
- Replacement of interior ductwork for improved ventilation and corrosion resistance, and
- Replacement of existing make-up air units with refrigerated cooling units.

## **2.3 Grit Removal System Improvements**

The existing grit system has been difficult to maintain and operate for the last five (5) years. Several improvements have been made to the existing grit system, but EPWater decided to replace with a new facility. This facility is located just north of the primary clarifiers.

The grit removal system facility includes the construction of the following items:

- New grit removal system
- New odor control system including connecting ductwork
- New vortex style grit system.
- New dewatering building with grit dewatering equipment and disposal.
- New odor control system.
- Associated electrical upgrades.

- Associated site civil work and yard piping.

#### **2.4 Anoxic Basin Improvements**

This improvement project is a candidate for an Early Work Package. The CMAR is to allow the Design Engineer to perform a structural assessment and analysis of the Anoxic Basin, to document the structural repairs for a functional anoxic basin. This component also provides a hydraulic analysis and selection of a new technology for mixer equipment replacement. This includes compressed air mixing and vertical shaft mixing. The expected early package includes the following:

- Provide access to Anoxic Basin at each subbasin, 9 total openings
- Bypass option
- Cleaning of each individual subbasin
- Non-destructive testing
- Destructive testing

Engineer will perform the following:

- Structural visual inspections
- Non-destructive testing results assessment
- Destructive testing results assessment
- Structural assessment Technical Memorandum by ENGINEER for the anoxic basin describing the ENGINEER's structural improvements recommendations.
- Anoxic Basin Improvements Design

#### **2.5 Aeration System Improvements**

EPWater wants to complete improvements to the aeration system to mitigate any impacts to the performance and capacity from future flows from the Alfalfa LS. This improvement project may include replacing the existing blowers, membrane disc diffusers, membrane tube diffusers, membrane panel diffusers and all instrumentation for a fully operational aeration system. In summary, this project may include the following:

- Replace diffusers at all aeration basins
- Instrumental and Controls improvements
- Electrical improvements
- Replace flow control valves

#### **2.6 Aeration Channel Odor Control System Upgrades**

The existing aeration channel is located next to the aeration basins, southeast of the Haskell WWTP. The 2016 Odor Control Study identified this channel as an odor contributor, and it was recommended for upgrades. The scope of this project is being developed. Design will follow right after.

#### **2.7 Dewatering Building Odor Control System Upgrades**

The existing dewatering building, located north of the secondary clarifiers, houses a chemical scrubber odor control system. It is unable to treat odors associated with organic compounds in the dewatering area. The current system only exhausts foul air from the belt filter press area. The 2016 Odor Control Study recommended this odor control system for upgrades.

The goal is to replace the existing system with a carbon odor control system. It is anticipated that this upgrade will include the following major components:

- Replacement of the makeup air units,



- Replacement of foul air exhaust fans, and
- Reconfiguration of ductwork to effectively contain and convey foul odors in all worker occupied spaces of the building.
- Replace corroded electrical equipment

The design has not started; however, it is anticipated that this project will not require expansion of the building or changes to the cake loadout area. The detailed scope of work will be provided as soon as design is started.

## **2.8 Alfalfa Lift Station Improvements**

The Alfalfa Lift Station (LS) was built in 1966 with a Triplex wet well and dry well pump station rated at 4.32 MGD. The lift station pumps, on-site collection, and discharge piping are corroded. A recent study identified the lift station to be under capacity. Originally the flows are sent to Bustamante Wastewater Treatment Plant (WWTP); however, EPWater is requesting the flows be diverted to Haskell WWTP. Generally, the project goal is to replace and increase the capacity of the existing LS. The new capacity will be up to 6 MGD. The following is anticipated to be part of the scope of work for this improvement package:

- New electrical building
- Dry well/wet well lift station
- Electrical
- SCADA
- Controls
- Activated carbon odor control unit and biotower (trickling filter unit)

## **2.9 Alfalfa Force Main Improvements**

A new force main (FM) will be required to convey the flows from Alfalfa LS to Haskell WWTP elevated junction box. The FM is expected to be between 18 and 20 inches in diameter. The FM will also convey the flows from Pecos LS and Clardy Fox LS. The FM is anticipated to have an approximate length of 31,000 linear feet. The pipe route is to be finalized as part of the ongoing design. The alignment is anticipated to go through El Paso Electric, EPCWID#1, UPRR, and TxDOT right of way. In general, the work associated with this package may include the following:

- New 18-inch and 20-inch pipe, approximately 31,000 linear feet
- Tunneling at TxDOT, UPRR, EPCWID#1
- Haskell WWTP – 36-inch Siphon Crossing.

The Owner intends to hire a qualified Construction Manager-at-Risk to assist in the design process and to serve as the General Contractor (GC) for the construction phase of the Project. It is anticipated that preconstruction services will be required of the CMAR contractor beginning in Spring 2023. Onsite construction activities are anticipated to begin in the Summer 2023 contingent upon collaborative development of overall construction schedule and the Planned project completion is expected to be Spring 2026.

The Owner has retained Arcadis, as the engineering firm to provide engineering, design, and project administration services. The CMAR Firm being solicited under this Request for Proposal will be part of a collaborative team including the Owner and Arcadis (Engineer).

Included in the scope of services is collaboration with the Engineer during the Preconstruction phase, providing constructability and value engineering services, development of guaranteed maximum price(s) (GMP) and a detailed construction schedule, and, assuming successful negotiation of a GMP with the Owner, ultimately entering into a general contracting agreement

for the construction of the Project.

EPWater's objectives for delivery of the Project include:

- **Quality:** Provide facilities as designed and equipment that is specified that will be sustainable and will reliably meet the preliminary project technical requirements set forth in Attachment C.
- **Cost:** Minimize life-cycle cost.
- **Schedule:** Achieve the scheduled final completion date of Spring 2026 for design, construction, performance testing, final completion, final and turnover of the Project.
- **Risk:** Achieve an optimal balance of risk allocation between EPWater and the CMAR Firm.
- **Safety:** Implement a project safety program complying with EPWater, federal, state, and local regulatory requirements as well as the selected CMAR company requirements.
- **Maintenance of Plant Operations:** Ensure there are no unplanned plant interruptions.
- **Based Value Selection of the CMAR:** Select the firm best qualified to perform this project.
- **Construction Input into Design:** Provide for regular constructability and value analysis throughout the design phase.
- **Minority Participation in the Project:** EPWater's policy for its projects is to encourage the participation of Small Locally-Owned Businesses (SLBE), Minority Business Enterprises (MBE), and Women-Owned Business Enterprises (WBE). The utility's minimum goals for this project are:
  - 25% FOR SMALL LOCALLY- OWNED BUSINESSES
  - 10% FOR MINORITY-OWNED BUSINESSES
  - 7% FOR WOMEN-OWNED BUSINESSES

### 3. CMAR SCOPE OF SERVICES

The anticipated CMAR scope of services will span the preconstruction and construction phases of the Project. Preconstruction-phase services generally consist of the CMAR participating in the review of the Project design and providing suggestions and recommendations based on experience, culminating in the negotiation of a GMP(s) for project construction. Construction-phase services generally encompass input to the Project's final design, construction, management, and performance testing. It is noted that the CMAR Firm may be asked to provide construction work and/or field investigation in the form of Early Work Packages during the Preconstruction Phase. Additional detail on the CMAR scope of services are presented next.

### **3.1 Pre-Construction Phase Services**

Preconstruction Services will include the CMAR working with the Owner and Engineer in an interactive basis to share ideas and experience in assisting the Engineer in developing construction documents suitable for preparing a GMP(s) and ultimately suitable for construction.

RFP Attachment B, Part A identifies the draft Scope of Services to be performed by the CMAR during the Preconstruction Phase. Proposer's shall use this scope to develop their Preconstruction Services fee which is a cost component to be submitted with the Proposal.

### **3.2 Construction Phase Services**

Following execution of a general contracting agreement, the CMAR Contractor responsibilities during the construction phase are generally as follows:

1. Establish and maintain the project field office to be used by the entire project team.
2. Review Drawings and Specifications developed by the Engineer as they are advanced toward final design completion and notify the Owner and Engineer of any inconsistencies between the Guaranteed Maximum Price and the Drawings and Specifications issued for construction.
3. Manage the procurement process for all materials, equipment and subcontracted services procured by the CMAR Contractor, inclusive of bid quotations, bid solicitations, issuance of bid package documents and addenda, opening of bid proposals, and award of subcontracts.
4. Plan, schedule and manage the construction of the Project to be not more than the GMP based on detailed open book bid pricing.
  - a. Construct, startup and commission the facilities in coordination with Engineer.
  - b. Coordinate planning and sequencing of construction activities.
  - c. Coordinate work with equipment suppliers for onsite services
  - d. Coordinate work of all subcontractors.
5. Maintain health and safety requirements for the project and ensure adherence to provide a safe work site for all project participants.
6. Comply with all Federal, State, and local construction permitting requirements.
7. Provide monthly cash flow forecasts.
8. Provide a construction Quality Control/Quality Assurance program.
9. Provide regular open book financial status reports on project costs.
10. Provide regular status reports on the project schedule.
11. Conduct checkout, startup, commissioning, and performance testing in coordination with Engineer.
12. Provide operator training in support of Engineer.

13. Prepare and submit all project records.
14. Provide warranty coverage as specified within the contract.
15. Manage construction work to assure compliance with all equipment installation
16. CMAR will work in coordination with EPWater and the Engineer to develop, and implement the Checkout, Startup and Commissioning Plan and Validation Testing for all components of the Work.
17. Complete construction activity such that it does not interfere with the plant operations.

#### **4. PROCUREMENT PROCESS**

Each potential Proposer is asked to provide EPWater within five (5) working days after the Pre-proposal Meeting and Site Tour an email acknowledgement that it is a potential Proposer. Such acknowledgement shall be sent in writing and a copy electronically transmitted to EPWater's point of contact and shall identify and provide full contact information for the Proposer Representative. The Proposer Representative shall be the Proposer's single point of contact for the receipt of any future documents, and notices associated with this RFP. It is recommended that Proposers also subscribe to bids on EPWater's website.

On behalf of EPWater, Mirtha Solis, Senior Purchasing Agent, will act as the sole point of contact for this RFP and shall administer the procurement process. All communications shall be submitted in writing, or by email, and shall specifically reference this RFP. All questions or comments should be directed to the EPWater Contact as follows:

Mirtha Solis  
Senior Purchasing Agent  
EPWater – Public Service Board  
1154 Hawkins Boulevard  
El Paso, Texas 79925  
Phone (915) 594-5473  
Email addresses:

[msolis@epwater.org](mailto:msolis@epwater.org) and [Purchasing.info@epwater.org](mailto:Purchasing.info@epwater.org)

No oral communications from the EPWater Contact or other individual is binding. The Cone of Silence is imposed on this RFP at the first posting of the advertisement and prohibits communication with EPWater employees to attempt to influence the purchasing decision. No contact with EPWater staff, board members, any public official or the Engineer concerning the Project during the procurement process is allowed. A violation of this provision may result in disqualification of Proposer. More information on the Cone of Silence may be found on EPWater's website at the following link:

[https://www.epwater.org/business\\_center/purchasing\\_overview/cone\\_of\\_silence](https://www.epwater.org/business_center/purchasing_overview/cone_of_silence)

The following table presents the milestone activities and dates for the procurement and execution of the Haskell VIP. EPWater reserves the right to modify the activities and dates as required.

Schedule Milestone Activity	Date
Issue the Request for Proposal	10/31/2022
Non-mandatory Pre-proposal meeting and site visit	11/14/2022 @ 10 AM
Deadline for questions	12/05/2022 @ 5 PM
EPW publishes clarifications	12/12/2022
Deadline for submission of proposals	1/11/2023 at 3 PM
Optional interviews	1/12/2023
CMAR firms notified of rankings	1/17/2023
PSB Board considerations for approval	3/08/2023
Notice to Proceed	4/03/2023
Preconstruction Phase Start	April 2023
Early Work Packages	April 2023
Construction Notice to Proceed	August 2023
Construction Final Completion	Spring 2026

A non-mandatory pre-proposal Meeting and Site Tour are scheduled for November 14, 2022, at 10:00 a.m. local time. The Pre-Proposal Meeting will be held in El Paso Water’s International Water Quality Laboratory at 4100 Deltar Drive, El Paso, TX 79905. At this meeting, EPWater will offer information about the Project and the procurement process. The Pre-Proposal Site Tour will be held shortly thereafter at the project site to provide Proposers the opportunity to familiarize themselves with site conditions and constraints. Only one visit will be held.

## 5. PROPOSAL SUBMISSION REQUIREMENTS:

All interested Proposers are required to submit eight (8) copies of their proposals with the required materials as well as one electronic version on a jump drive in PDF format. Proposals for the Haskell VIP will be received by the Owner until 3:00 p.m. local time on January 11, 2023. Any Proposal received after the submittal deadline will be deemed nonresponsive and returned. Each Proposer assumes full responsibility for timely delivery of its Proposal at the required location.

Following receipt of Proposals, EPWater will convene a public opening of the Proposals scheduled from 3:15 to 3:45 PM. Proposals received in conformance with RFP submission requirements will be opened, and the names of the Proposers identified. Cost proposals for each Proposer will also be opened and read aloud. Proposers and the Public may attend the opening virtually.

Virtual attendance will be provided through the GoToMeeting application. Proposers can use the following link to install the GoToMeeting application. <https://meet.goto.com/install>

Proposers are advised to install and confirm the application is functioning properly in advance of the 3:15 PM meeting. Through the application, virtual attendees can join the meeting from their computer, tablet, or smartphone by opening the following link: <https://meet.goto.com/261631453>

Proposers can also join by phone:

United States (Toll Free): +1 (866) 899-4679

United States: +1 (571) 317-3116

Access Code: 261-631-453

Hard copies of bound Proposal documents and the jump drive shall be sealed in a box which shall note "Proposal Response to RFP/CMAR 125-22 Enclosed" on its face. The Fee Proposal document shall be submitted in a separate, sealed envelope which shall note "Fee Proposal for RFP/CMAR 125-22 Enclosed" on its face. Fee proposal information shall not be copied onto the jump drive. Both the sealed box and envelope shall be addressed to:

Attention: Mirtha Solis  
Senior Purchasing Agent  
EPWater – Public Service Board  
1154 Hawkins Boulevard El Paso, Texas 79925

Boxed Proposals and the sealed Fee Proposal are not to be submitted to the ground floor lobby front (security) desk.

Proposal shall be no more than 35 total pages (on 8½-inch x 11-inch paper with 1-inch or greater margins), excluding the transmittal letter, index or table of contents, front and back covers, title pages/separation tabs, and appendices. Out of the total allowable page limitation, a maximum of three (3) of the total pages may be 11 x 17-inch tri-fold format can be used for the Executive Summary, Organizational Chart, and Proposer's Choice. Each 11 x 17 page will count as a single page. Eleven-point font or larger must be used throughout the Proposal.

Proposers seeking clarification or additional information relevant to the RFP or the Project shall submit their questions to the EPWater Senior Purchasing Agent, Mirtha Solis, by email at [purchasing.info@EPWaterater.org](mailto:purchasing.info@EPWaterater.org) and at [msolis@epwater.org](mailto:msolis@epwater.org). Questions should be copied to the Engineer, Atzuko Reveles, P.E. of Arcadis, U.S. by email at [atzuko.reveles@arcadis.com](mailto:atzuko.reveles@arcadis.com). Within the email, provide detailed reference to the Improvement Project, design sheets, or other RFP information to provide context for questions. Proposers are advised that responses to questions will only be official and binding when issued in a formal written addendum to the RFP. Questions will not be received after 5 p.m. local time on December 5, 2022.

## **6. PROPOSAL CONTENT**

The content requirements set forth in this RFP represent the minimum content requirements for the Proposal. It is the Proposer's responsibility to include in its Proposal relevant information for this project. The Proposal should not contain standard marketing or other general materials.

The Proposal shall include the following sections in the order listed:

- Transmittal Letter (maximum 2 pages)
- Part 1 – Executive Summary (maximum 2 pages)
- Part 2 – CMAR Firm Profile (maximum 3 pages)
- Part 3 – Project Team (maximum 3 pages, not including resumes for Key Personnel)
- Part 4 – Relevant Project Experience (maximum 7 pages)
- Part 5 – Project Approach (maximum 18 pages)

- Part 6 – CMAR Contract Markup (maximum 1 page)
- Part 7 – Cost Proposal (maximum 1 page; to be provided in separate sealed envelope)
- Appendix A – Affirmation of Compliance Documents
- Appendix B – CMAR Contract Markup
- Appendix C – Cost Proposal Forms

Each page shall be numbered, and each section separated by tabs. Information listed below shall be provided with each Proposal.

### **Transmittal Letter**

Proposers must submit a transmittal letter on the Proposer’s letterhead. It must be signed by a representative of the Proposer who is authorized to sign such material and to commit the Proposer to the obligations contained in the Proposal. The transmittal letter must include the name, address, phone number and e-mail address for the Proposer Signatory Contact and must specify the physical address and title of the CMAR Firm’s signatory to any contract documents executed with EPWater. The transmittal letter may include other information deemed relevant by the Proposer and must acknowledge receipt of all addenda.

### **Part 1 – Executive Summary**

The executive summary must include a concise overview of the key elements of the Proposal and must summarize information in the Proposal. The executive summary shall not be used to convey additional information not found elsewhere in the Proposal.

### **Part 2 – CMAR Firm Profile**

A detailed and complete description of the CMAR Firm must be provided in Part 2 of the Proposal. (The term “CMAR Firm” can refer to either a single entity, partnership, or a joint venture.) Information concerning Key Personnel and other firms that may be included on the Project Team, such as sub-consultants and subcontractors, should be provided in Part 3. The CMAR Firm Profile must include the following information.

- General. Provide general information about the CMAR Firm, such as lines of business and service offerings, locations of home and other offices, number of employees (professional and non-professional), years in business, and evidence of required licenses. Provide licenses in Appendix A of the Proposal.
- Legal structure. Identify whether the CMAR Firm is organized as a corporation, limited-liability company (LLC), general partnership, joint venture, limited partnership, or other form of legal entity. Identify whether the CMAR Firm is publicly or privately owned. As applicable, identify the owners of the CMAR Firm (e.g., shareholders, members, partners, and the like) who hold an interest of 10 percent or more. In Proposal Appendix A, provide information on owners of the CMAR Firm who hold an interest of 10 percent or more.
- Project office location. Identify where the CMAR Firm intends to maintain its project office(s) and the location where the construction management work will be performed.
- Financial condition. In Proposal Appendix A, provide audited financial statements for the CMAR Firm for the past three years and quarterly financial statements, certified by the chief financial officer, for the current year. If the CMAR Firm is a joint venture, LLC or partnership, such financial statements must be provided for each partner or member.

- Payment and performance bonds. In Proposal Appendix A, provide a letter from the CMAR Firm's surety to verify the availability of a bond of at least \$100 million for this Project. The surety must be authorized by law to do business in the State of Texas and must have an A.M. Best Company Rating of not less than A VIII. The surety must also be listed in the U.S. Department of Treasury's Circular 570.
- Insurance. In Proposal Appendix A, provide a letter or Certificate of Insurance from the CMAR Firm's insurance company stating its ability to acquire and provide the following minimum limits for the required insurance:
  - Statutory workers compensation insurance (as required by state law): \$1,000,000.
  - Commercial general liability insurance: \$1 million per occurrence; \$2 million annual aggregate; \$2 million for Completed / Operations aggregate.
  - Commercial automobile liability insurance: \$1 million combined single limit per accident for bodily injury and property damage.
  - Umbrella (combined single limit) excess liability insurance above the employer's, general and automobile insurance: \$5 million.
  - Pollution Liability insurance: \$1 million per claim, \$2 million aggregate

The required insurance must be obtained and maintained from insurance companies that have an A.M. Best rating of not less than A VIII or better and are duly licensed or authorized in the State of Texas.

- Safety. Provide a description of the CMAR Firm's corporate safety program and include safety statistics or records indicating categories of accidents and their incidence or frequency rates for the past three years. Identify any state or federal regulatory safety violations received in the last three years. In Proposal Appendix A provide the following safety records for the CMAR Firm for the current and past three years:
  - Documentation of the CMAR Firm's experience modification rate (EMR) calculated by the National Council on Compensation Insurance or similar rating bureau. (The EMR is also referred to as the experience modification rating, experience modification factor, experience modifier or X-mod.) An EMR rating of 1.0 meets the minimum score for this evaluation criteria.

CMAR Firms are advised that key positions identified in Attachment A of this RFP shall be required to take and pass the EPWater Online Safety and Contractor Orientation before beginning construction activity at the worksite.

The Proposal must provide the following additional information pertaining to factors or events that have the potential to adversely impact the CMAR Firm's ability to perform its contractual commitments.

- Material adverse changes in financial position. Describe any material historical, existing, or anticipated changes in financial position, including mergers, acquisitions, takeovers, joint ventures, bankruptcies, divestitures, or any material changes in the mode of conducting business.
- Legal proceedings and judgments. List and briefly describe any pending or past (within 10 years) legal proceedings and judgments, or any contingent liability that could



adversely affect the financial position or ability to perform contractual commitments to EPWater. If no such proceedings or judgments are listed, provide a sworn statement to that effect from the CMAR Firm's general counsel.

- Project claims and disputes. List and briefly describe current or potential project claims or disputes that could adversely affect the financial position or ability to perform contractual commitments to EPWater.
- Completion of contracts. Identify if the CMAR Firm failed to complete any contract, or if any contract has been terminated due to alleged poor performance or default within the past 10 years. If so, describe the circumstances.
- Violation of laws. Identify if the CMAR Firm has been convicted of any criminal conduct or been found in violation of any federal, state, or local statute, regulation, or court order concerning antitrust, public contracting, employment discrimination or prevailing wages within the past 10 years. If so, describe the circumstances.
- Debarred from bidding. Identify if the CMAR Firm has been debarred within the past 10 years, or is it currently under consideration for debarment, on public contracts by the federal government or by any state. If so, describe the circumstances.

If any of the above questions are answered in a manner that indicates that any of these unfavorable factors or events are present, it is the Proposer's responsibility to: (1) describe in detail the unfavorable factor or event and (2) provide sufficient information to demonstrate that the unfavorable factor or event will not adversely impact the Proposer's ability to perform its contractual commitments. Include these responses in Appendix A of the Proposal.

***The Proposer must notify EPWater of any changes in the Firm profile subsequent to submission of the Proposal and before the selection process is completed (and, in the case of the selected Proposer, before executing the CMAR Contract).***

### **Part 3 – Project Team**

Describe the composition, organization, and management of the Project Team in two (2) separate subsections.

#### *CMAR Firm/other firms:*

- Identify any other firms (such as subcontractors and sub-consultants) included on the Project Team and describe the scope of the CMAR Firm's and each other firm's services and responsibilities during the preconstruction and construction phases.
- Provide preconstruction- and construction-phase organizational charts showing the reporting relationships and responsibilities of the CMAR Firm and any other firms and describe the CMAR Firm's overall approach for managing this Project Team.

#### *Key Personnel*

- Identify all Key Personnel (and their firm affiliations) on the Project Team and describe their specific responsibilities during the preconstruction and construction phases of the Project. Key Personnel are identified in Attachment A of this RFP.
- Provide preconstruction and construction-phase organizational charts showing the reporting relationships of all Key Personnel (along with their firm affiliations) and describe the CMAR Firm's approach to the management of such Key Personnel.
- Indicate the commitment of all Key Personnel in terms of an estimated percentage of time

- during each phase of the Project.
- Proposer shall provide resumes for all Key Personnel identified in RFP Attachment A. Resumes are limited to a single page and are to be included in Proposal Part 3. Resumes are not included in the page limits established in this Section. Key personnel experience is to be documented using the resume template provided in RFP Attachment F.

#### **Part 4 – Relevant Project Experience**

The proposal must describe the performance history and experience of the Project Team and its Key Personnel with similar projects and must also provide information concerning safety.

##### *Reference Projects*

Within Part 4, the Proposer shall summarize their relevant project experience for the Haskell VIP in one-page project descriptions. Proposer is limited to submitting seven (7) projects, of which a minimum of two (2) projects (any) shall have utilized the alternative project delivery Manager At-Risk or progressive Design-Build project delivery method. Submitted reference projects should be of similar scope and complexity to the proposed Haskell VIP, and have a minimum contract value of \$50 million. Representative reference projects shall have been completed within the last ten (10) years.

Reference projects descriptions are to follow the requirements identified in RFP Attachment F. In addition to the individual project descriptions, the Proposer is to submit a Reference Project Summary Table. A template for this table is provided in RFP Attachment F.

EPWater intends to contact references listed in the Proposer's Proposal and may contact other potential references if referred to them during this evaluation. EPWater reserves the right to contact any party it deems appropriate and by submitting a Proposal, the Proposer releases the Owner and any references from all liability concerning this exchange of information.

#### **Part 5 – Project Approach**

Provide a preliminary description of the CMAR Firm's approach for managing and performing its services during the Haskell VIP's preconstruction and construction phases. At a minimum, the approach shall address the following items:

- Describe the Proposer's general project management approach for CMAR projects. Identify project management tools used to adhere to contract requirements, administer project correspondence, track progress, maintain a safe working environment, manage cost, quality, and risk.
- Discuss how project communications between the Engineer, EPWater, and Proposer will be established and maintained during the preconstruction and preconstruction phases. Include in this discussion the Proposers approach resolution of issues and conflicts between project team members.
- Discuss how the Proposer envisions the design and construction processes will interface including how constructability issues, construction work packaging, value engineering, and risk issues will be identified by the Proposer, and subsequently communicated and resolved with EPWater and the Engineer.
- Based on the reference documents and Proposer's site visits, provide detailed narrative

of the Proposer's project execution plan. Include a detailed Project schedule identifying preconstruction and construction phase activities corresponding to Proposer's plan. Additionally, identify the specific approach the Proposer shall take in managing this schedule to meet EPWater's planned completion date. Proposer's may insert a QR code into Part 5 of the Proposal narrative. The QR code shall link to a web-based video which complements the Proposer's project execution plan narrative. Videos are limited to 5 minutes in length.

- Identify the preconstruction and construction work elements critical to the Project's success and how they will be addressed.
- EPWater anticipates the need for Early Work Packages (Refer to Sections 2.1, 2.2, and 2.4). Proposer shall describe their process for developing early work packages and negotiating an Initial GMP for their purchase.
- Proposer shall describe their process for developing multiple GMP based on final design documents.
- Identify and discuss key Project risks and the approach for their mitigations. Summarize key project risks in a project risk register which provides the following information: risk description, potential cost and schedule impacts if a risk is realized, probabilities of occurrence and impact, and summary risk mitigation plan. Discuss how the Proposer will utilize the risk register to establish the project contingency carried in the GMP proposal.
- Based on the Proposers review of the technical documents, identify and discuss potential cost savings ideas.
- Provide a summary description of the Proposer's approach to project safety. Provide narrative on how the project safety program will be developed, implemented, and maintained throughout the project. Based on the Proposer's review of the project technical documents, provide an initial lists of potential safety risks and how these risks will be mitigated.
- Provide narrative discussing the Proposers approach to meeting quality expectations identified in the construction documents. Additionally, discuss your approach for correcting non-conforming or deficient work and how the costs for rework are to be compensated under a GMP contract.
- Based on the Proposer's prior experience with CMAR delivery, provide specific example(s) demonstrating how the Proposer through value engineering, innovative construction methods, early work packaging, work sequencing, etc. was able to deliver representative projects for less than the negotiated GMP.

As it relates to the Project Approach, Proposer may provide other relevant criteria deemed to be in the best interest of EPWater.

#### **Part 6 – CMAR Contract Markup (maximum 1 page)**

The Proposer shall provide a summary narrative (maximum 1 page) of the Proposer's review comments on the CMAR Contract. Additionally, the Proposer shall provide in Appendix B (CMAR Contract Markup) a printed version of the proposed modifications of the CMAR Contract

(including its attachments) in redlined/strikeout format, setting forth any and all revisions requested by the Proposer. Within the body of the document, explain the rationale for such revisions and the specific benefits to EPWater such as risk allocation, cost, or time savings. Proposers are encouraged to suggest revisions that would more efficiently allocate risk, improve the parties' understanding of risk allocation, and improve clarity of any terms of the CMAR Contract where ambiguities or uncertainties may arise in their application or interpretation.

In addition to the printed version of the edited contract to be submitted within the proposal document, the Proposer shall provide on a jump drive an editable Word file carrying suggested contract modifications.

Although EPWater will undertake negotiations of the CMAR Contract, the CMAR Contract Markup provided in this proposal will be treated as a de facto offer that the EPWater can accept as is, which would result in a binding contract between the CMAR Firm without further negotiations or revision. EPWater is not obligated to accept any of the requested exceptions, modifications, additions, etc. submitted by the Proposer in the CMAR Contract Markup when negotiating and finalizing the CMAR Contract. Furthermore, EPWater may request additional revisions during negotiations and before finalizing the CMAR Contract.

Proposers are encouraged to carefully review RFP Attachment G (CMAR Contract) and to submit written questions and comments by the deadline specified in Section 4 of this RFP. Based on its assessment of the comments submitted, EPWater (at its sole discretion) may modify the CMAR Contract via addenda. EPWater expects that this review and comment process will substantially reduce the need for extensive post-selection negotiation.

#### **Part 7 – Cost Proposal**

The Proposer shall acknowledge in their Proposal that they have completed and submitted the cost proposal form consistent with the RFP requirements.

RFP Attachment E provides the template Cost Proposal Form to be completed by the Proposer. Cost components are to be provided for Preconstruction Phase Services, Labor multiplier for home office and project site salaried employees, and the Construction Fee the Proposer will apply to the project GMP. If deemed necessary by the Proposer, a one-page supporting narrative may be submitted with the Cost Proposal. The completed Cost Proposal form with the required pricing information will be transmitted to EPWater in a separate, sealed envelope as Proposal Appendix C.

In developing the Preconstruction Services fee to be provided in the Cost Proposal, Proposers shall base their fee on fulfilling the requirements identified in RFP Attachment B, Part A, Preconstruction Phase Services.

Be advised that EPWater is not interested in proposed fees or rates that provide excessive discounts from the CMAR Firm's anticipated actual costs for the requested services. If EPWater determines (at its sole discretion) that the fees and rates included in a Proposal are unacceptably low to perform the services or that a Proposer's fees and rates are substantially or unacceptably below other Proposals, EPWater may (at its sole discretion) either declare that Proposal to be non-responsive and disqualify the Proposer, or seek additional detailed information from that Proposer regarding the cost basis for its cost proposal, prior to rendering a decision on the Proposal's responsiveness.

## **7. PROPOSAL EVALUATION CRITERIA AND SELECTION PROCESS**

EPWater's selection committee (with assistance provided by outside advisors if desired by EPWater) will review and evaluate the Proposals according to the requirements and criteria outlined in this Section 7. During the Proposal evaluation process, written questions or requests for clarifications may be submitted by EPWater to a Proposer regarding its Proposal or related matters. Failure to respond in a timely manner to any such questions or requests may be grounds for elimination of a Proposer from further consideration. In addition, EPWater may require that all or a limited number of Proposers participate in interviews.

### **7.1 Minimum Qualification Requirements**

Each Proposal will be initially reviewed to determine whether it is responsive and responsible to this RFP and whether the Proposer meets minimum qualification requirements identified below. Failure to comply and meet the requirements of this RFP may result in rejection of the Proposal as non-responsive / non-responsible. At its sole discretion, however, the selection committee may waive any such failure to meet a requirement of this RFP and may request clarification or additional information to remedy a failure.

- Refer to Section 6, Proposal Content, for additional information regarding the following table.
- Performance bond. Ability of the CMAR Firm to provide a performance bond in the amount of \$100 million.
- Material adverse condition. The CMAR Firm must not be subject to a material adverse condition, such as pending litigation, insufficient liquidity, weak operating net income or cash flow, or excessive leverage, that gives rise to reasonable doubt concerning its ability to continue to operate as an ongoing concern, to provide performance bonds or insurance, or to maintain sufficient financial strength to undertake and successfully complete the Project and to mitigate/absorb Project risks.
- Licensing and registration. The CMAR Firm and each other firm included in the Proposal must be licensed in the State of Texas for the type of work to be performed.
- CMAR Firm experience. Within the past 10 years, the CMAR Firm must have successfully completed at least three (3) projects involving new or rehabilitated wastewater treatment projects, two (2) lift station improvements, and two (2) force main of comparable scale and complexity for municipal clients in the United States using Design-Bid-Build, CM At-Risk, Competitive Sealed Proposal or Design-Build project delivery methods. Projects submitted in Part 4 of Proposer's Proposal will be used for evaluating this requirement.

<b>Minimum Qualification Requirements</b>	<b>Scoring Basis</b>
Proposer's financial condition considering: <ul style="list-style-type: none"> <li>• Current Bonding capacity and current available capacity</li> <li>• Insurability</li> <li>• Tangible net worth/capitalization</li> <li>• Material adverse conditions</li> </ul>	Pass/Fail
Prior 10 years municipal wastewater treatment project experience	Pass/Fail
Prior 10 years municipal lift station project experience	Pass/Fail
Prior 10 years force main experience (24 inches and larger)	Pass/Fail
Last 5 years EMR rating	Pass/Fail
Legal/Litigation history for the last 10 years	Pass/Fail
Licensing and Registration (as required) in the State of Texas	Pass/Fail
Proposer's responsiveness to the RFP	Pass/Fail

## **7.2 Proposal Evaluation Criteria**

Through a public meeting, EPWater will open, and read aloud the names of the Proposing firms and their proposed Contract Fee. The selection committee will evaluate and rank responsive Proposals by applying the following weighted evaluation criteria to information provided in Proposals meeting the minimum qualification requirements.

- CMAR Firm Profile - 15%
  - General Information
  - Legal Structure
  - Principal Office Location
  - Project Office Location
  - Craft Training Program Highlights
  - Financial Condition
  - Material Adverse Conditions
- Project Team - 20%
  - CMAR Firm and associated Firms
  - Key Personnel and their current and future workload
  - Team Management Approach (firms and personnel)
  - Self-performance Capabilities in Texas
  - Size of Current Texas Based Water/Wastewater Workforce
- Relevant Project Experience - 20%
  - Projects
  - Safety performance
- Project approach - 30%
- Cost Proposal - 15%

In ranking the proposals, the selection committee will use a 100-point scale whereby the maximum points awarded for each of the evaluation criteria will be based on the percentage weight set forth above. The selection committee will perform their non-price evaluation and complete its awarding of the non-price criteria points of the proposals before interview (if required) and before scoring the cost proposal forms.

### **7.3 Interviews**

EPWater may conduct formal interviews to allow the Proposers to further explain their written Proposal, focusing on their specific approach to successfully execute both phases of this CMAR project. Interviews will be limited to 60 minutes, providing 40 minutes for the Proposers to discuss their project approach and where the Proposers creativity and innovation will be beneficial to reducing project cost and risk. The presentation will be followed by up to 20 minutes of questions posed by EPWater selection committee members.

Interview attendees will be limited to the ten Proposer's Key Staff identified in the Proposers Proposal. While the Proposer is free to develop their own approach to the interview, EPWater does not expect all ten key staff to participate in the interview process. Interviews, if conducted, will be scored by the selection committee using a 10-point scale.

### **7.4 Scoring and Selection**

EPWater will select the CMAR submitting the proposal offering best value to the utility based on the selection criteria and scoring approach identified in this RFP. EPWater will attempt to negotiate final contract terms, if required, with the top ranked Proposer. If EPWater is unable to successfully negotiate final contract terms with the top ranked Proposer, it shall formally notify the Proposer it is ending negotiations and proceed to negotiate final contract terms in the order of the selection ranking until a contract is reached or negotiations with all ranked Proposers ends. At any time during this process, EPWater has the option to cancel the CMAR procurement, and have the Engineer complete the design and competitively bid construction of the Project.

Proposers are advised that the cone of silence will remain in effect until after award of the CMAR contract. Following selection and successful negotiation of the CMAR contract, EPWater will debrief unsuccessful Proposers if requested. Requests and inquiries concerning a request for a debriefing shall be directed to [purchasing.info@epwater.org](mailto:purchasing.info@epwater.org).

## **8. CONDITIONS FOR PROPOSERS**

EL PASO WATER UTILITIES – PUBLIC SERVICE BOARD, a component of the City of El Paso, whose Board of Trustees is vested with management and control of the City of El Paso water and wastewater system is a public entity in the State of Texas created under Texas Government Code Chapter 10. The procurement process for this Project is authorized under Subchapter F, Section 2269.251.

The following firms and individuals are serving in an advisory capacity to the Owner for this Project and are therefore not eligible to assist or participate with any Proposer that submits a Proposal for the Project.

- Arcadis, U.S. Inc.
- Garver
- Parkhill
- Hazen and Sawyer

### **8.1 Conflict of Interest**

EPWater mandates the public disclosure of certain information concerning persons doing business or seeking to do business with the utility, including affiliations and business and financial relationships such persons may have with EPWater officers. The ethical standards of

conduct required of employees, vendors, potential vendors, and anyone acting on behalf of EPWater are listed below and are designed as a general guidance and are not to conflict with Federal, State, and local laws.

Code of Ethics:

1. To consider first, the interest of the Utility in all transactions and to carry out and believe in its established policies.
2. To buy without prejudice or personal gain, seeking to obtain the maximum ultimate value for each dollar of expenditure.
3. To grant all competitive suppliers equal consideration insofar as local, state, or applicable federal statutes permit.
4. To accord a prompt and courteous reception, so far as conditions will permit, to all who call on a legitimate business mission.
5. To conduct business with potential and current suppliers in an atmosphere of good faith, devoid of intentional misrepresentation.
6. To subscribe to and work for honesty and truth in buying and selling, and to denounce all forms and manifestations of commercial bribery.
7. To respect his/her obligations and to require that obligations to him/her and the Utility be respected, consistent with good business ethics.
8. To be receptive to competent counsel from his/her colleagues and to be guided by such counsel without impairing the dignity and responsibility of his/her office.
9. To cooperate with all organizations and individuals engaged in activities designed to enhance the development and standing of purchasing.
10. To decline offers for personal gain from an actual or potential vendor.
11. To ensure that he/she does not knowingly disclose confidential information for personal gain to actual or potential vendor.
12. Employees are prohibited from soliciting anything of value for personal gain from an actual or potential vendor.

Employees must comply with EPWater Ethic's policy as well as the City of El Paso Ethics ordinance, both located in the Utility's intranet under Administrative policies.

**8.2 Proprietary Information**

All materials submitted to EPWater become public property and are subject to the Texas Public Information Act, Chapter 522, Texas Government Code "(the Act)". Most information collected, assembled, or maintained by the City and/or EPWater in connection with the transaction of official business is public information subject to disclosure upon written request. The Act exempts certain categories of information from required public disclosure. The Office of the Attorney General determines whether information may be withheld, not the City or EPWater.

All information provided to EPWater will be handled in accordance with the Act and the



requirements of the Texas Public Information Act while in EPWater's possession. All documents provided to EPWater should be regarded as public records and subject to disclosure; provided however, such documents will be held in confidence by EPWater as required by the Act.

PRIVATE ENTITIES ARE CAUTIONED THAT ONCE A DOCUMENT IS PROVIDED TO EPWATER, ALL INFORMATION CONTAINED THEREIN WILL BE AVAILABLE TO THE PUBLIC UNLESS THE INFORMATION IS EXCEPTED FROM THE REQUIREMENTS OF THE PUBLIC INFORMATION ACT.

Private Entities who claim that information provided to EPWater should be protected from public disclosure may be asked to support such claim if the City or EPWater receives an Open Records request for the information and requests a determination by the Attorney General.

### **8.3 Rights of the Owner**

In connection with this procurement process, including the receipt and evaluation of Proposals and award of the CMAR Contract, Owner reserves to itself (at its sole discretion) all rights available to it under applicable law, including without limitation, with or without cause and with or without notice, the right to:

- Cancel, withdraw, postpone, or extend this RFP, in whole or in part, at any time prior to the execution of the CMAR Contract, without incurring any obligations or liabilities.
- Modify the procurement schedule.
- Suspend and terminate the procurement process or terminate evaluations of Proposals received.
- Permit corrections to data submitted with any Proposal.
- Conduct discussions and correspondence, with one or more of the Proposers to seek an improved understanding of any information contained in a Proposal.
- Seek or obtain, from any source, data that has the potential to improve the understanding and evaluation of the Proposals.
- Seek clarification from any Proposer to fully understand information provided in the Proposal and to help evaluate and rank the Proposers.
- Reject a Proposal containing exceptions, additions, qualifications or conditions not called for in the RFP or otherwise not acceptable to the Owner.
- Conduct an independent investigation of any information, including prior experience, included in a Proposal by contacting project references, accessing public information, contacting independent parties, or any other means.
- Through EPWater's Procurement Contact identified in this RFP, request additional information from a Proposer during the evaluation of its Proposal.
- EPWater reserves the right to use any/all information provided by the Proposer under this solicitation to deliver the highest value project for EPW.

- EPWater shall not be responsible for any cost incurred by Proposers because of participation in this selection process. Each Proposer shall bear its own expense in connection with the preparation and submission of materials and the provision of any supplemental information requested. The Owner shall have no liability for cost incurred by Proposers in connection with the review and evaluation of qualification materials and any findings and determinations made therefrom.

#### **8.4 Obligation to Keep Project Team Intact**

Proposers are advised that all firms and Key Personnel identified in the Proposal shall remain on the Project Team for the duration of the procurement process and execution of the Project. (The anticipated dates for award of the CMAR Contract and for completion of the Project are set forth in Section 4 of this RFP.) If extraordinary circumstances require a change, it must be submitted in writing to the identified EPWater Contact, who, at his or her sole discretion, will determine whether to authorize a change, recognizing that certain circumstances (such as termination of employment) may occur that are beyond the CMAR Firm's control. Unauthorized changes to the Project Team at any time during the procurement process may result in elimination of the Proposer from further consideration.

#### **8.5 Protests**

Any protest to an Owner's action in connection with this procurement must be filed in writing no later than five (5) business days following such action and must be in strict accordance with EPWater's applicable procedures and with applicable law.

## ATTACHMENT A – DEFINITION OF TERMS

The definitions of some of the capitalized terms used in this RFP are presented below:

**CMAR Firm or CMAR**– The entity that will enter into the CMAR Contract with EPWater and that will be the single point of accountability to EPWater for delivery of the services and the Project. The term “CMAR Firm” can refer to either a single entity, partnership, or a joint venture.

**Engineer** – The engineering firm that will provide professional design services and have responsible charge of the design, including preparation of the construction documents.

**Draft CMAR Contract** – The draft Contract, including the agreement and all of its attachments, presented as RFP Attachment G.

**Key Personnel** – The individuals, employed by the CMAR Firm or other firms included on the Project Team, who would fill certain key roles in delivery of the Project and related services, including the following positions:

Project Manager	Construction Manager	Site Safety Officer
Preconstruction Manager	Lead Estimator	General Superintendent
Startup Manager	Quality Manager	Scheduler
Commercial Manager		

**Project** – Haskell R. Street WWTP Various Improvements Project

**Project Team** – The CMAR Firm, Key Personnel, and any additional firms (such as subcontractors and sub-consultants) included in the Proposal.

**Proposer** – The CMAR Firm entity responding to this RFP by submitting a Proposal.

## ATTACHMENT B – SCOPE OF CMAR SERVICES

The CMAR Firm will provide the following preconstruction- and construction-phase services, as identified and described in the Proposal.

### A. PRECONSTRUCTION-PHASE SERVICES

Preconstruction-phase services will include the following tasks, subject to negotiation of the final Preconstruction Services contract:

#### **Haskell R. Street WWTP Various Improvements Project**

This Preconstruction Services Scope of Work is to be provided by (insert name), the selected Construction Manager At-Risk (CMAR), for El Paso Water's (EPWater's) Haskell R. Street WWTP Various Improvements Project.

For the Preconstruction Phase, the CMAR will support EPWater and the Engineer with design development, performance of field investigations, estimating construction costs, constructability reviews, pursuing project value, and managing an integrated project schedule. CMAR shall provide advice on construction means and methods and sequencing of the work to provide for a seamless integration of the new Haskell VIP into existing EPWater infrastructure.

Based on the Draft 100% Design Submittal, CMAR shall develop a Guaranteed Maximum Price (GMP) proposal to construct the work in accordance with the Construction Agreement. The Construction Phase shall begin upon successful negotiation of the CMAR's GMP Proposal and Construction contract.

The performance period for Preconstruction Phase services is expected to span 12 months. Tasks to be performed during the Preconstruction Phase scope of services are organized into the following four (4) major tasks. Specific details and deliverables for each task and associated subtasks are established on the following pages. Changes or modifications to the scope of services and associated deliverables identified in these tasks shall be amended according to the provisions contained within the Preconstruction Agreement.

Task 1 - Project Management

Task 2 - Site Investigations

Task 3 - Design Reviews, Cost Estimates, and Value Engineering

Task 4 - GMP Proposal Preparation and Negotiation

#### **Task 1 - Project Management**

Task 1 provides for management, administration, and coordination with EPWater, the Engineer, and other project stakeholders. Services to be provided by the CMAR are detailed in the following subtasks comprising Task 1.

Task 1.1      Develop the Project Management Plan

Within 45 calendar days of receipt of the preconstruction phase Notice to Proceed, the CMAR is to prepare a Draft Project Management Plan (PMP). The PMP shall include a communication plan, risk management plan, and procedures for cost and schedule control, document control, change management, and other Project Management requirements. EPWater and their Engineer will review the draft PMP and provide comments to the CMAR. The CMAR will resolve the review comments with EPWater and the Engineer for incorporation into the final PMP.

#### Task 1.2 Conduct Project Kickoff and Project Partnering

Within 30 calendar days of the Notice to Proceed, the CMAR will be responsible for planning and conducting a Project Kick-off Meeting. Attendees will include key staff from EPWater, CMAR, and Engineer. The purpose of the meeting is to discuss issues dealing with project administration, and to discuss and implement procedures allowing EPWater, CMAR, and Engineer to perform their respective obligations under the CMAR Contract and the Engineer Contract. The CMAR will prepare a meeting summary and will distribute to the attendees. Project Partnering shall be conducted in El Paso by an outside consultant/facilitator and shall be sponsored by the CMAR. Participants in the half-day workshop shall include key staff from the CMAR, EPWater, and Engineer. Follow-up partnering meetings will be held every 3 months during both the preconstruction and construction project phases.

#### Task 1.3 Contract Management and Administration

This task involves managing the Preconstruction Phase Contract and confirming compliance with its terms and conditions and developing any scope amendments that may be required (e.g., field investigations, surveying), including communications between EPWater and CMAR as required. CMAR will provide oversight of project staff and shall prepare and submit monthly invoices by the 10th of each month.

#### Task 1.4 Project Management System

CMAR shall implement a web-based project management system utilizing Procore for both the preconstruction and construction phases of the project. This system will be deployed to provide access for EPWater, Engineer, and CMAR subcontractors and suppliers. EPWater will provide the Procore license. CMAR shall be the Procore project administrator

#### Task 1.5 On-site Project Facilities

The CMAR will develop a plan for establishing, maintaining, and demobilizing the Site Office. This plan will designate the location of the Site Office with respect to the construction work, required laydown areas, staff parking requirements, egress/ingress routes, and utility requirements. Additionally, the plan will identify the space requirements for CMAR, EPWater, and Engineer staff. The draft plan will be submitted for review and comment by EPWater and Engineer. The CMAR will incorporate the comments received and submit a final plan for EPWater review and approval. EPWater and the CMAR will jointly determine where the Site Office is to be located, and when this determination is made, the CMAR will implement the plan.

#### Task 1.6 Project Schedule

Within 30 calendar days of the Notice to Proceed, the CMAR will submit a draft baseline Project schedule, using the latest Primavera P6 version. The baseline schedule will include detail level activities for CMAR's pre-construction scope and summary level detail for the construction activities. The Engineer will provide the CMAR with its detailed baseline schedule for design phase activities for incorporation into the overall project schedule. The Project Schedule will be updated monthly in accordance with the requirements of Section 3 of the Preconstruction Agreement. As the design approaches completion, the CMAR shall expand the baseline schedule to include detailed construction activities. The expanded baseline schedule will be incorporated into the CMAR's GMP Proposal.

### Task 1.7 Project Reporting

By the 10th day of the month, CMAR will prepare and submit their monthly project report for the preconstruction services phase of the project. Monthly reports will summarize activities completed for the current invoice period as well as activities planned for the upcoming month. Project controls information will be included in the report. A cost summary will be provided, presenting actual costs versus planned costs with details regarding any variances to plan. A summary narrative of planned schedule progress versus actual progress will be presented with updates on key milestones dates and activities. The report will include narrative regarding design development support activities, project risks, and issues being faced by the project team. The current Risk Register, and Issues Log will be included as attachments to monthly reports. Monthly project reports will be presented in a format to be agreed upon between the CMAR and EPWater within 30 days of Notice to Proceed.

### Task 1.8 Progress Meetings

Progress Meetings will be conducted by the CMAR monthly during the preconstruction phase. The standing meeting agenda will be developed by the CMAR with input from EPWater and the Engineer. Progress Meetings will be conducted via MS Teams. Attendees will include EPWater, the Engineer, the CMAR, and the CMAR's subcontractors. Each meeting is assumed to last no more than 2 hours. CMAR will submit minutes for each progress meeting.

### Task 1.9 General Coordination Meetings

CMAR will coordinate with Engineer throughout the advancement of the design from the Draft 100% Design Submittal to the Final 100% Design Submittal through participation in bi-weekly Design Progress meetings when request by the Engineer. CMAR will participate via MS Teams to address project specific issues or questions.

### Task 1.10 Project Health and Safety

CMAR is to engage with Engineer and EPWater to gather information needed for developing the project Safety Plan to support site investigations during the preconstruction services phase of the project. Site investigations to be performed include soil borings, subsurface utility locations, confirmation of facility as-builts, and assessment of structural conditions. CMAR will develop a Safety Plan suitable for the site investigations to be performed that provide the controls needed to prevent occupational injuries, illnesses, and damage to EPWater property. CMAR will submit a draft Safety Plan for EPWater review and comment. CMAR will reconcile and incorporate EPWater comments into the final Safety Plan.

### Task 1.11 Quality Assurance and Quality Control (QA/QC) for Preconstruction and Construction

The CMAR will identify a Quality Manager who will be responsible for developing and implementing the project QA/QC Program. The CMAR's Quality Manager will convene a meeting (not more than 2 hours) with EPWater and Engineer to present CMAR's proposed approach for implementation and management of the construction QA/QC program. This meeting will discuss the CMAR's recommended approach for the performance of quality control and quality assurance during the construction of the project. A key aspect of this discussion will be to reach agreement on the roles and responsibilities for the CMAR, EPWater, Engineer, and third-party testing agencies. The results of the meeting will be memorialized in a memo to be submitted by the CMAR.

## Task 1.12 Construction Procurement Planning

CMAR will develop a Construction Procurement Plan prepared in compliance with Texas Government Code Title 10, Subtitle F, Chapter 2269, Subchapter F, Sections 2269.255 and 256. This Plan will describe the CMAR's approach for establishing a pool of prequalified construction trade subcontractors, equipment vendors, and material suppliers that will be invited to submit competitive bids for the construction trade work packages, and requests for quotations for equipment and material.

Based on the expected work to be performed for the project, the CMAR will identify how the work will be broken into work packages that will maximize bidder participation and competition. CMAR shall also detail in the Plan their approach to encouraging participation of small locally owned, minority-owned, and women-owned businesses in the project.

The Engineer is preparing an early work packages (Sections 2.1, 2.2, and 2.4) for the CMAR to bid. In developing the Construction Procurement Plan, the CMAR will investigate the need for additional early procurement of long lead equipment items and any construction work packages that would need to be initiated during the preconstruction phase. Working with the Engineer and EPWater, the CMAR's investigation will include outreach to prospective equipment vendors and material suppliers to understand fabrication and supply chain constraints having the potential to disrupt construction sequencing and delay on-time completion of the project. As part of Task 2.4, the CMAR will interface with EPWater Plant Operations staff to determine and identify if maintenance shutdowns would be necessary to occur during the Haskell VIP construction phase. The results of these investigations will be documented in the draft Plan.

The initial draft Plan shall identify construction work packages (subcontract, vendor, and supplier) and those work packages the CMAR plans to submit their own sealed, competitive bid(s). The process to be used by the CMAR for solicitation and receipt of competitive bids and quotations will also be identified in the Plan and will comply with applicable EPWater procurement requirements. CMAR will also describe their approach for evaluating, scoring, and recommending awards for construction subcontracts, and equipment and material purchases.

A draft Plan shall be submitted to EPWater for review and comment not later than 60 calendar days after the CMAR has received Notice to Proceed for the preconstruction services phase. EPWater will return review comments to the CMAR within 14 calendar days of CMAR's submission. Within 7 calendar days after CMAR's receipt of EPWater comments, CMAR will convene a workshop to review and resolve EPWater comments on the Plan. CMAR will submit a revised, final Plan incorporating EPWater's comments within 7 days of the workshop.

### Project Management Deliverables

Task	Deliverable	Quantity	Media*
1.1	Draft Project Management Plan Final Project Management Plan	1	Electronic submittal
1.2	Initial Project Kickoff and Partnering Meeting and Monthly Partnering Meeting Minutes	8	Electronic submittal
1.3	Monthly invoices	1	Hard copy and email
1.5	Draft On-site Project Facilities Plan Final On-site Project Facilities Plan	1	Electronic submittal
1.6	Project Baseline Schedule	1	Electronic submittal

<b>Task</b>	<b>Deliverable</b>	<b>Quantity</b>	<b>Media*</b>
	Monthly Schedule Updates		
1.7	Monthly Project Reports	1	Electronic submittal
1.8	Monthly Progress Meeting Minutes	1	Electronic submittal
1.10	Safety Plan	1	Electronic submittal
1.11	Construction QA/QC Approach Memo	1	Electronic submittal
1.12	Draft Construction Procurement Plan Final Construction Procurement Plan	1	Electronic submittal

\*Any deliverable shall be submitted in hard copy if requested by EPWater.

## **Task 2 - Site Investigations**

CMAR shall coordinate with the Engineer and EPWater to identify field investigations required to support design development, prepare risk mitigation plans, and gather information needed to support development of Maintenance of Plant Operations (MOPO) Plans during construction.

### **Task 2.1 Geotechnical Investigations**

If additional geotechnical investigations are deemed necessary, the CMAR shall coordinate with Engineer on the locations and number of soils borings and provide recommendations on additional borings if needed beyond those recommended by the Engineer. It is assumed that this task will include two meetings/site visits.

Note: Cost for this task will be determined and negotiated during the Pre-Construction Phase once design drawings initiated to determine the associated level of effort.

### **Task 2.2 Subsurface Utility Verifications**

CMAR shall assist the Engineer in field verification of existing utility locations within the boundaries of the site work areas if requested. CMAR shall be responsible for subcontracting for subsurface utility verification services. CMAR is to assume this task will include two meetings/site visits/investigations. Engineer will support these investigations by providing documentation of the findings with a memo and marked up site plan. CMAR and Engineer will determine if the utility verifications identify impacts on the design and construction of the project.

Note: Cost for this task will be determined and negotiated during the Pre-Construction Phase once design drawings initiated to determine the associated level of effort.

### **Task 2.3 Verification of As-Built Conditions**

CMAR shall assist Engineer in the validation of as-built conditions of the existing facilities to identify constructability issues which may impact construction means and methods. CMAR will participate in up to two on site meetings (up to four hours each) with Engineer to evaluate and document as-built conditions through annotated drawings.

Note: Cost for this task will be determined and negotiated during the Pre-Construction Phase once design drawings initiated to determine the associated level of effort.

### **Task 2.4 Plant Operations Interface**

CMAR will conduct two workshops with EPWater plant operations staff and Engineer to present



MOPO Plans needed to facilitate project construction. CMAR will develop draft MOPO Plans and submit to EPWater and Engineer for review two weeks prior to each workshop.

EPWater and Engineer will present their written comments on the MOPO Plans at each workshop. Comments will be resolved at the workshop and the CMAR will make revision to the Plans for EPWater and Engineer review and approval. Finalized MOPO Plans will be incorporated into the GMP Proposal.

Note: Cost for this task will be determined and negotiated during the Pre-Construction Phase once design drawings initiated to determine the associated level of effort.

### Site Investigation Deliverables

Task	Deliverable	Quantity	Media
2.1	Site plan illustrating locations for proposed additional soil borings	1	Electronic submittal
2.2	Memo and site plan illustrating utility verification locations and findings	1	Electronic submittal
2.3	Annotated record drawings	1	Electronic submittal
2.4	Draft MOPO Plan(s) Final MOPO Plan(s)	1 1	Electronic submittal

### Task 3 – Design Reviews, Cost Estimates, and Value Engineering

The design engineering firms will complete and provide design documents at 30%, 60%, and 95% complete. The CMAR Firm will assist with design reviews, value engineering, and cost estimates. The following table summarizes the services to be provided. It is noted that the design for Improvement Packages 1 and 2 are completed at 95%.

	Improvement Package	Design Reviews and Cost Estimates		
		30%	60%	95%
1	36-inch Sluice Gate Replacement	No	No	Yes
2	Headworks Odor Control	No	No	Yes
3	Grit Removal System Improvements	No	Yes	Yes
4	Alfalfa Lift Station	CMAR will provide these services; however, costs will be determined and negotiated during Pre-Construction Phase.		
5	Alfalfa Force Main			
6	Anoxic Basin			
7	Aeration System			
8	Aeration Channel Cover			
9	Odor Control at Dewatering Building			

### Task 3.1 Design Coordination

As the design advances for Improvement Packages 3 through 9, the CMAR will support the Engineer through this design phase. CMAR will address day-to-day matters of design development involving constructability, cost, maintenance of plant operations, tie-in approaches, design discipline coordination, risk identification and their planned mitigations, and others matters that Engineer and EPWater seek support.

Throughout this interaction, CMAR will develop and actively maintain a Design Evolution Log, Issues Log, and Risk Register, and provide formal updates at regularly scheduled project meetings with the Engineer and EPWater.

### Task 3.2 Value Engineering and Constructability Review

Value Engineering and CR comments generated in the workshop shall be recorded by the CMAR in a spreadsheet summarizing the comment, its positive or negative benefits, as well as an order of magnitude assessment of the impact on project cost and schedule. The CMAR will submit the spreadsheet to EPWater and the Engineer for review and evaluation.

Within two weeks of each workshop, CMAR shall convene a meeting (not to exceed two hours, each) to receive input and address questions from EPWater and the Engineer on the CMAR's review comments. At this meeting, EPWater shall identify Value Engineering and Constructability Review comments which are to be incorporated into the project scope and design. The CMAR will incorporate EPWater approved modifications into the Design Evolution Log to record design modifications and their overall impact on the project cost and schedule.

### Task 3.3 Cost Estimates

The CMAR Firm will prepare cost estimates in accordance with the guidelines established by the Association for the Advancement of Cost Engineering (AACE), recommended practice 19R-97, as follows:

- Class A: at 95% design complete,
- Class B: at 60% design complete), and
- Class C: at 30% design complete

The CMAR will prepare the estimate in the format developed in Task 1.12 and submit to EPWater for review. Engineer will complete an independent cost estimate and submit to EPWater for review.

Following reviews from EPWater and Engineer, the CMAR Firm will prepare and submit revised cost estimates incorporating the results of the reconciliation review as well as an updated Design Evolution Log.

### Task 3.4 Workshops

Following the preparation of design documents at 30%, 60%, and 95%, the CMAR Firm will convene workshop meetings (lasting no more than 2 hours, each) with the Engineer and EPWater to review its findings on the following:

- Design Review

- Constructability Review
- Value Engineering
- Cost Estimates

The purpose of these workshops is to identify elements that appear to be misaligned with the project intended scope, develop and offer design alternatives with the potential to reduce cost, simplify construction, mitigate known risks, improve facility operability and construction, avoid conflicts with current plant operations, and simplify maintenance activities. The workshops are anticipated to be in person with representatives from EPWater and Engineer. Additional staff members not based in El Paso will be invited to participate via MS Teams.

The CMAR Firm will convene a total of 21 workshop meetings as follows:

<b>Improvement Package</b>	<b>Workshops</b>
1 and 2	1
3	2
4	3
5	3
6	3
7	3
8	3
9	3
<b>Total</b>	<b>21</b>

### Task 3.5 Cost Model

CMAR shall develop a Construction Cost Model for the project for EPWater's review and approval. The purpose of the model is to describe the cost estimating framework to be implemented by the CMAR so that cost estimates can be effectively reviewed and reconciled at each design milestone. The Cost Model will specify how the estimate is to be organized, grouped, and summarized as well as how scope items are to be conveyed in discrete, line-item detail within the estimate. The Cost Model shall identify all costs that will be included in the GMP, including labor with manhours and dollars, material, equipment, detailed and transparent general conditions, bonds, taxes, construction fee, contingency, and allowances. CMAR will submit the Cost Model in memo format for EPWater and Engineer review and comment. CMAR will convene a meeting (no more than 2 hours) to discuss and resolve EPWater and Engineer comments. CMAR will submit a final memo incorporating the results of the review meeting.

Note: Cost for this task will be determined and negotiated during the Pre-Construction Phase once design drawings initiated to determine the associated level of effort.

### Task 3.6 Design Reviews

CMAR will identify impacts to the project scope, schedule, and budget resulting from the advancement of the design, 30%, 60%, and 95% complete. Identified impacts will be documented in the Design Evolution Log. Final 100% Design Submittal review comments and a revised Design Evolution Log will be submitted to the Engineer and EPWater.

This Task focuses on supporting EPWater and Engineer through the design effort as it relates to the preparation of final, sealed design documents to be used for project permitting and

construction. Additionally, review comments made on the design submittal will be reconciled with the GMP Proposal, as required.

**Task 3.7 GMP Proposal Reconciliation**

Based on the results of design reviews, value engineering, and constructability reviews, CMAR will prepare/update GMP Proposal, as required.

**Design Review, Value Engineering, Constructability Reviews, and Meeting Deliverables**

<b>Task</b>	<b>Deliverable</b>	<b>Quantity</b>	<b>Media</b>
3.1	Updated Risk Register, Issues Log, and Design Evolution Log	1	Electronic submittal
3.2	Value engineering and constructability reviews spreadsheet at 30%, 60%, and 95%. Refer to table.	1	Electronic submittal file
3.3	Cost estimates at 30%, 60%, and 95% for each Improvement Package, refer to table.	1	Electronic submittal
3.4	Cost Model Memo	1	Electronic submittal
3.5	Minutes and agendas from meetings/workshops	1	Electronic submittal

**Task 4 - GMP Proposal Preparations and Negotiations**

In accordance with Preconstruction Contract articles 1.2 and 5.1, EPWater plans to contract for Haskell VIP construction services in two separate phases. In Phase 1, EPWater will enter into an Initial GMP for non-construction services including design review, constructability review, cost estimates, project coordination, and project management. Refer to Attachment B. In Phase 2, EPWater will enter into a final GMP for the remainder of the Haskell VIP construction work. It is noted that there may be multiple GMP relative to Phase 2.

Prior to starting Construction Phase and shortly after project award, the CMAR Firm will begin the Early Work Packages. Refer to Sections 2.1, 2.2, and 2.3. For projects described in Sections 2.1 and 2.2, constructability review and cost estimates will follow the preparation of a GMP.

CMAR will develop and negotiate the GMP proposals in accordance with the approved Construction Procurement Plan. This task includes utilizing the design documents from the Improvement Packages for bidding portions of the work, trade subcontract work packages, and requesting binding quotations for equipment and materials. CMAR will competitively bid the work in accordance with the Construction Procurement Plan and Construction contract.

CMAR will develop GMP proposals based on CMAR's recommendation for award of trade subcontract bids, and quotations for equipment and permanent materials. CMAR's recommendations for award are to be documented in an open book format. CMAR recommendations for award can be based on cost and non-cost criteria. Examples of non-cost criteria include subcontractor/vendor qualifications, project approach, acceptance of subcontract and purchase order terms, and other risk factors.

The GMP Proposal format will be developed consistent with the requirements established in

the Preconstruction Contract.

#### Task 4.1 Development of GMP

The CMAR will prepare a GMP for the Improvement Projects that are ready for construction. For each GMP, the CMAR Firm will prepare workshops as follows:

Task 4.1.1 Initial GMP Workshop 1 – CMAR will conduct the Initial GMP workshop (not longer than 2 hours, each) with EPWater and Engineer. This workshop will be used to describe the CMAR's approach to competitive bidding of the packages, and will also detail the CMAR's process for receiving, evaluating, and recommending bids and quotations used to establish the basis for the Initial GMP.

Task 4.1.2 Implement the Construction Procurement Plan for the Initial GMP – CMAR will update the Construction Procurement Plan based on the CMAR's final approach to bidding the Early Work Packages.

Task 4.1.3 Competitive Bidding – CMAR will conduct the competitive bidding process in accordance with the Construction Procurement Plan. CMAR shall follow the bidding requirements of the Construction Procurement Plan if they elect to compete for trade subcontract work.

Task 4.1.4 Initial GMP Workshop 2, Proposal Presentation – CMAR will develop the Initial GMP proposal in accordance with the provisions of the Construction Contract. Within 21 days after receipt of bids and quotations, CMAR will convene a second Initial GMP workshop (not longer than 2 hours, each) to present the Initial GMP Proposal to EPWater. The purpose of this workshop is to 1) familiarize EPWater with the proposal contents and 2) identify the CMAR's basis of selection of trade subcontractor bids and supplier quotations used to establish the Initial GMP.

Task 4.1.5 Negotiation of the Initial GMP Proposal – Within 14 days of the GMP Proposal Presentation workshop with EPWater, the CMAR will convene a series of meetings to negotiate the Initial GMP Proposal.

#### Task 4.2 Development of the Final GMP

Task 4.2.1 Final GMP Workshop 1 – CMAR will conduct a Final GMP workshop 1 (not longer than 2 hours) with EPWater and Engineer. This workshop will be used to describe the CMAR's approach to competitive bidding of the remainder of the work not incorporated in the Initial GMP. CMAR will also detail the process for receiving, evaluating and recommending bids and quotations used to establish the basis for the Final GMP.

Task 4.2.2 Implement the Construction Procurement Plan – CMAR will update the Construction Procurement Plan based on the CMAR's final approach to bidding the project. CMAR will use the Draft 100% Design Submittal documents for the technical content to be provided in the trade subcontract bid documents, and equipment and material requests for quotations.

Task 4.2.3 Competitive Bidding – CMAR will conduct the competitive bidding process in accordance with the Construction Procurement Plan. CMAR shall follow the bidding requirements of the Construction Procurement Plan if they elect to compete for trade subcontract work.

Task 4.2.4 Final GMP Workshop 2, Proposal Presentation – CMAR will develop the Final GMP proposal in accordance with the provisions of the Construction Contract. Within 21 days after receipt of bids and quotations, CMAR will convene a second Final GMP workshop (not longer than 4 hours) to present the Final GMP Proposal to EPWater. The purpose of this workshop is to 1) familiarize EPWater with the proposal contents and 2) identify the CMAR's basis of selection of trade subcontractor bids and supplier quotations used to establish the Final GMP.

Task 4.2.5 Negotiation of the GMP Proposal – Within 14 days of the Final GMP Proposal Presentation workshop with EPWater, the CMAR will convene a series of meetings to negotiate the Final GMP Proposal.

### **GMP Proposal Deliverables**

<b>Task</b>	<b>Deliverable</b>	<b>Quantity</b>	<b>Media</b>
4.1.1	Minutes from Initial GMP Workshop 1	1	Electronic submittal
4.1.2	Updated Construction Procurement Plan	1	Electronic submittal
4.1.3	Bid schedule	1	Electronic submittal
	Bid and solicitation advertisement(s)	1	Electronic submittal
	Bid and solicitation request(s)	1	Electronic submittal
4.1.4	Initial GMP Proposal	1	Electronic submittal
4.1.5	Negotiated Initial GMP Proposal	1	Electronic submittal
4.2.1	Minutes from Final GMP Workshop 1	1	Electronic submittal
4.2.2	Updated Construction Procurement Plan	1	Electronic submittal
4.2.3	Bid schedule	1	Hard copy and 1 PDF digital file
	Bid and solicitation advertisement(s)	1	Hard copy and 1 PDF digital file
	Bid and solicitation request(s)	1	Hard copy and 1 PDF digital file
4.2.4	Final GMP Proposal	1	Hard copy and 1 PDF digital file
4.2.5	Negotiated Final GMP Proposal	1	Hard copy and 1 PDF digital file

## **B. CONSTRUCTION-PHASE SERVICES**

Construction-phase services will include the following activities:

### **Project Management**

1. Provide all Key Personnel identified in the RFP and other personnel necessary to fully meet the CMAR Firm's obligations for construction services;
2. In conformance with the CMAR contract, obtain the necessary bonds and insurance;
3. Within 14 days of the notice to proceed for the construction phase, update the construction management plan and implement the safety, quality, and subcontractor management plans;
4. Convene and manage up to three (3) Project kick-off meetings for construction-phase services;
5. Coordinate with various local and state agencies, as necessary;
6. Implement procedures for the tracking, review and approval of submittals, shop drawings, pay requests, etc.;
7. Manage shop drawing preparation for permanent equipment and materials to be incorporated into the project;

### **Construction**

1. Perform construction in strict accordance with the CMAR Contract;
2. Maintain the project site including storm water runoff, dust control, removal of refuse temporary utilities, etc.;
3. Establish and implement procedures to track, expedite and process all submittals, change orders, and requests for information;
4. Develop, review and process shop drawings and other documents for submission to Engineer;
5. Maintain the critical path method schedule for the Project established in the preconstruction phase, monitor and update the construction schedule monthly, prepare two-week look ahead work schedules consistent with overall schedule;
6. Review and process all pay applications from subcontractors;
7. Conduct monthly progress meetings to be attended by EPWater, the Engineer, on-site subcontract trade foremen and/or superintendents;
8. Procure material and equipment to support construction activities of the CMAR and their trade subcontractors;
9. Coordinate and manage all construction including all required facilities, appurtenances, site improvements, and other associated work required to make a complete and operable system within the GMP and the specified contract time;
10. Provide regular inspection of all construction work performed by the CMAR and their subcontractors to ensure conformance with the contract documents;
11. Prepare and submit timely monthly progress report and payment application with current cost and schedule information;
12. Maintain current hard copies of project as-built drawings, including all subcontracted work, and submit monthly in hard copy, PDF and electronic format, as specified by the CMAR contract;

#### **Checkout, Startup, and Commissioning**

1. Expedite and coordinate delivery, storage, security, and installation of EPWater procured material and equipment, as applicable.
2. Support Engineer in development and implementation of O&M training, and Checkout, Start-up and Commissioning Plan in order for EPWater to obtain regulatory approval for the completed project;
3. Support the Engineer in the development of operation and maintenance manuals for the new facilities;
4. Support Engineer in development of a full-scale verification test (FSVT) protocol;
5. Support Engineer in development of FSVT report;
6. Support Engineer in documentation efforts required by TCEQ for the first full-scale direct potable reuse project in the United States.
7. Complete all construction-phase services and Work, including performance testing; and commissioning.

#### **Warranty and Closeout**

1. Supervise and manage the warranties provided to EPWater for the equipment and construction work;
2. Gather warranty work items from the subcontractors and vendors, and provide these to EPWater upon final completion of the Project;
3. Conduct a walk-through with EPWater and Engineer to ensure that EPWater, Engineer, and CMAR are in agreement that the construction phase work is complete before the one-year warranty goes into effect;
4. Implement close-out procedures necessary for EPWater to accept the Project as being finally complete; provide lien waivers from all subcontractors and material suppliers.

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**ATTACHMENT C – IMPROVEMENT PACKAGES 1 AND 2: DESIGN DRAWINGS**



# IMPROVEMENT PACKAGE 1



## HASKELL STREET WWTP SECONDARY CLARIFIERS SPLITTER BOX 36-INCH SLUICE GATES REPLACEMENT

BID 35-20

MAY, 2020

### PUBLIC SERVICE BOARD MEMBERS

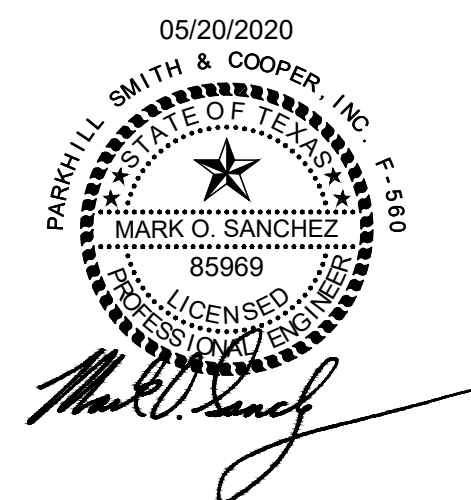
CHRISTOPHER A. ANTCLIFF	CHAIR
KRISTINA D. MENA	VICE CHAIR
IVONNE SANTIAGO P.E.	SECRETARY-TREASURER
HENRY GALLARDO	MEMBER
TERRI GARCIA	MEMBER
BRYAN MORRIS, P.E.	MEMBER
MAYOR DEE MARGO	EX-OFFICIO MEMBER

JOHN E. BALLIEW, P.E.	PRESIDENT/CEO
MARCELA NAVARRETE, C.P.A.	VICE PRESIDENT
R. ALAN SHUBERT, P.E.	VICE PRESIDENT
GILBERT TREJO, P.E.	CHIEF TECHNICAL OFFICER
FELIPE LOPEZ, P.E.	CHIEF OPERATIONS OFFICER - DISTRIBUTION & COLLECTION
MARTIN NORIEGA, P.E.	CHIEF OPERATIONS OFFICER - SUPPORT SERVICES
PAUL RIVAS	CHIEF OPERATIONS OFFICER - PRODUCTION & TREATMENT



**NOT FOR CONSTRUCTION**  
Documents are to be updated as per discussion with El Paso Water on 5/11/22.

VICINITY MAP



**PARKHILL SMITH & COOPER**



501 West San Antonio  
El Paso, Texas 79901  
915.533.6811  
TBPE Registration F-560



CIP# S090011  
ENG/PROJECT I.D. 19-9000

# LEGEND

# GENERAL NOTES

## EXISTING

	VEGETATION		CONTOURS (1 FOOT INTERVALS)
	PAVEMENT		GATE VALVE
	STRUCTURES		BUTTERFLY VALVE
	SANITARY SEWER MANHOLE		EASEMENT
	EXISTING		ROW LINE
	POWER POLE		FENCE
	POLE MOUNTED LIGHT		UNDERGROUND TELEPHONE
	CITY MONUMENT		UNDERGROUND CABLE
	SANITARY SEWER MANHOLE		UNDER GROUND ELECTRIC
	ELECTRICAL MANHOLE		OVERHEAD ELECTRIC
	ELECTRICAL TRANSFORMER		FIBER OPTIC
	WATER VALVE VAULT		STORM SEWER
	PUMP		SANITARY SEWER
	FLOW METER		GAS PIPELINE
	FIRE HYDRANT		WATER PIPELINE
	WATER METER		RECLAIMED WATER PIPELINE

## PROPOSED

	CROSS		CATHODIC PROTECTION TEST STATION
	TEE		BLOWOFF VALVE W/ MANHOLE
	REDUCER		COMB AIR VALVE W/ MANHOLE (OR METER BOX, AS INDICATED)
	90° BEND		BUTTERFLY VALVE W/ MANHOLE
	45° BEND		MANHOLE
	PIPE PLUG		GATE VALVE W/ VALVE BOX
	PORTABLE PUMP		SEWER LINE
	STEEL CASING		PRESSURE GAUGE
	PERMANENT EASEMENT		LIMITS OF EXCAVATION AND/OR PAVEMENT REPLACEMENT
	CONSTRUCTION EASEMENT		CEMENT STABILIZED BACKFILL MATERIAL
	EPWU MARKER POST		

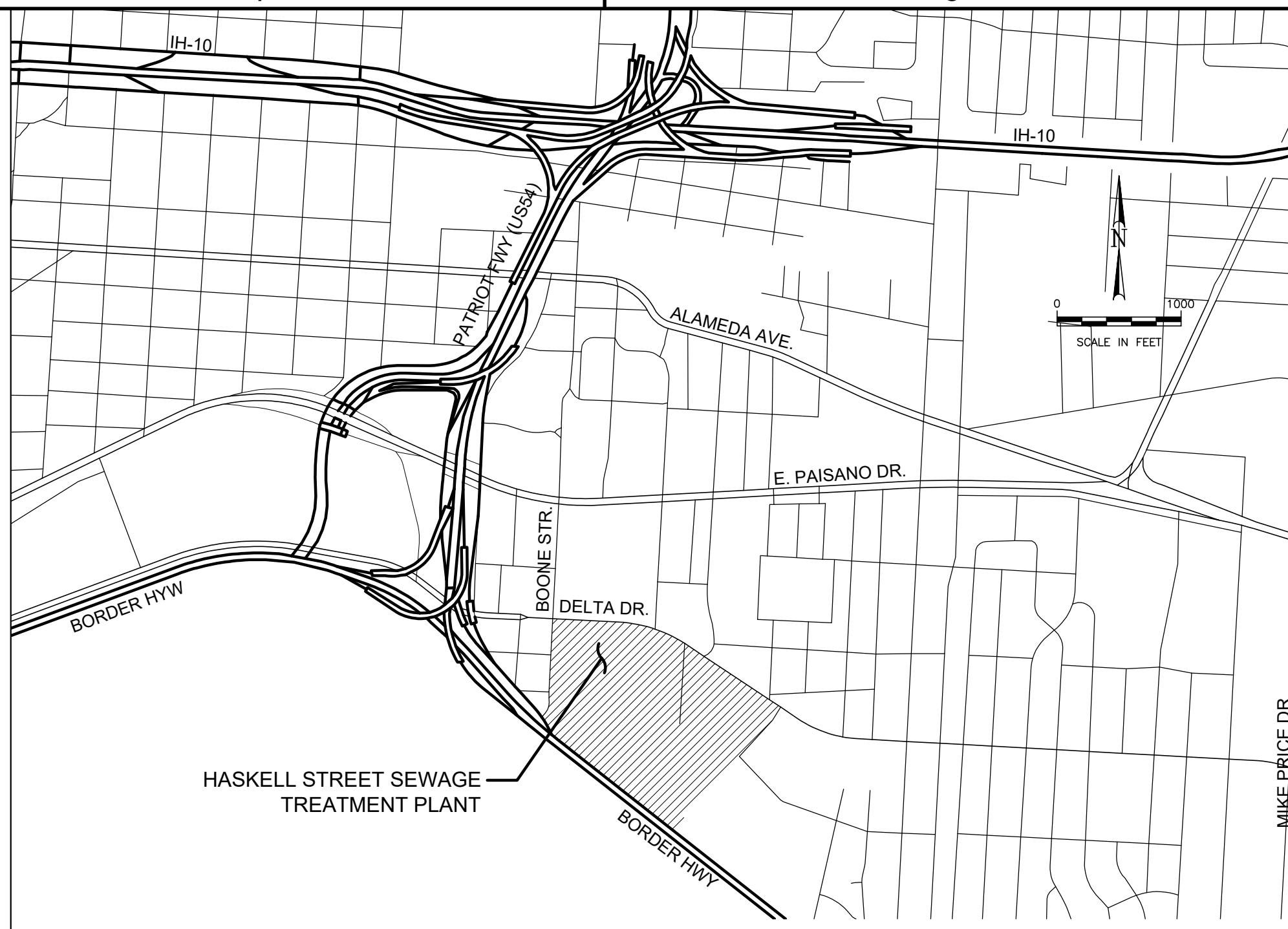
- ALL EXISTING UTILITIES CURRENTLY IN SERVICE MUST REMAIN IN SERVICE THROUGHOUT CONSTRUCTION OF THE PROJECT AS NOTED IN THE DRAWINGS. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL EXISTING UTILITIES FROM DAMAGE AS A RESULT OF CONSTRUCTION ACTIVITIES.
- ALTHOUGH ALL EFFORTS HAVE BEEN MADE TO INDICATE ALL MAJOR EXISTING UTILITIES ON PLANS, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE AND PROTECT ALL SAID UTILITIES AS WELL AS SERVICE CONNECTIONS (WHETHER OR NOT INDICATED ON PLANS) PRIOR TO AND DURING CONSTRUCTION. SERVICE CONNECTIONS ARE NOT SHOWN ON THE PLANS.
- PRIOR TO BEGINNING CONSTRUCTION, CONTRACTOR SHALL COORDINATE WITH EPWU TO VERIFY LOCATION OF EXISTING UTILITIES.
- CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH EPWU FOR ELECTRIC, NATURAL GAS, COMMUNICATION, SEWER AND WATER UTILITIES. FOR ANY RELOCATION AND/OR PROTECTION OF EXISTING LINES OR CABLES AS REQUIRED, DUE TO CONSTRUCTION ACTIVITIES.
- UNLESS OTHERWISE INDICATED, ALL EXISTING ROADWAYS, SIDEWALKS, & SURFACE GRADING AFFECTED BY CONSTRUCTION ACTIVITIES SHALL BE RESTORED TO ORIGINAL CONDITION AND ELEVATION BY CONTRACTOR.
- CONTRACTOR SHALL KEEP ALL EQUIPMENT, MATERIAL, DEBRIS & SPOIL OUT OF THE WAY OF PLANT OPERATIONS.
- THE INFORMATION PROVIDED IS FOR THE CONTRACTOR TO PLAN HIS CONSTRUCTION ACTIVITIES, SO AS NOT TO INTERFERE WITH PLANT OPERATIONS.
- IN SOME CASES ACCESS MAY BE LIMITED TO THE AVAILABLE SPACE AS DETERMINED BY THE ENGINEER AND THE EPWU PLANT SUPERINTENDENT.
- THE CONTRACT WORK WILL BE IN AND AROUND TREATMENT PROCESSES THAT PRODUCE HAZARDOUS AND FLAMMABLE/EXPLOSIVE GASES, AND OR MAY CAUSE LOW OXYGEN LEVELS. CONTRACTOR SHALL MONITOR WORK AREAS AND PERFORM WORK IN SUCH A MANNER AS TO PREVENT HAZARDOUS AND EXPLOSIVE CONDITIONS, AND SHALL IMPLEMENT MEANS NECESSARY TO MAINTAIN SAFE WORK CONDITIONS. THE COST FOR THIS SHALL BE INCLUDED IN THE APPROPRIATE BID ITEM.
- THE CONTRACT WORK WILL BE IN AND AROUND EQUIPMENT AND STRUCTURES THAT MAY BE CONSIDERED CONFINED SPACES AND OR MAY REQUIRE FALL PROTECTION AS DEFINED BY THE FEDERAL OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA). CONTRACTOR SHALL COMPLY WITH OSHA REQUIREMENTS AND INCLUDE ALL COST IN THE APPROPRIATE BID ITEM.
- CONTRACTOR IS SOLEY RESPONSIBLE FOR WORK SITE SAFETY AND FOR COMPLYING WITH ALL APPLICABLE SAFETY REQUIREMENTS.
- THIS PROJECT IS A RETROFIT OF EXISTING PLANT STRUCTURES AND PIPING WITH NEW EQUIPMENT, NEW PIPING, AND ASSOCIATED ELECTRIC POWER AND CONTROLS. ANY WORK INSTALLED WITHOUT ENGINEER APPROVAL WILL BE SUBJECT TO REJECTION AND NON-PAYMENT. CONTRACTOR SHALL PREPARE AND SUBMIT THE FOLLOWING TO ENGINEER FOR REVIEW AND APPROVAL IN ACCORDANCE WITH THESE NOTES AND THE SPECIFICATIONS, PRIOR TO BEGINNING CONSTRUCTION AND/OR INSTALLATION OF ANY NEW MATERIALS, EQUIPMENT, PIPING, OR INSTRUMENTATION.
  - PROPOSED MATERIAL, EQUIPMENT, AND INSTRUMENTATION WITH MANUFACTURER INFORMATION, TECHNICAL DATA, INSTALLATION INSTRUCTIONS, AND WARRANTY INFORMATION.
  - PIPE SHOP DRAWINGS WITH CONTRACTOR FIELD VERIFIED DIMENSIONS SHOWING ACTUAL FIELD CONFIGURATION AND INSTALLATION LAYOUT FOR ALL NEW PIPING, INCLUDING BUT NOT LIMITED TO THE APPROVED FITTINGS, SUPPORTS, ISOLATION VALVES, CONTROL VALVES, FLOW METERS, PRESSURE GAUGES, TIE-IN POINTS BETWEEN NEW AND EXISTING, AND ASSOCIATED ELECTRICAL AND CONTROLS WIRING, CONDUIT, INSTRUMENTATION PANELS, ETC. SHOP DRAWINGS SHALL BE TO SCALE AND SHALL CLEARLY SHOW PLAN VIEW, ELEVATION, AND SECTIONS OF THE PIPING ARRANGEMENT.
  - MANUFACTURER SHOP DRAWINGS WITH CONTRACTOR FIELD VERIFIED DIMENSIONS SHOWING ACTUAL FIELD CONFIGURATION AND INSTALLATION LAYOUT FOR EQUIPMENT, RELATED APPURTENANCES, SUPPORTS, REQUIREMENTS FOR CONNECTING TO EXISTING, AND ANY ASSOCIATED ELECTRICAL AND CONTROLS WIRING, CONDUIT, PANELS, ETC. SHOP DRAWINGS SHALL BE TO SCALE AND CLEARLY SHOW PLAN VIEW, ELEVATION AND SECTIONS OF THE EQUIPMENT ARRANGEMENT.
  - FOR ANY TEMPORARY BYPASSING REQUIRED FOR INSTALLATION OF WORK, CONTRACTOR SHALL SUBMIT A BYPASS PLAN DETAILING HOW BYPASS WILL BE DONE, & HOW LONG BYPASSING WILL BE REQUIRED.

## LIST OF UTILITIES AND AGENCIES

**EPWU PROJECT MANAGER:**  
EL PASO WATER UTILITIES  
1154 HAWKINS  
EL PASO, TX 79925  
MR. ROBERT ORTEGA, P.E.  
(915) 594-5675

**ENGINEER:**  
PARKHILL, SMITH & COOPER, INC.  
501 W. SAN ANTONIO  
EL PASO, TX 79901  
(915) 533-6811  
MR. MARK O. SANCHEZ, P.E.

**EPWU PLANT SUPERINTENDENT:**  
4100 DELTA DRIVE  
EL PASO, TX 79905  
MR. SERGIO CASTRO  
(915) 594-5476



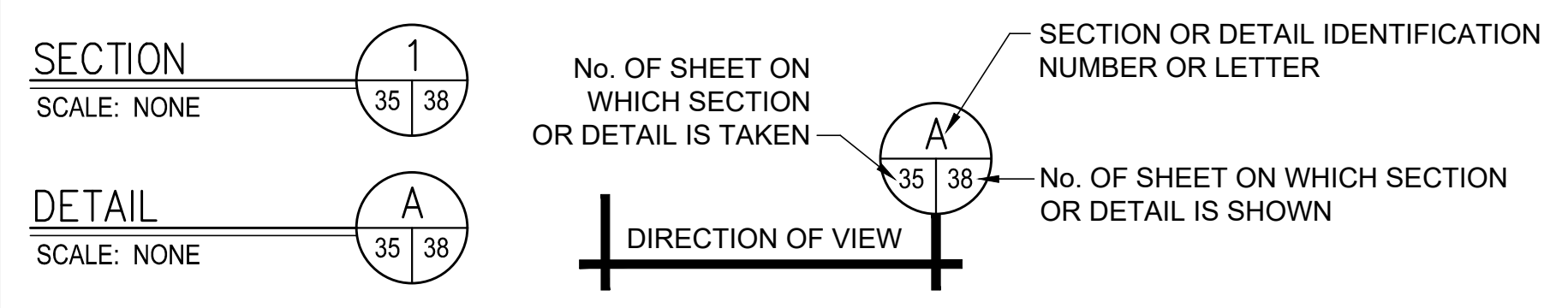
## ABBREVIATIONS

ALUM	ALUMINUM	OAL	OVER ALL LENGTH
BF	BLIND FLANGE	O.C.	ON CENTERS
BOP	BOTTOM OF PIPE	O.C.	ON CENTERS
CONC	CONCRETE	O.C.E.W.	ON CENTERS EACH WAY
CDF	CHEMICAL DRAIN	OSHA	OCCUPATIONAL SAFETY AND
CLS	CHLORINE SOLUTION		HEALTH ADMINISTRATION
DFT	DRY FILM THICKNESS	PE	PRIMARY EFFLUENT
DR	DRAIN	PI	PRIMARY INFLUENT
DIA	DIAMETER	PP	POWER POLE
DIP	DUCTILE IRON PIPE	PROP	PROPOSED
EPWU	EL PASO WATER UTILITIES	PS	PRIMARY SLUDGE
EXIST	EXISTING	PSC	PRIMARY SCUM
FLG	FLANGE	PSL	PRIMARY SLUDGE LINE
FB	FLAT STEEL BAR	PW	PLANT WATER
FBE	FUSION BOND EPOXY	PYS	POLYMER SOLUTION
F.G.	FINISHED GRADE	R, RAD	RADIUS
FRP	FIBER REINFORCED POLYMER	RCP	REINFORCED CONCRETE PIPE
HGD	HOT DIPPED GALVANIZED	ROW	RIGHT OF WAY
HG	HOT DIPPED GALVANIZED	S.S.	STAINLESS STEEL
ICRI	INTERNATIONAL CONCRETE REPAIR INSTITUTE	T.L.	TRUE LENGTH
LF	LINEAR FEET	T.O.G.	TOP OF GRATING
MH	MANHOLE	T.O.C.	TOP OF CONCRETE
MLSS	MIXED LIQUOR SUSPENDED SOLIDS	1W	CITY WATER
MP	MARKER POST	2W	NON POTABLE (CITY WATER)
NG	NATURAL GAS	3W	NO. 3 WATER (SECONDARY EFFLUENT)

## SHEET INDEX

SHEET NO.	DRAWING NO.	DESCRIPTION
1	G1	COVER AND VICINITY MAP
2	G2	LOCATION MAP, LEGEND, GENERAL NOTES, SHEET INDEX AND ABBREVIATIONS
3	C1	PLANT SITE
4	C2	SEQUENCE OF CONSTRUCTION
5	C3	BYPASS PUMPING PLAN SCHEMATIC
6	C4	BYPASS PUMPING PLAN SECTIONS
7	C5	CLARIFIER DISTRIBUTION STRUCTURE PLAN VIEW AND SECTIONS
8	C6	DISTRIBUTION STRUCTURE SECTIONS J-BOX C PLAN VIEW AND SECTIONS
9	C7	EXISTING ARMO HEAVY DUTY SLUICE GATE
10	E1	ELECTRICAL TEMPORARY POWER CABLING ROUTES
11	E2	ELECTRICAL EXISTING OVERALL ONE-LINE DIAGRAM
12	COVER	SECONDARY CLARIFIER SHOP DRAWINGS FOR CONTRACTOR REFERENCE (6 SHEETS)

## SECTION & DETAIL CROSS REFERENCING



## WARNING

**CONFINED SPACE - CONTRACTOR SHALL ABIDE BY REGULATIONS IN OSHA STANDARDS: 29 CFR-1910.146 APPENDIX A, B, C, D, E & F.**

**FALL PROTECTION - CONTRACTOR SHALL ABIDE BY ALL RULES & REGULATIONS IN OSHA STANDARDS: 29 CFR - 1926.500 THROUGH 1926.505**



PARKHILL SMITH & COOPER



**HASKELL STREET WWTP  
SECONDARY CLARIFIERS  
SPLITTER BOX 36-INCH  
SLUICE GATE REPLACEMENT**

EL PASO WATER

4100 DELTA DR.  
EL PASO, TEXAS 79905

### VERIFY SCALES

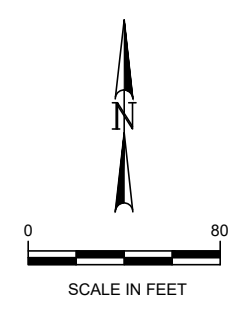
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NO.	DATE	DESCRIPTION
ISSUING OFFICE:	EL PASO	PROJECT NO: 6922.19

**LOCATION MAP, LEGEND,  
GENERAL NOTES,  
SHEET INDEX AND  
ABBREVIATIONS**

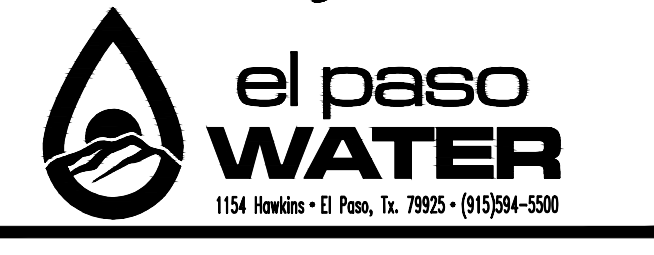
**G2**

FILE NAME: X:\2019\6922.19\03\_DSGN01\_DWG050\_CIVIL\001-6922.dwg LAYOUT NAME: C1 PRINTED: Thursday, May 21, 2020 - 9:45am USER: csanchez



**PSC**

**PARKHILL SMITH & COOPER**



**HASKELL STREET WWT  
SECONDARY CLARIFIERS  
SPLITTER BOX 36-INCH  
SLUICE GATE REPLACEMENT**

**EL PASO WATER**

4100 DELTA DR.  
EL PASO, TEXAS 79905

**VERIFY SCALES**

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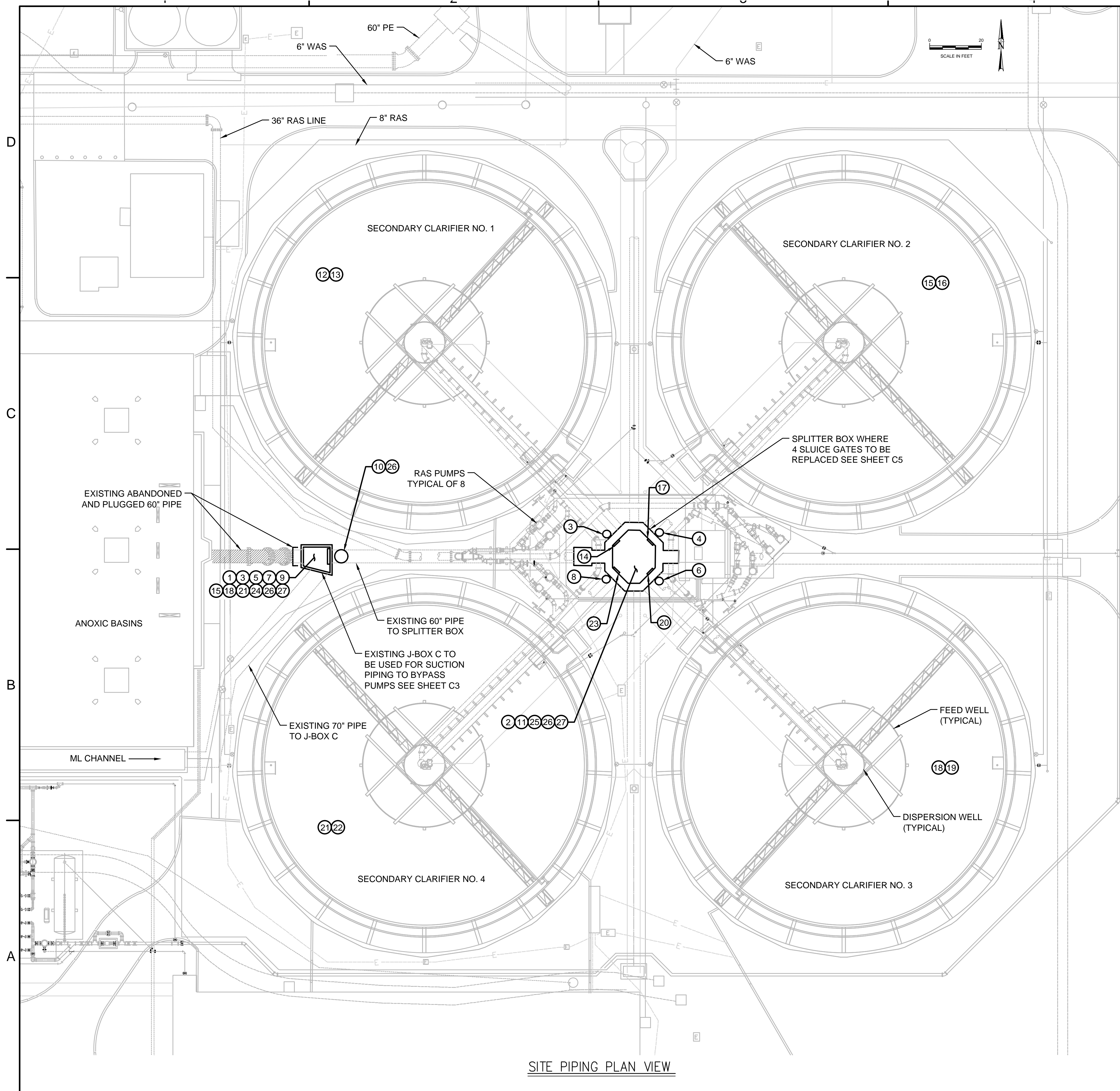
NO.	DATE	DESCRIPTION

ISSUING OFFICE: EL PASO PROJECT NO: 6922.19

**PLANT SITE**

**C1**

FILE NAME: X:\2019\6922\19\03\_DSGN01\_DWG\050\_CIVIL\002-6922.dwg LAYOUT NAME: C2 PRINTED: Wednesday, June 24, 2020 - 2:41pm USER: csanchez



SITE PIPING PLAN VIEW

SEQUENCE OF CONSTRUCTION KEYED NOTES: \* #

1. REMOVE ALUMINUM GRATING FROM TOP OF JUNCTION BOX C, FURNISH AND INSTALL TEMPORARY BYPASS PUMPING SYSTEM. SEE SHEET C3 FOR BYPASS PLAN.
2. INSTALL FOUR (4) INFLATABLE PLUGS IN THE SPLITTER BOX INSIDE EACH OF THE 36-INCH PIPES THAT UNDER NORMAL OPERATION DIRECT WASTEWATER TO THE FOUR CLARIFIERS. THESE PLUGS ARE NECESSARY TO KEEP BACK FLOW FROM THE SECONDARY CLARIFIERS FROM ENTERING THE SPLITTER BOX DURING BYPASS OPERATIONS. SEE SHEET C5.
3. AFTER PLUG IS INSTALLED IN 36-INCH PIPE TO CLARIFIER NO. 1, START BYPASSING TO CLARIFIER NO. 1.
4. INSTALL PLUG IN 36-INCH PIPE TO CLARIFIER NO. 2.
5. AFTER PLUG IS INSTALLED IN 36-INCH PIPE TO CLARIFIER NO. 2, START BYPASSING TO CLARIFIER NO. 2.
6. INSTALL PLUG IN 36-INCH PIPE TO CLARIFIER NO. 3.
7. AFTER PLUG IS INSTALLED IN 36-INCH PIPE TO CLARIFIER NO. 3, START BYPASSING TO CLARIFIER NO. 3.
8. INSTALL PLUG IN 36-INCH PIPE TO CLARIFIER NO. 4.
9. AFTER PLUG IS INSTALLED IN 36-INCH PIPE TO CLARIFIER NO. 4, START BYPASSING TO CLARIFIER NO. 4.
10. INSTALL STEEL PLATE AND/OR INFLATABLE PLUG IN JUNCTION BOX C INSIDE THE 60-INCH PIPE THAT UNDER NORMAL OPERATION DIRECTS WASTEWATER TO THE SPLITTER BOX. SEE SHEET C6.
11. AFTER PLUGS ARE SECURE AND FLOW HAS BEEN STOPPED FROM ENTERING SPLITTER BOX, CONTRACTOR SHALL PUMP WASTEWATER OUT OF SPLITTER BOX SO THAT EXISTING SLUICE GATES CAN BE REMOVED AND REPLACED. WASTEWATER PUMPED OUT THE SPLITTER BOX SHALL BE DISCHARGED INTO THE DISPERSION WELL OF ONE OF THE CLARIFIERS. SHOP DRAWING OF THE EXISTING SLUICE GATE FRAME CAST IN THE WALL IS INCLUDED ON SHEET C7.
12. STOP BYPASS PUMPING TO CLARIFIER NO. 1.
13. FOR CLARIFIER NOT BEING DISCHARGED TO BY BYPASS PUMPING, PUMP DOWN THE CLARIFIER TO LEVEL AT WHICH THERE WILL BE NO BACKFLOW INTO THE SPLITTER BOX FROM THIS CLARIFIER. SEE CLARIFIER SHOP DRAWINGS FOR INFORMATION ON LEVEL TO PUMP DOWN TO. WASTEWATER PUMPED FROM OUT OF THIS CLARIFIER SHALL BE PUMPED TO DISPERSION WELL OF ADJACENT CLARIFIER. THE PURPOSE OF THIS STEP IS TO REMOVE BACK-PRESSURE ON THE PLUG INSTALLED INSIDE THE 36-INCH PIPE INSIDE THE SPLITTER BOX.
14. REMOVE AND REPLACE SLUICE GATE FOR CLARIFIER NO. 1. SEE SHEET C5.
15. RESUME BYPASS PUMPING TO CLARIFIER NO. 1, AND STOP PUMPING TO CLARIFIER NO. 2. CONTINUE PUMPING TO CLARIFIERS 3 AND 4.
16. REPEAT STEP 13 FOR CLARIFIER NO. 2.
17. REMOVE AND REPLACE SLUICE GATE FOR CLARIFIER NO. 2. SEE SHEET C5.
18. RESUME BYPASS PUMPING TO CLARIFIER NO. 2, AND STOP PUMPING TO CLARIFIER NO. 3. CONTINUE PUMPING TO CLARIFIERS 4 AND 1.
19. REPEAT STEP 13 FOR CLARIFIER NO. 3.
20. REMOVE AND REPLACE SLUICE GATE FOR CLARIFIER NO. 3. SEE SHEET C5.
21. RESUME BYPASS PUMPING TO CLARIFIER NO. 3, AND STOP PUMPING TO CLARIFIER NO. 4. CONTINUE PUMPING TO CLARIFIERS 2 AND 1.
22. REPEAT STEP 13 FOR CLARIFIER NO. 4.
23. REMOVE AND REPLACE SLUICE GATE FOR CLARIFIER NO. 4. SEE SHEET C5.
24. RESUME BYPASS PUMPING TO CLARIFIER NO. 4. CONTINUE PUMPING TO CLARIFIERS 1, 2, AND 3.
25. AFTER NEW SLUICE GATES ARE INSTALLED, REMOVE 36-INCH PLUGS, AND CLOSE NEW SLUICE GATES
  - a. PUMP OUT SPLITTER BOX BY PUMPING TO THE DISPERSION WELL OF ONE OF THE CLARIFIERS
  - b. TEST NEW SLUICE GATES FOR LEAKAGE BY UTILIZING BACK-PRESSURE FROM EACH CLARIFIER
27. AFTER SLUICE GATES HAVE BEEN SUCCESSFULLY LEAK TESTED, OPEN SLUICE GATES, REMOVE 60-INCH PLUG, AND STOP BYPASS PUMPING.
28. RETURN WORK AREAS BACK TO ORIGINAL CONDITION.

\* THE NUMBERING OF CLARIFIERS USED IN THE SEQUENCE OF CONSTRUCTION IS FOR ILLUSTRATION PURPOSES. THE ORDER OF CLARIFIERS IN THE SEQUENCE MAY BE CHANGED BY THE CONTRACTOR. PLUGGING AND PUMPING DESCRIPTIONS ARE INTENDED TO GENERALLY DESCRIBE MINIMUM REQUIREMENTS FOR THE WORK. IT IS CONTRACTOR'S RESPONSIBILITY FOR DETERMINING THE MEANS AND METHODS FOR SUCCESSFUL COMPLETION OF THIS WORK AND INCLUDE THIS IN THE BID PRICE FOR THE PROJECT.

- LEGEND
- TEMPORARY INFLATABLE PLUG
  - ▮ STEEL PLATE TO STOP FLOW AT CONTRACTORS OPTION

PSC

PARKHILL SMITH & COOPER

05/20/2020

MARK O. SANCHEZ  
85969  
LICENSED PROFESSIONAL ENGINEER  
STATE OF TEXAS

**el paso WATER**  
1154 Hawkins • El Paso, Tx. 79925 • (915)944-5500

HASKELL STREET WWTP  
SECONDARY CLARIFIERS  
SPLITTER BOX 36-INCH  
SLUICE GATE REPLACEMENT

EL PASO WATER

4100 DELTA DR.  
EL PASO, TEXAS 79905

VERIFY SCALES

BAR IS 1/2 INCH ON ORIGINAL DRAWING

0 1/2"

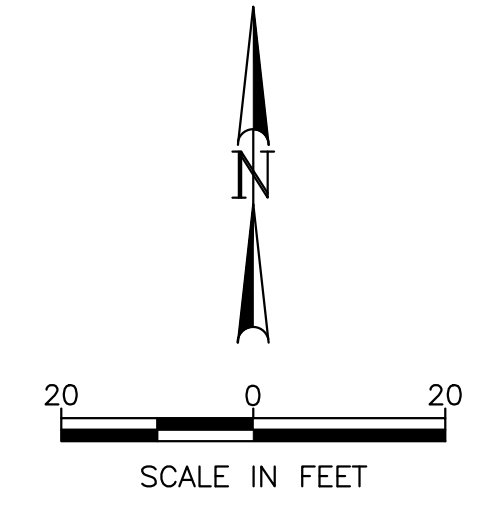
IF NOT 1/2 INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

NO.	DATE	DESCRIPTION

ISSUING OFFICE: EL PASO PROJECT NO: 6922.19

SEQUENCE OF CONSTRUCTION

FILE NAME: X:\2019\6922.19\03\_DSGN\01\_DWG\050\_CIVIL\003-6922.dwg LAYOUT NAME: C3 PRINTED: Thursday, May 21, 2020 - 9:46am USER: csanchez



**BYPASS PUMPING NOTES:**

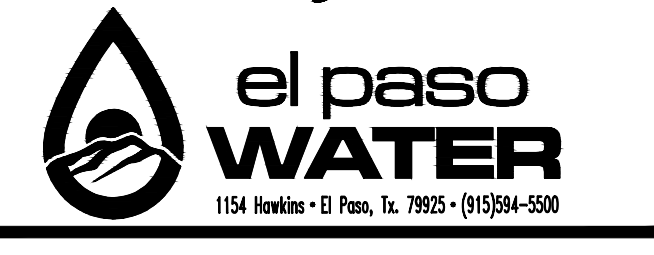
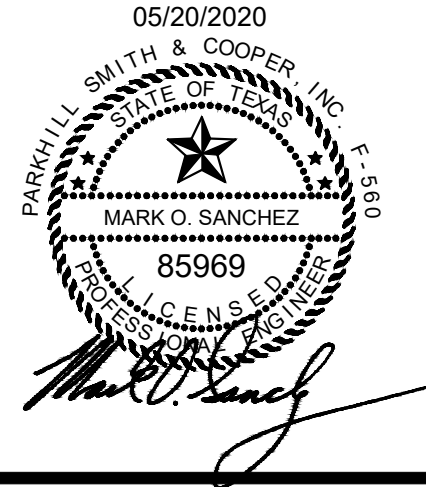
1. BYPASS PUMPING WILL BE REQUIRED FOR REPLACEMENT OF SLUICE GATES INSIDE THE SPLITTER BOX AND SHALL BE COORDINATED WITH THE SEQUENCE OF CONSTRUCTION SHOWN ON SHEET C2.
2. CONTRACTOR SHALL PROVIDE A BYPASS PUMPING SYSTEM CAPABLE OF MEETING THE FOLLOWING REQUIREMENTS:
  - a. MINIMUM 40 MGD PEAK FLOW.
  - b. MINIMUM 20% REDUNDANT PUMP CAPACITY - THAT IS BACK-UP PUMP(S) CAPABLE OF PUMPING MINIMUM OF 8 MGD. THESE PUMP(S) ARE IN ADDITION TO THE PUMPS THAT ARE PUMPING 40 MGD.
  - c. BYPASS PUMPING SYSTEM SHALL EQUALLY DISTRIBUTE AND CONTROL FLOW TO ALL FOUR OF THE SECONDARY CLARIFIERS. A MINIMUM OF THREE CLARIFIERS SHALL BE OPERATED AT ALL TIMES. THAT IS THE BYPASS PUMPING SYSTEM SHALL DISCHARGE TO AT LEAST THREE CLARIFIERS CONTINUOUSLY FOR THE DURATION OF THE PROJECT AT THE PEAK FLOW OF 40 MGD
  - d. DISCHARGE FROM BYPASS PUMPING SHALL BE DIRECTED TO CENTER WELL OF SECONDARY CLARIFIER(S).
  - e. WEIGHT OF DISCHARGE PIPING TO EACH CLARIFIER SHALL NOT EXCEED 50 PSF OF LOADING ON THE CLARIFIER WALKWAY.
  - f. THE BYPASS PUMPS AT CONTRACTORS OPTION MAY BE POWERED BY EITHER ELECTRIC AS SHOWN ON THE PLANS OR BY DIRECT DRIVE DIESEL ENGINES. FOR ELECTRIC POWERED OPTION CONTRACTOR SHALL PROVIDE STANDBY DIESEL GENERATOR CAPABLE OF RUNNING ALL PUMPS REQUIRED TO MEET PEAK FLOW. SEE SPECIFICATION 02659 FOR ADDITIONAL INFORMATION.
  - g. THE BYPASS PLAN SHALL BE MANNED 24 HOURS PER DAY, 7 DAYS PER WEEK AS REQUIRED FOR REPLACEMENT OF SLUICE GATES.
3. THE CONTRACTOR OR QUALIFIED SUBCONTRACTOR INSTALLING AND OPERATING BYPASS SYSTEM MUST MEET MINIMUM QUALIFICATIONS AND EXPERIENCE REQUIREMENTS OUTLINED IN SPECIFICATIONS.
4. A BYPASS PLAN SHALL BE SUBMITTED TO PLANT SUPERINTENDENT AND ENGINEER FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.
5. ALL BYPASS OPERATIONS SHALL BE CLOSELY COORDINATED WITH AND APPROVED BY PLANT SUPERINTENDENT.

**LEGEND**

**BYPASS PUMPS** TEMPORARY BYPASS PUMP(S) MINIMUM 40 MGD PLUS 8 MGD REDUNDANCY PUMP(S).

**→** BYPASS PIPING ROUTED ALONG CLARIFIER WALKWAYS AND DISCHARGED TO CLARIFIER CENTER WELL. CANNOT EXCEED 50 PSF LOAD ON WALKWAYS.

**- - -** TEMPORARY ELECTRIC POWER ROUTED FROM EXISTING TX-951 TO BYPASS PUMPS. SEE ELECTRICAL SHEETS.



**HASKELL STREET WWT  
SECONDARY CLARIFIERS  
SPLITTER BOX 36-INCH  
SLUICE GATE REPLACEMENT**

EL PASO WATER  
4100 DELTA DR.  
EL PASO, TEXAS 79905

**VERIFY SCALES**  
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0 1/2"  
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NO.	DATE	DESCRIPTION

ISSUING OFFICE: EL PASO PROJECT NO: 6922.19

**BYPASS PUMPING  
PLAN  
SCHEMATIC**

1

2

3

4

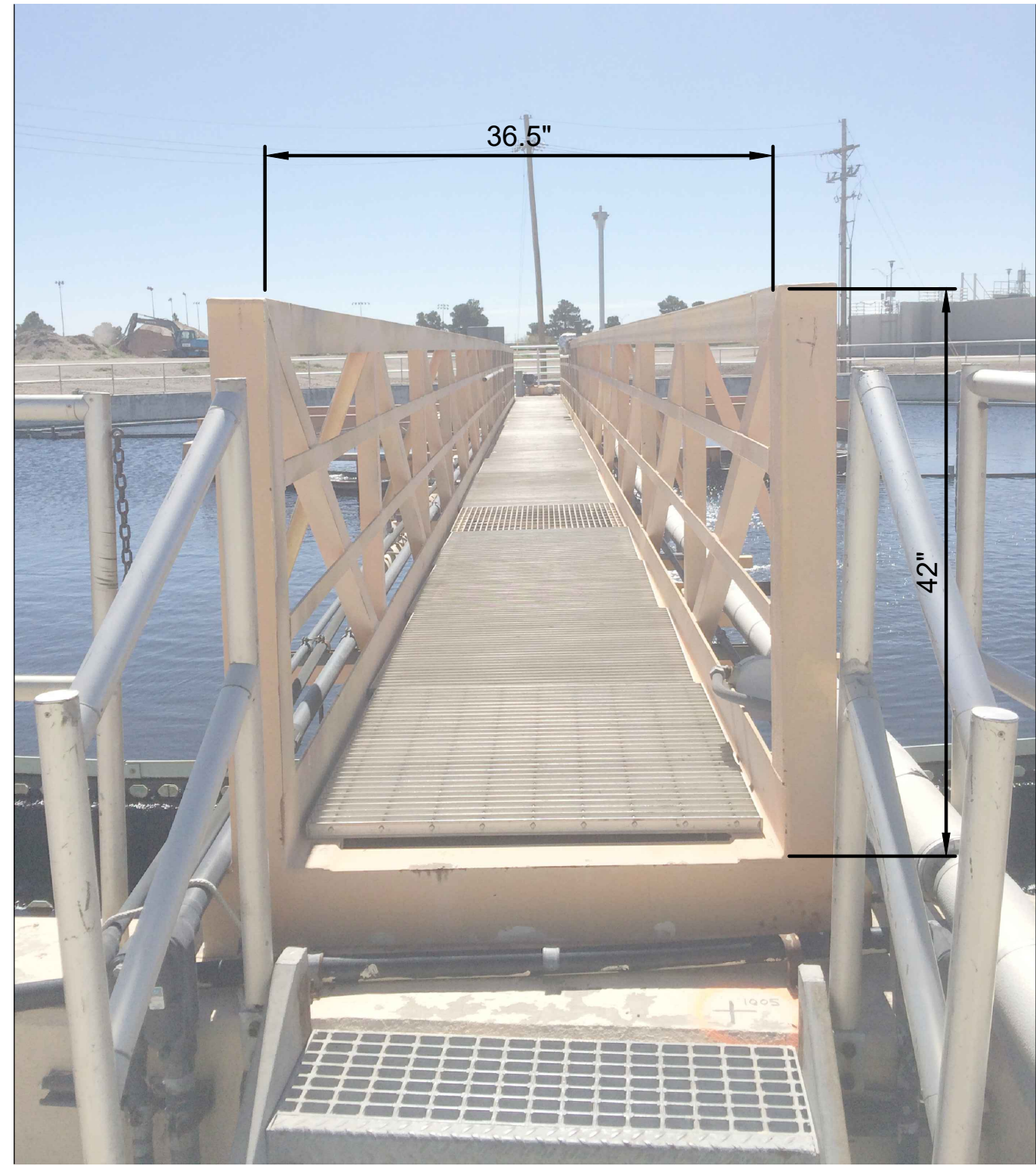
5

D

C

B

A



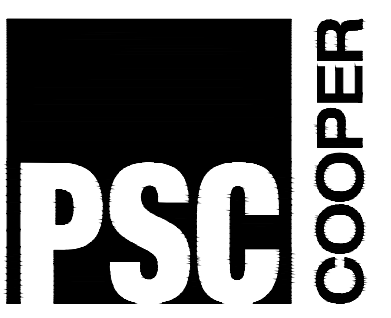
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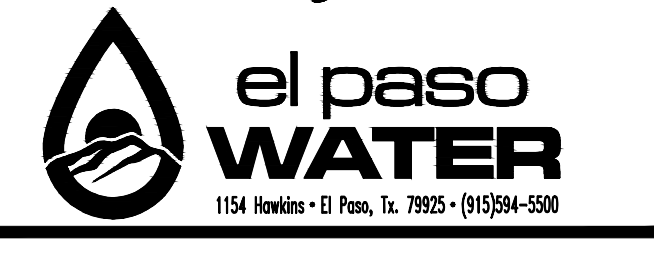
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SECTION 3  
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PARKHILL SMITH & COOPER



**HASKELL STREET WWTP  
SECONDARY CLARIFIERS  
SPLITTER BOX 36-INCH  
SLUICE GATE REPLACEMENT**

EL PASO WATER  
4100 DELTA DR.  
EL PASO, TEXAS 79905

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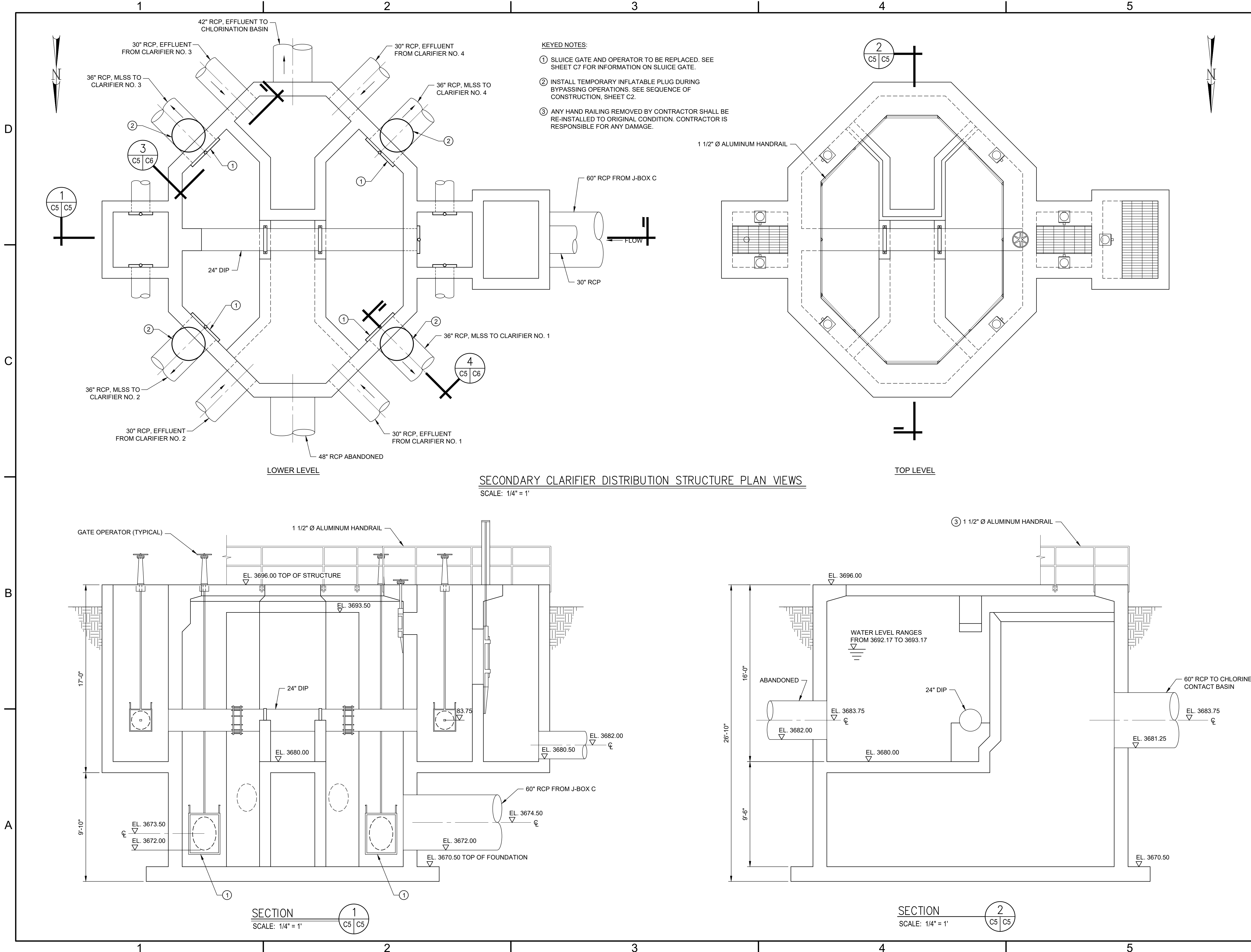
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**BYPASS PUMPING  
PLAN  
SECTIONS**

**C4**

FILE NAME: X:\2019\6922.19\03\_DSGN\01\_DWG\050\_CIVIL\004-6922.dwg LAYOUT NAME: C4 PRINTED: Thursday, May 21, 2020 - 9:47am USER: csanchez

FILE NAME: X:\2019\6922.19\03\_DSGN\01\_DWG\050\_CIVIL\005-6922.dwg LAYOUT NAME: C5 PRINTED: Thursday, May 21, 2020 - 9:47am USER: csanchez



- KEYED NOTES:**
- ① SLUICE GATE AND OPERATOR TO BE REPLACED. SEE SHEET C7 FOR INFORMATION ON SLUICE GATE.
  - ② INSTALL TEMPORARY INFLATABLE PLUG DURING BYPASSING OPERATIONS. SEE SEQUENCE OF CONSTRUCTION, SHEET C2.
  - ③ ANY HAND RAILING REMOVED BY CONTRACTOR SHALL BE RE-INSTALLED TO ORIGINAL CONDITION. CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE.

**PSC & COOPER**

05/20/2020  
 PARKHILL SMITH & COOPER, INC. F. 1910  
 STATE OF TEXAS  
 MARK O. SANCHEZ  
 85969  
 PROFESSIONAL ENGINEER

*Mark Sanchez*

**PARKHILL SMITH & COOPER**

**el PASO WATER**  
 1154 Hawkins • El Paso, Tx. 79925 • (915)994-5500

**HASKELL STREET WWTP  
 SECONDARY CLARIFIERS  
 SPLITTER BOX 36-INCH  
 SLUICE GATE REPLACEMENT**

EL PASO WATER  
 4100 DELTA DR.  
 EL PASO, TEXAS 79905

VERIFY SCALES

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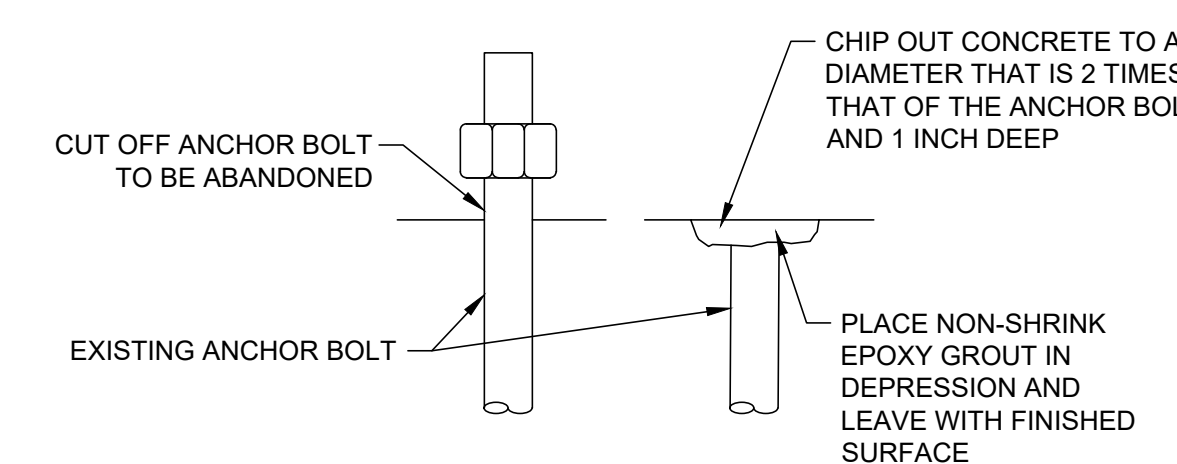
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ISSUING OFFICE: EL PASO      PROJECT NO: 6922.19

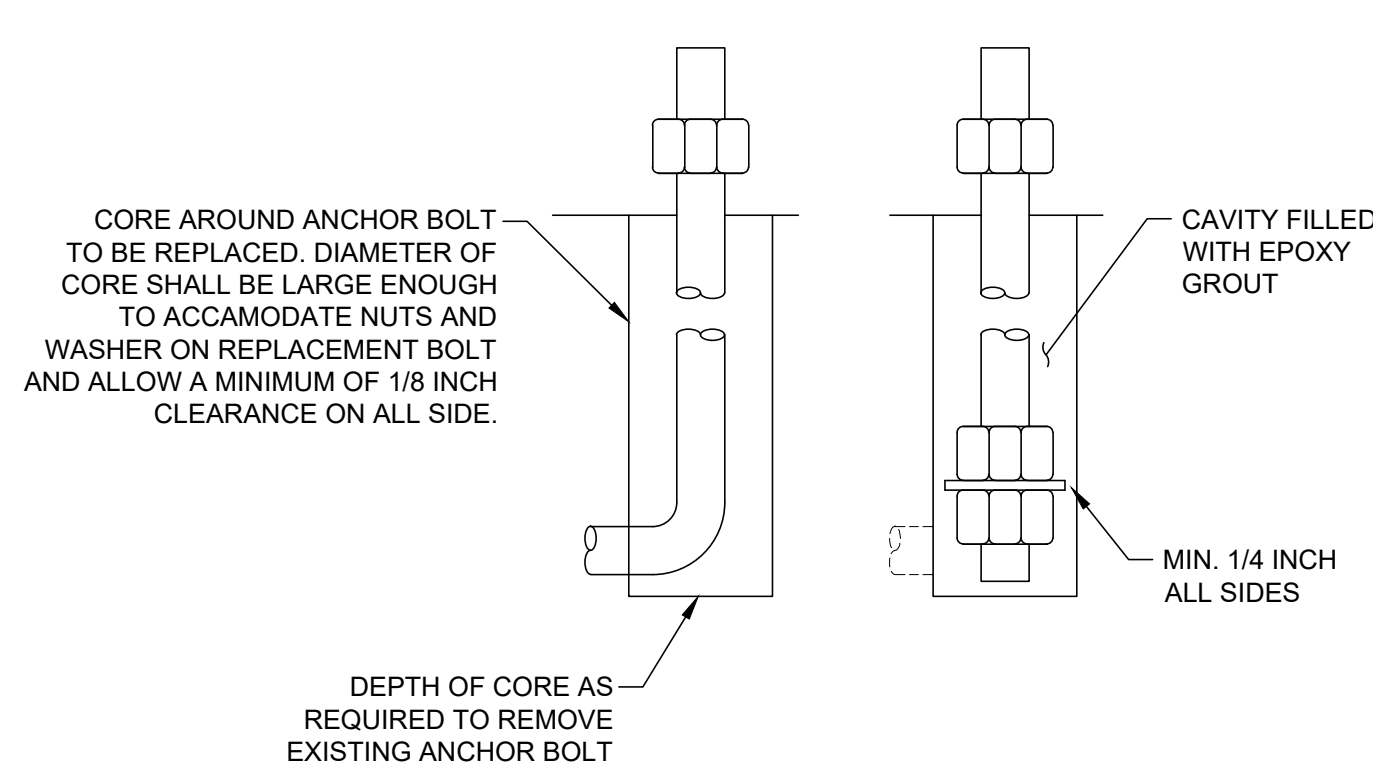
CLARIFIER DISTRIBUTION  
STRUCTURE  
PLAN VIEW AND  
SECTIONS

C5

1 2 3 4 5

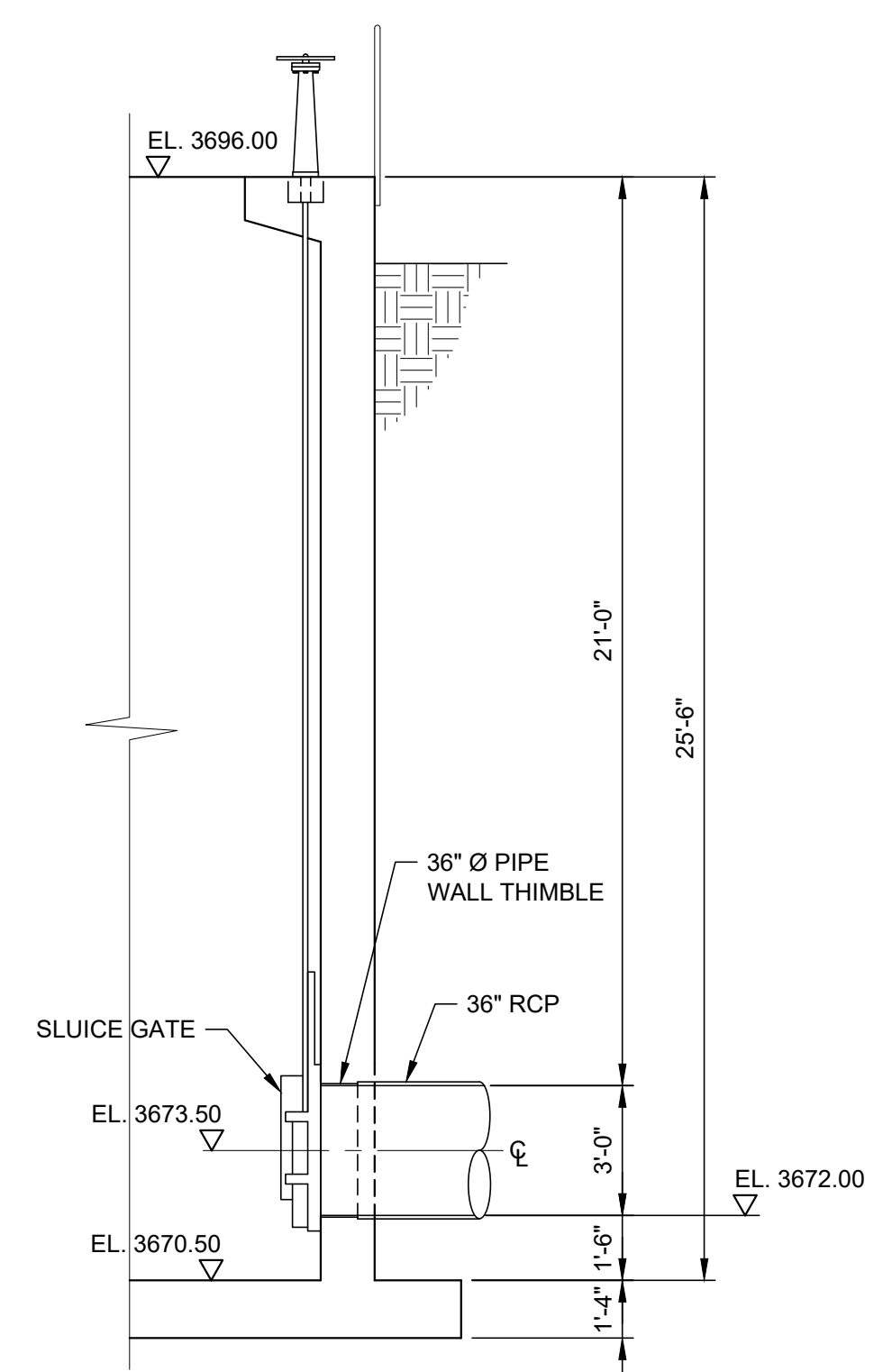


ABANDONED ANCHOR BOLT DETAIL

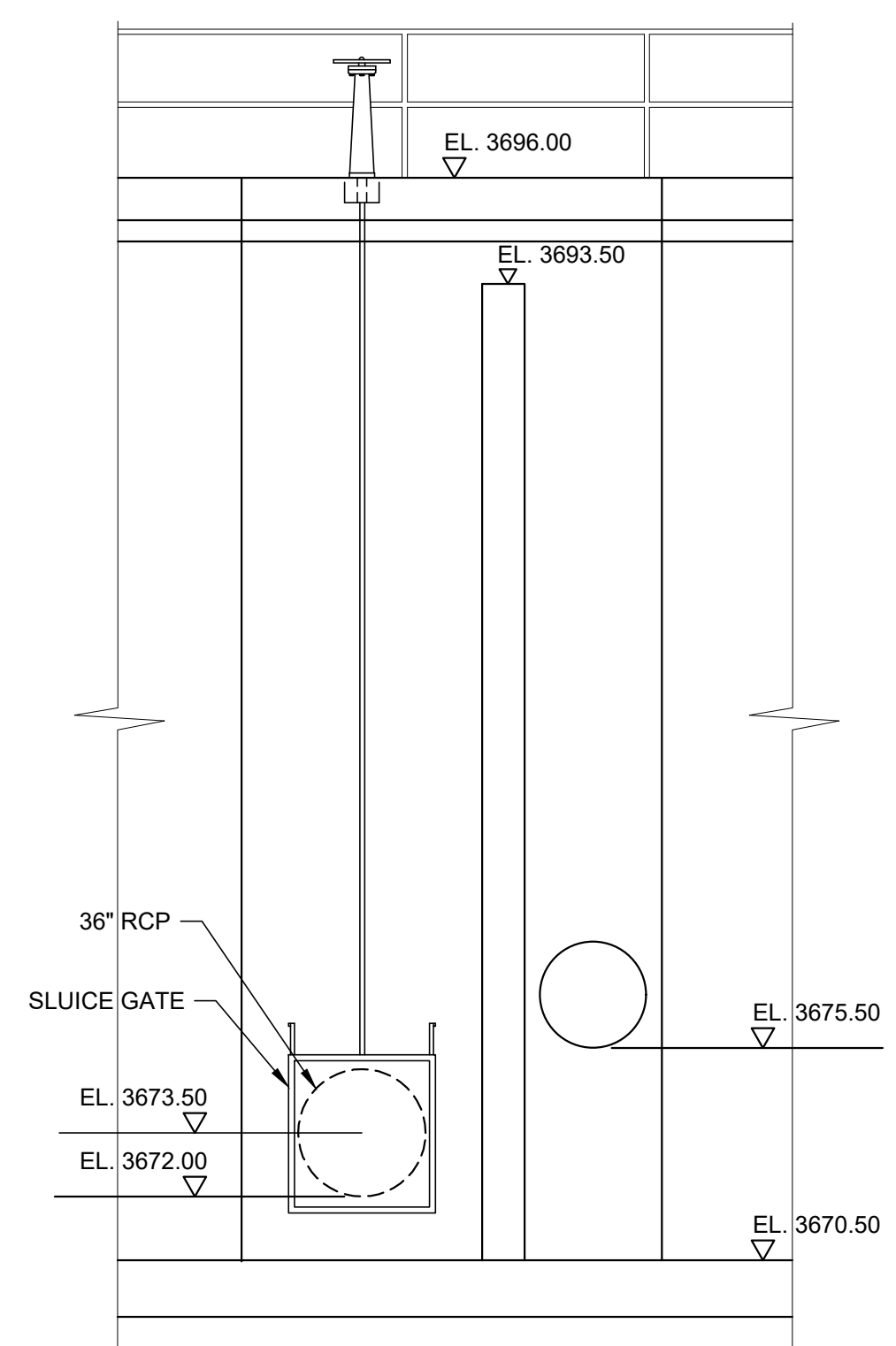


ANCHOR BOLT REPLACEMENT DETAIL

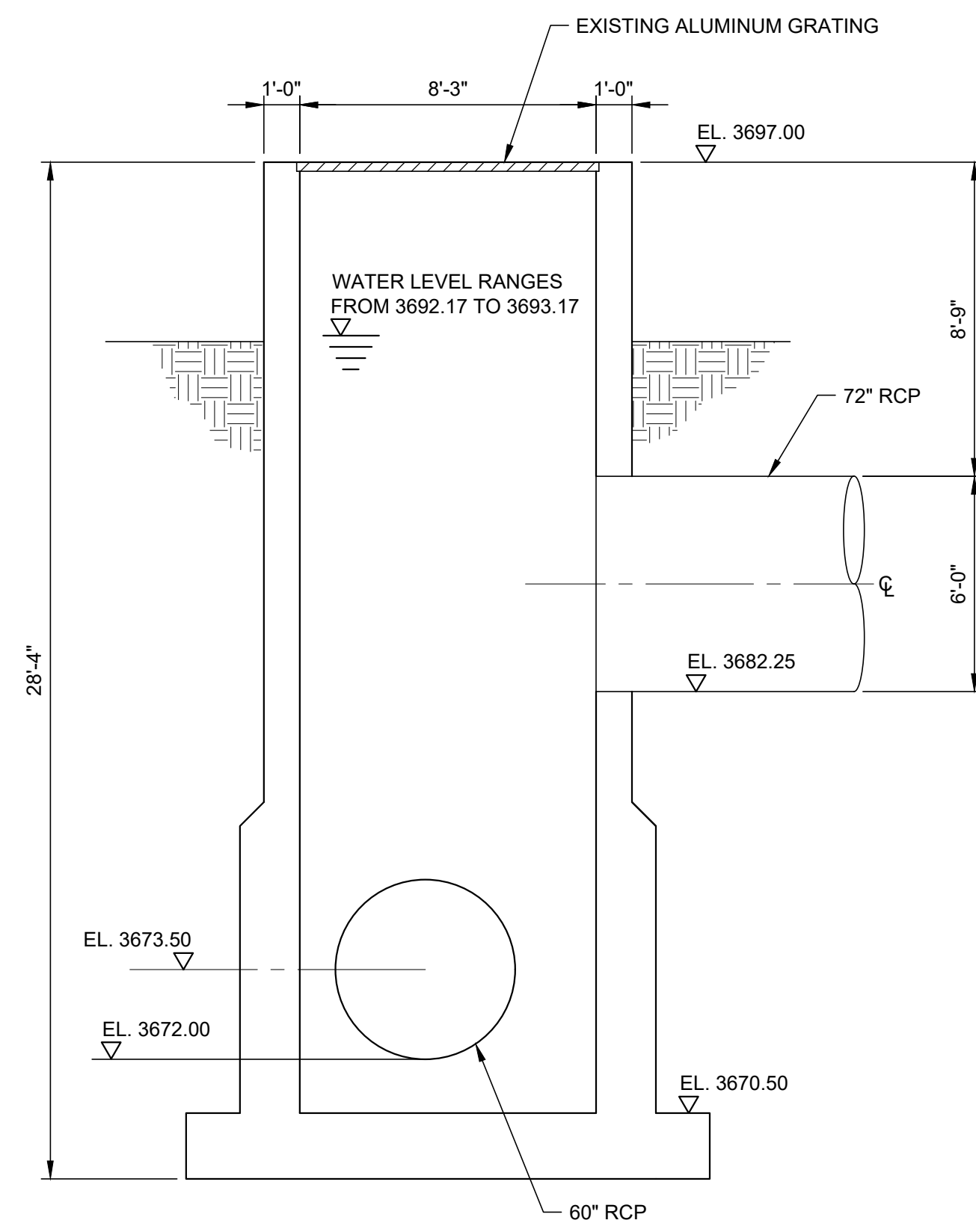
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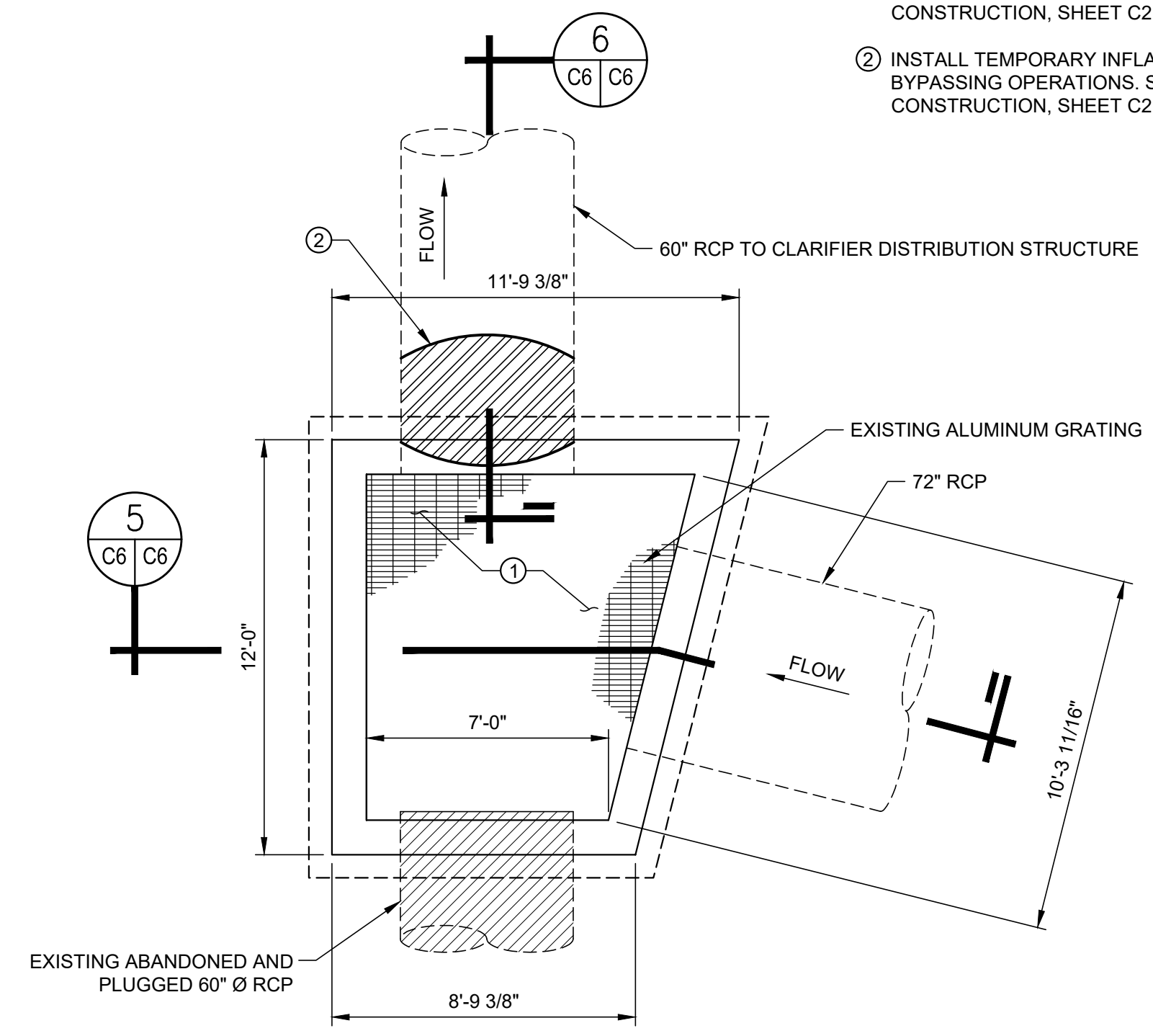
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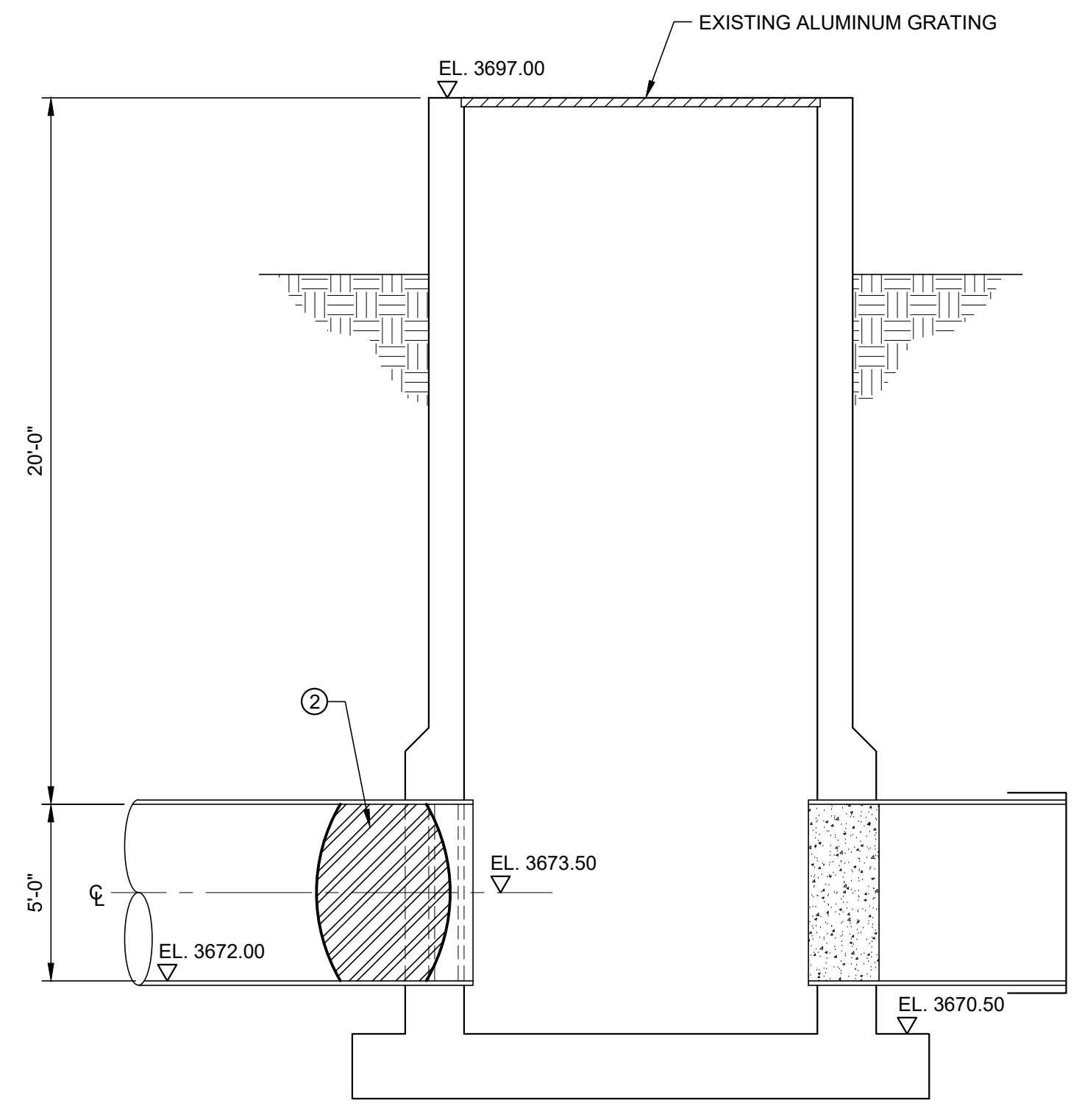
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SECTION 5  
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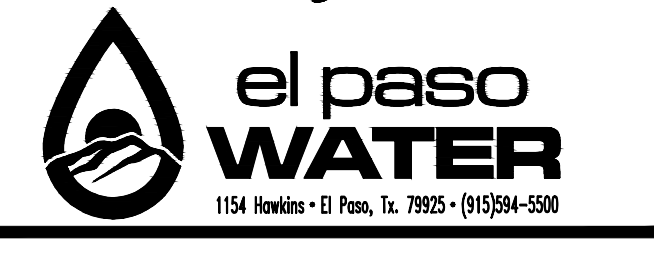
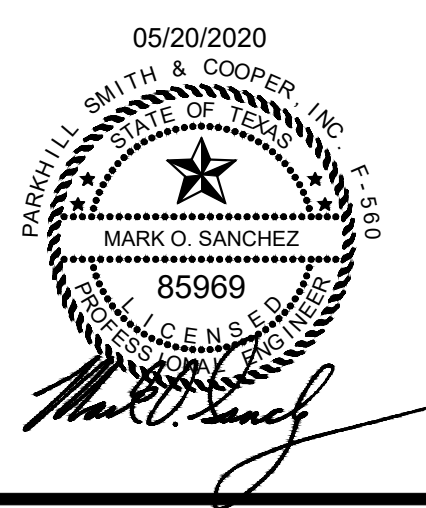


J-BOX PLAN VIEW  
SCALE: 1/4" = 1'



SECTION 6  
SCALE: 1/4" = 1'

- KEYED NOTES:
- REMOVE ALUMINUM GRATING AND INSTALL TEMPORARY BYPASS PUMPING SYSTEM. SEE SEQUENCE OF CONSTRUCTION, SHEET C2.
  - INSTALL TEMPORARY INFLATABLE PLUG DURING BYPASSING OPERATIONS. SEE SEQUENCE OF CONSTRUCTION, SHEET C2.



HASKELL STREET WWTP  
SECONDARY CLARIFIERS  
SPLITTER BOX 36-INCH  
SLUCE GATE REPLACEMENT

EL PASO WATER  
4100 DELTA DR.  
EL PASO, TEXAS 79905

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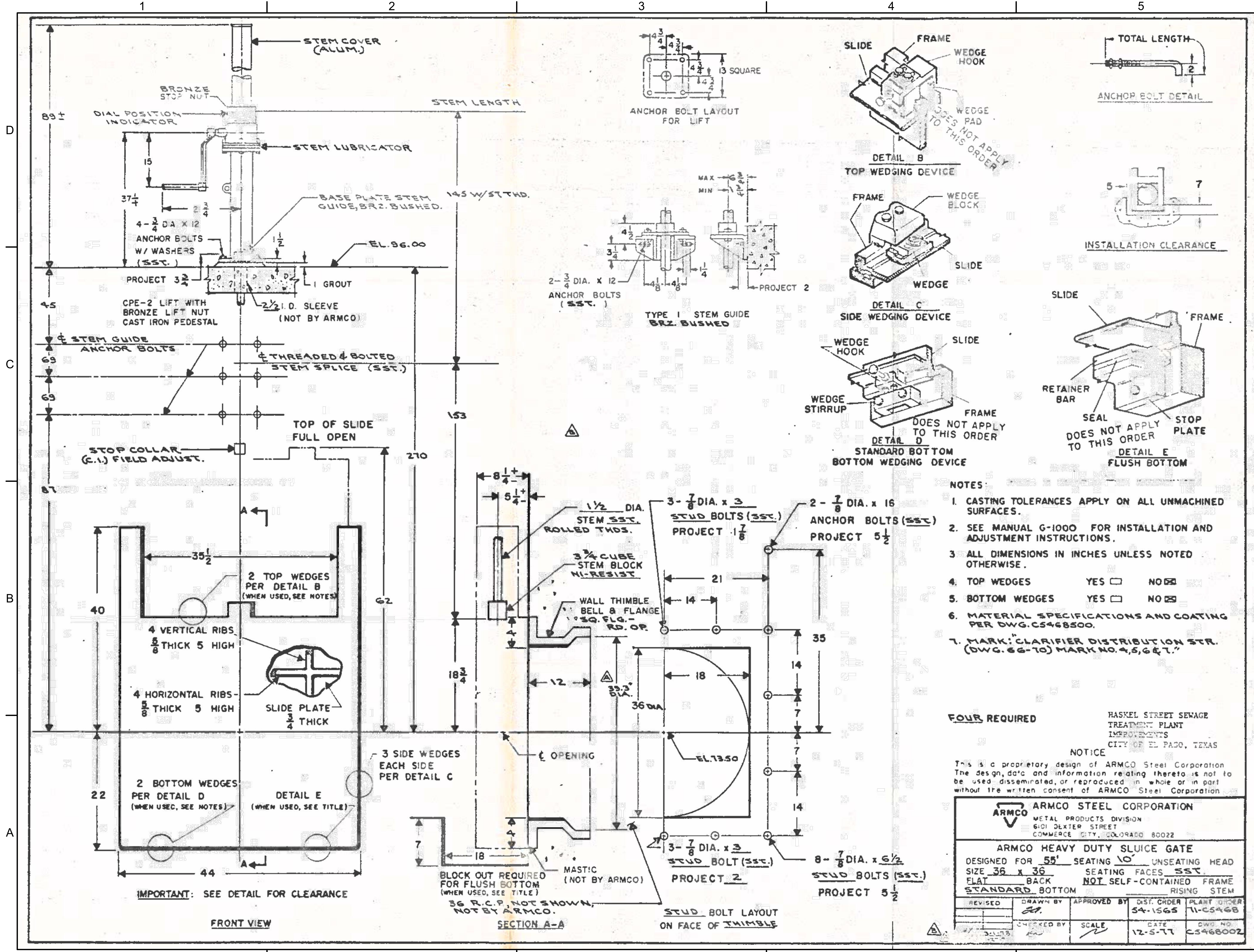
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ISSUING OFFICE: EL PASO PROJECT NO: 6922.19  
**DISTRIBUTION STRUCTURE SECTIONS**  
**J-BOX C PLAN VIEW AND SECTIONS**

FILE NAME: X:\2019\6922.19\03\_DSGND1\_DWG050\_CIVIL\006-6922.dwg LAYOUT NAME: C6 PRINTED: Thursday, May 21, 2020 - 9:48am USER: csanchez



FILE NAME: X:\2019\6922.19\03\_DSGN01\_DWG050\_CIVIL\007-6922.dwg LAYOUT NAME: C7 PRINTED: Thursday, May 21, 2020 - 9:48am USER: csanchez



**HASKELL STREET WWTP  
SECONDARY CLARIFIERS  
SPLITTER BOX 36-INCH  
SLUICE GATE REPLACEMENT**

**PSC & COOPER**  
PARKHILL SMITH & COOPER  
05/20/2020  
MARK O. SANCHEZ  
85969  
EL PASO, TEXAS  
el paso WATER  
1154 Hawkins - El Paso, Tx. 79925 - (915)994-5500

EL PASO WATER  
4100 DELTA DR.  
EL PASO, TEXAS 79905

- NOTES:**
1. CASTING TOLERANCES APPLY ON ALL UNMACHINED SURFACES.
  2. SEE MANUAL G-1000 FOR INSTALLATION AND ADJUSTMENT INSTRUCTIONS.
  3. ALL DIMENSIONS IN INCHES UNLESS NOTED OTHERWISE.
  4. TOP WEDGES YES  NO
  5. BOTTOM WEDGES YES  NO
  6. MATERIAL SPECIFICATIONS AND COATING PER DWG. CS468500.
  7. MARK: CLARIFIER DISTRIBUTION STR. (DWG. 66-10) MARK NO. 4, 5, 6 & 7.

**FOUR REQUIRED**

HASKELL STREET SEWAGE TREATMENT PLANT IMPROVEMENTS CITY OF EL PASO, TEXAS

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<b>ARMCO STEEL CORPORATION</b>				
METAL PRODUCTS DIVISION 6101 DEXTER STREET COMMERCE CITY, COLORADO 80022				
<b>ARMCO HEAVY DUTY SLUICE GATE</b>				
DESIGNED FOR <u>55'</u> SEATING <u>10'</u> UNSEATING HEAD				
SIZE <u>36</u> x <u>36</u> SEATING FACES <u>SST</u>				
FLAT <u>BACK</u> NOT SELF-CONTAINED FRAME				
STANDARD BOTTOM RISING STEM				
REVISED	DRAWN BY	APPROVED BY	DIST. ORDER	PLANT ORDER
	CS		54-1565	11-05468
CHECKED BY	SCALE	DATE	DWG. NO.	
		12-5-77	CS468002	

**VERIFY SCALES**

BAR IS 1/2 INCH ON ORIGINAL DRAWING

0 1/2"

IF NOT 1/2 INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

**EXISTING  
ARMCO HEAVY  
DUTY SLUICE GATE**

**C7**

1

2

3

4

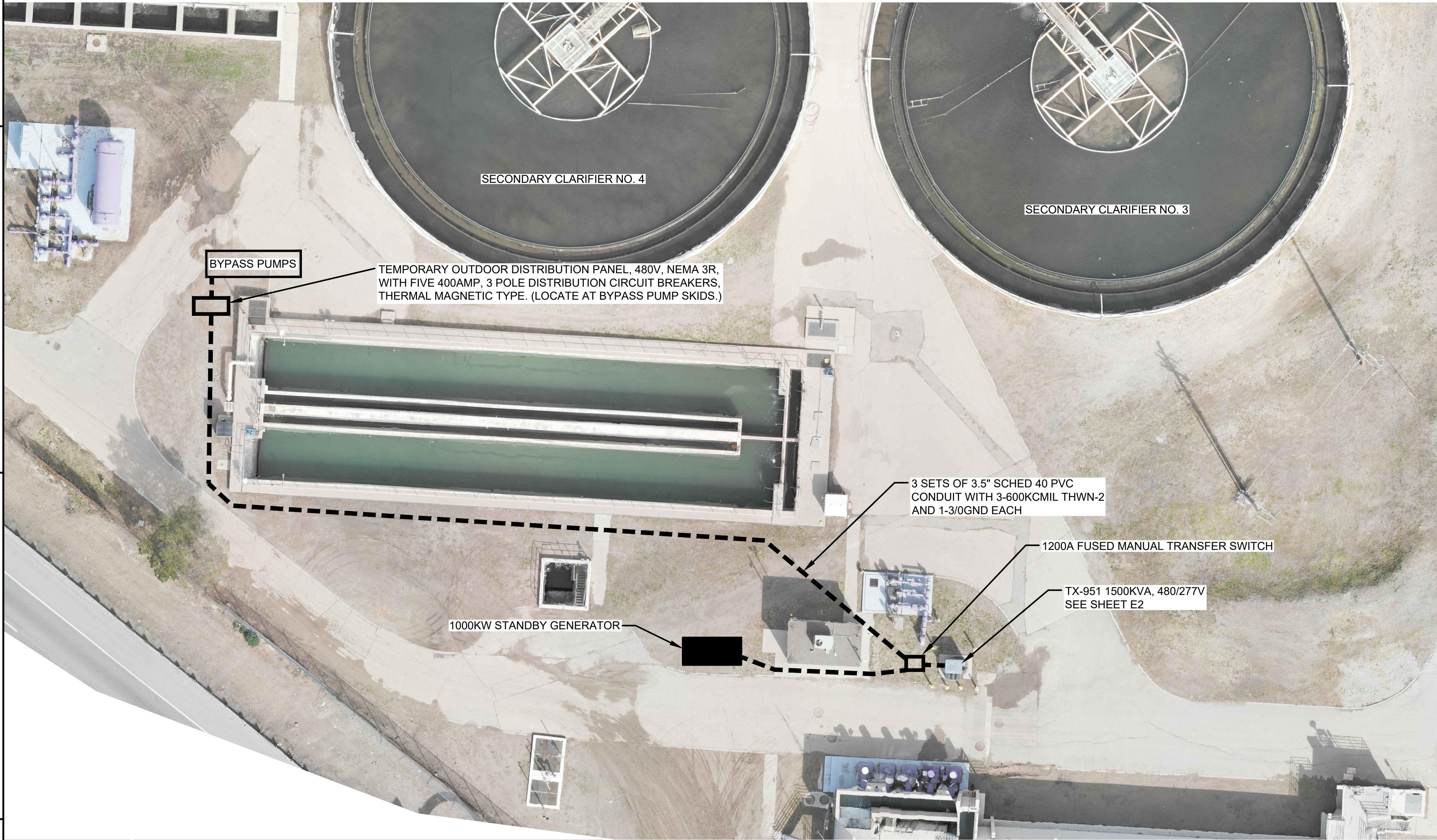
5

D

C

B

A



SECONDARY CLARIFIER NO. 4

SECONDARY CLARIFIER NO. 3

BYPASS PUMPS

TEMPORARY OUTDOOR DISTRIBUTION PANEL, 480V, NEMA 3R, WITH FIVE 400AMP, 3 POLE DISTRIBUTION CIRCUIT BREAKERS, THERMAL MAGNETIC TYPE. (LOCATE AT BYPASS PUMP SKIDS.)

3 SETS OF 3.5" SCHED 40 PVC CONDUIT WITH 3-600KCMIL THWN-2 AND 1-3/0GND EACH

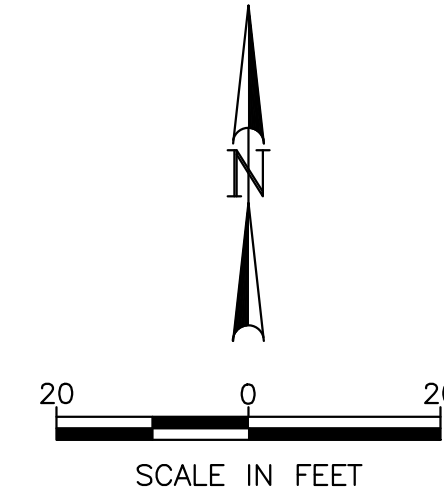
1200A FUSED MANUAL TRANSFER SWITCH

TX-951 1500KVA, 480/277V SEE SHEET E2

1000KW STANDBY GENERATOR

**TEMPORARY CABLE ROUTE PLAN VIEW**

SCALE: 1" = 20'



**LEGEND**

**BYPASS PUMPS** TEMPORARY BYPASS PUMP(S) MINIMUM 40 MGD PLUS 8 MGD REDUNDANCY PUMP(S).

**-----** CABLING ROUTE

**NOTES:**

- POWER PLAN SHOWN IS BASED ON 4 DUTY PUMPS AND 1 BACK-UP PUMP AT MAXIMUM 250 AMPS PER PUMP AT FULL LOAD. FOR BYPASS PUMPING SYSTEM REQUIRING GREATER ELECTRICAL LOADS THEN THE ABOVE, CONTRACTOR SHALL USE DIESEL ENGINE POWERED PUMPS.
- FOR BYPASS PUMPING SYSTEM REQUIRING MORE THAN 1000 AMPS, CONTRACTOR SHALL USE DIESEL ENGINE POWERED PUMPS.
- EXISTING TRANSFORMER TX-951 IS NOT BACKED UP BY PLANT EMERGENCY GENERATOR, THEREFORE ANY ELECTRICAL POWERED BYPASS PUMPING SYSTEM SHALL BE BACKED UP BY A PORTABLE STANDBY GENERATOR SIZED FOR ALL THE ELECTRIC MOTOR DRIVEN PUMPS.
- STRUCTURE NEXT TO CABLE ROUTE IS A SECONDARY SEDIMENTATION TANK. PER NFPA 820 TABLE 5.2.2-16, THE NEC AREA ELECTRICAL CLASSIFICATION IS UNCLASSIFIED. TEMPORARY ELECTRICAL INSTALLATION SHALL FOLLOW REQUIREMENTS OF THE LATEST VERSION OF THE NATIONAL ELECTRIC CODE.



**HASKELL STREET WWTP  
SECONDARY CLARIFIERS  
SPLITTER BOX 36-INCH  
SLUICE GATE REPLACEMENT**

EL PASO WATER

4100 DELTA DR.  
EL PASO, TEXAS 79905

**VERIFY SCALES**

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0 1/2"  
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NO.	DATE	DESCRIPTION

**ELECTRICAL  
TEMPORARY POWER  
CABLING ROUTES**

**E1**

FILE NAME: X:\2019\6922.19\03\_DSGN\01\_DWG\050\_CIVILE\01-6922.dwg LAYOUT NAME: E1 PRINTED: Thursday, May 21, 2020 - 9:49am USER: osanchez



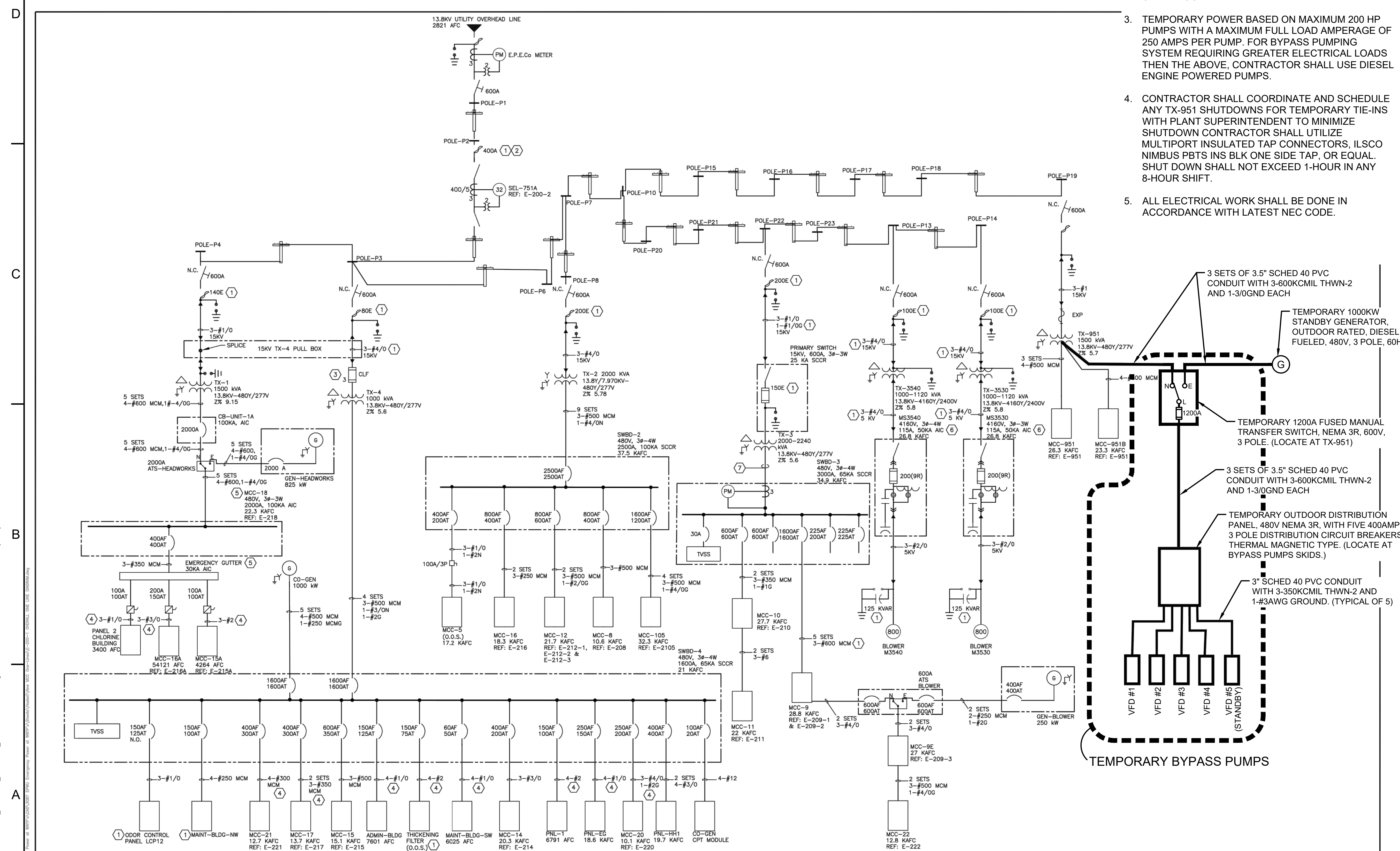
PARKHILL SMITH & COOPER



**HASKELL STREET WWTP  
 SECONDARY CLARIFIERS  
 SPLITTER BOX 36-INCH  
 SLUICE GATE REPLACEMENT**

EL PASO WATER  
 4100 DELTA DR.  
 EL PASO, TEXAS 79905

- TEMPORARY BYPASS NOTES:**
1. THESE NOTES REFER TO THE MODIFICATIONS INSIDE THE DASHED AREA IDENTIFIED AS TEMPORARY BYPASS PUMPS. ANY KEYED NOTES OR REFERENCES OUTSIDE OF TEMPORARY BYPASS PUMPS AREA ARE NOT PART OF THIS PROJECT.
  2. REFER TO BYPASS PUMPING PLAN SHEET C3 FOR CABLE ROUTE.
  3. TEMPORARY POWER BASED ON MAXIMUM 200 HP PUMPS WITH A MAXIMUM FULL LOAD AMPERAGE OF 250 AMPS PER PUMP. FOR BYPASS PUMPING SYSTEM REQUIRING GREATER ELECTRICAL LOADS THEN THE ABOVE, CONTRACTOR SHALL USE DIESEL ENGINE POWERED PUMPS.
  4. CONTRACTOR SHALL COORDINATE AND SCHEDULE ANY TX-951 SHUTDOWNS FOR TEMPORARY TIE-INS WITH PLANT SUPERINTENDENT TO MINIMIZE SHUTDOWN CONTRACTOR SHALL UTILIZE MULTIPOINT INSULATED TAP CONNECTORS, ILSCO NIMBUS PBTS INS BLK ONE SIDE TAP, OR EQUAL. SHUT DOWN SHALL NOT EXCEED 1-HOUR IN ANY 8-HOUR SHIFT.
  5. ALL ELECTRICAL WORK SHALL BE DONE IN ACCORDANCE WITH LATEST NEC CODE.



3 SETS OF 3.5" SCHED 40 PVC CONDUIT WITH 3-600KCMIL THWN-2 AND 1-3/0GND EACH

TEMPORARY 1000KW STANDBY GENERATOR, OUTDOOR RATED, DIESEL FUELED, 480V, 3 POLE, 60HZ

TEMPORARY 1200A FUSED MANUAL TRANSFER SWITCH, NEMA 3R, 600V, 3 POLE. (LOCATE AT TX-951)

3 SETS OF 3.5" SCHED 40 PVC CONDUIT WITH 3-600KCMIL THWN-2 AND 1-3/0GND EACH

TEMPORARY OUTDOOR DISTRIBUTION PANEL, 480V NEMA 3R, WITH FIVE 400AMP, 3 POLE DISTRIBUTION CIRCUIT BREAKERS, THERMAL MAGNETIC TYPE. (LOCATE AT BYPASS PUMPS SKIDS.)

3" SCHED 40 PVC CONDUIT WITH 3-350KCMIL THWN-2 AND 1-#3AWG GROUND. (TYPICAL OF 5)

**TEMPORARY BYPASS PUMPS**

**VERIFY SCALES**  
 BAR IS 1/2 INCH ON ORIGINAL DRAWING  
 0 1/2"  
 IF NOT 1/2 INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

NO.	DATE	DESCRIPTION

ISSUING OFFICE: EL PASO PROJECT NO: 6922.19

**ELECTRICAL  
 EXISTING OVERALL  
 ONE-LINE DIAGRAM**

JOB NO. 3087
DRAWING NO. E-200-1
SEQUENCE NO. 2 OF 26

FILE NAME: X:\2019\6922.19\03\_DSGND1\_DWG\050\_CIVILE002-6922.dwg LAYOUT NAME: E2 PRINTED: Thursday, May 21, 2020 - 9:49am USER: osanchez

REV.	DATE	BY	DESCRIPTION

DESIGNED JLC	RECORD DRAWING - SEPTEMBER 2017
DRAWN CAD	
CHECKED JLC	
DATE 09/15/17	

THIS RECORD DRAWING IS A COMPILATION OF A COPY OF ENGINEERING DRAWING FOR THIS PROJECT AND INFORMATION GATHER FROM THE FIELD BY BATH ENGINEERING. SOME OF THE INFORMATION SHOWN ON THIS RECORD DRAWING THAT WAS PROVIDED BY THE OWNER OR THE DESIGN ENGINEER CANNOT BE VERIFIED FOR ACCURACY OR COMPLETENESS. IT WAS ONLY BASED ON EXISTING CONDITIONS AND FIELD OBSERVATIONS. THE ORIGINAL OF THIS RECORD DRAWING WAS PREPARED UNDER THE DIRECT SUPERVISION OF JOSE LUIS CASTREJON, P.E.,



HASKELL STREET WWTP  
 EL PASO, TX  
 OVERALL ONE LINE DIAGRAM

**SECONDARY CLARIFIER  
SHOP DRAWINGS  
FOR  
CONTRACTOR REFERENCE  
(6 DRAWINGS)**

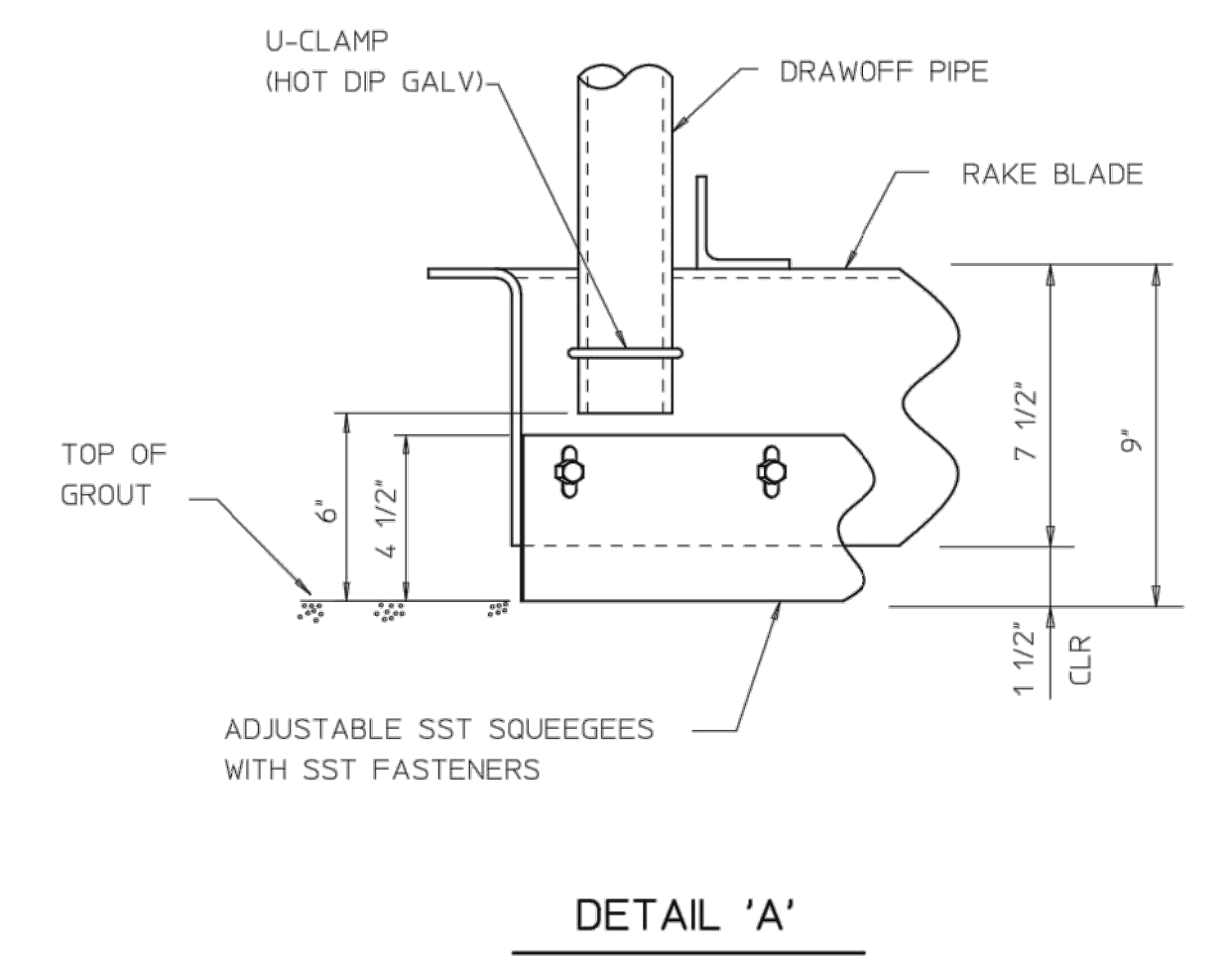
NOTES:

- ASTERISK ( \* ) DENOTES VARIANCE FROM CONTRACT DOCUMENTS AND SHOULD BE PARTICULARLY NOTED. SEE ACCOMPANYING SUBMITTAL NOTES
- THE FOLLOWING DEFINES THE RESPONSIBILITY OF THE EIMCO PROCESS EQUIPMENT COMPANY (EIMCO), WITH REGARD TO THE INFORMATION AND DIMENSIONS SHOWN ON THIS DRAWING: (A) DIMENSIONS, LOADS, AND OTHER INFORMATION ARE PROVIDED TO ACCOMMODATE THE EQUIPMENT TO THE STRUCTURE AS SHOWN. (B) THE CUSTOMER IS TO PROVIDE REINFORCING STEEL AND DESIGN FOR CONCRETE STRUCTURES AND IS TO DETERMINE SIZES TO SUIT LOCAL CONDITIONS. (C) THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION OR INSTALLATION PURPOSES UNLESS IT BEARS THE APPROVAL OF THE OWNER, THE ENGINEER OR THEIR AUTHORIZED REPRESENTATIVE. (D) THE MECHANISM SHOWN IS DESIGNED FOR DIRECTION OF ROTATION AS INDICATED. EIMCO DOES NOT ASSUME RESPONSIBILITY FOR DAMAGE IF OPERATED IN THE OPPOSITE DIRECTION. (E) CHARGES FOR MODIFICATIONS, ADDITIONS OR CORRECTIONS TO THE EQUIPMENT WILL NOT BE ACCEPTED BY EIMCO UNLESS PRIOR APPROVAL IS OBTAINED IN WRITING FROM AN AUTHORIZED EIMCO REPRESENTATIVE.
- EIMCO DOES NOT FURNISH ELECTRICAL WIRING, CONDUIT OR ELECTRICAL EQUIPMENT, PIPING, VALVES OR FITTINGS, LUBRICATING OIL OR GREASE, FIELD PAINTING, FIELD WELDING OR ERECTION, (EXCEPT AS SPECIFICALLY NOTED).
- SHOP PRIMER PAINT IS INTENDED TO SERVE ONLY AS A PROTECTIVE OR SEALING COAT. AS SUCH, IT AFFORDS THE METAL ONLY MINIMAL PROTECTION AGAINST THE ELEMENTS. EIMCO CANNOT BE RESPONSIBLE FOR DETERIORATION OF SHOP-PRIMED EQUIPMENT DURING TRANSIT, JOB STORAGE, OR OTHER EXPOSURE TO THE ELEMENTS PRIOR TO APPLICATION OF FINISH COAT(S).
- SURFACE PREPARATION TO CONSIST OF:  
 DRIVE: SSPC-SP-6  
 NON-SUB. STL: SSPC-SP-6  
 SUB. STL: SSPC-SP-5

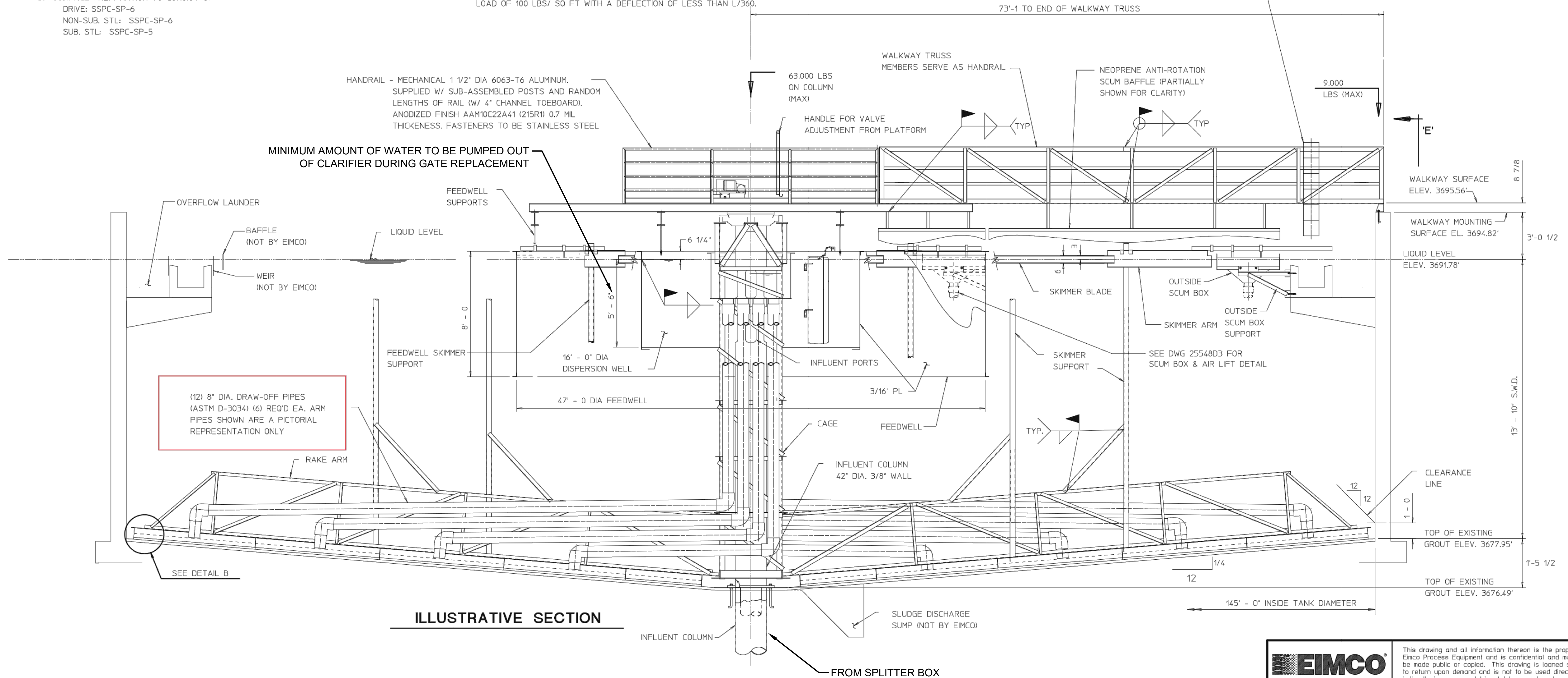
- SHOP PAINTING TO CONSIST OF:  
 DRIVE: ONE (1) SHOP COAT TNEEC #161-EN17 (4 MILS MDT)  
 NON-SUB. STL: ONE (1) SHOP COAT TNEEC SERIES 69 PRIMER (2 MILS MDT)  
 SUB. STL: ONE (1) SHOP COAT TNEEC SERIES 69 PRIMER (2 MILS MDT)
- EIMCO TO SUPPLY (4) MECHANISMS AS SHOWN AND NOTED.
- ALL WELDING SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST EDITION OF A.W.S. WELDING PROCEDURES WITH QUALIFICATION RECORDS PER A.W.S. D1.1.
- ALL STRUCTURAL SHAPES AND PLATES TO BE PER ASTM A36 AND SHALL HAVE A MINIMUM STEEL THICKNESS OF 0.25 INCHES UNLESS NOTED.
- FOR MECHANISM ORIENTATION, SEE CONTRACT DRAWINGS.
- ANCHOR BOLTS: 316SS  
 ASSEMBLY BOLTS: 316SS UNLESS NOTED  
 A325 HDG AT HIGH STRENGTH CONNECTIONS
- FOR ADDITIONAL DETAILS, REFER TO DRAWINGS:  
 25548D2 - GENERAL ARRANGEMENT DETAILS  
 25548D3 - GENERAL ARRANGEMENT DETAILS  
 25548C4 - SLUDGE COLLECTION BOX ARRANGEMENT  
 25548C5 - DRIVE CONTROL  
 25548C6 - TORQUE TEST  
 295128 - WIRING DIAGRAM  
 115711 - DRIVE GENERAL ARRANGEMENT  
 295386 - SCUM SCRAPER ASSEMBLY
- THE WALKWAY IS DESIGNED TO SAFELY WITHSTAND A DEAD LOAD PLUS A LIVE LOAD OF 100 LBS/ SQ FT WITH A DEFLECTION OF LESS THAN L/360.

14. SPARE PARTS (TOTAL FOR ORDER) TO INCLUDE:
- (4) SETS - ALL BEARINGS AND BEARING SEAL RINGS FOR DRIVE UNIT (EXCEPT THE MAIN TURNABLE BEARING)
  - (4) SETS - ALL GASKETS FOR DRIVE UNIT
  - (4) SETS - SPUR GEAR SEAL AND REPLACEABLE BEARING RACES
  - (2) SETS - OIL SIGHT GLASS (UPPER AND LOWER HOUSING)
  - (4) SETS - SHEAR PINS
  - (2) SETS - NEOPRENE WIPERS FOR ANTIROTATION BAFFLES

PIECE MARK	NO. REQ'D.	MATERIAL	DESCRIPTION / REMARKS	TOTAL WEIGHT
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\* EIMCO TO PROVIDE 1'-6" WIDE REMOVABLE STEEL LADDER FOR ACCESS TO LAUNDER & OUTSIDE SCUM BOX



MINIMUM AMOUNT OF WATER TO BE PUMPED OUT OF CLARIFIER DURING GATE REPLACEMENT

HANDRAIL - MECHANICAL 1 1/2" DIA 6063-T6 ALUMINUM. SUPPLIED W/ SUB-ASSEMBLED POSTS AND RANDOM LENGTHS OF RAIL (W/ 4" CHANNEL TOEBOARD). ANODIZED FINISH AAM10C22A41 (215R1) 0.7 MIL THICKNESS. FASTENERS TO BE STAINLESS STEEL

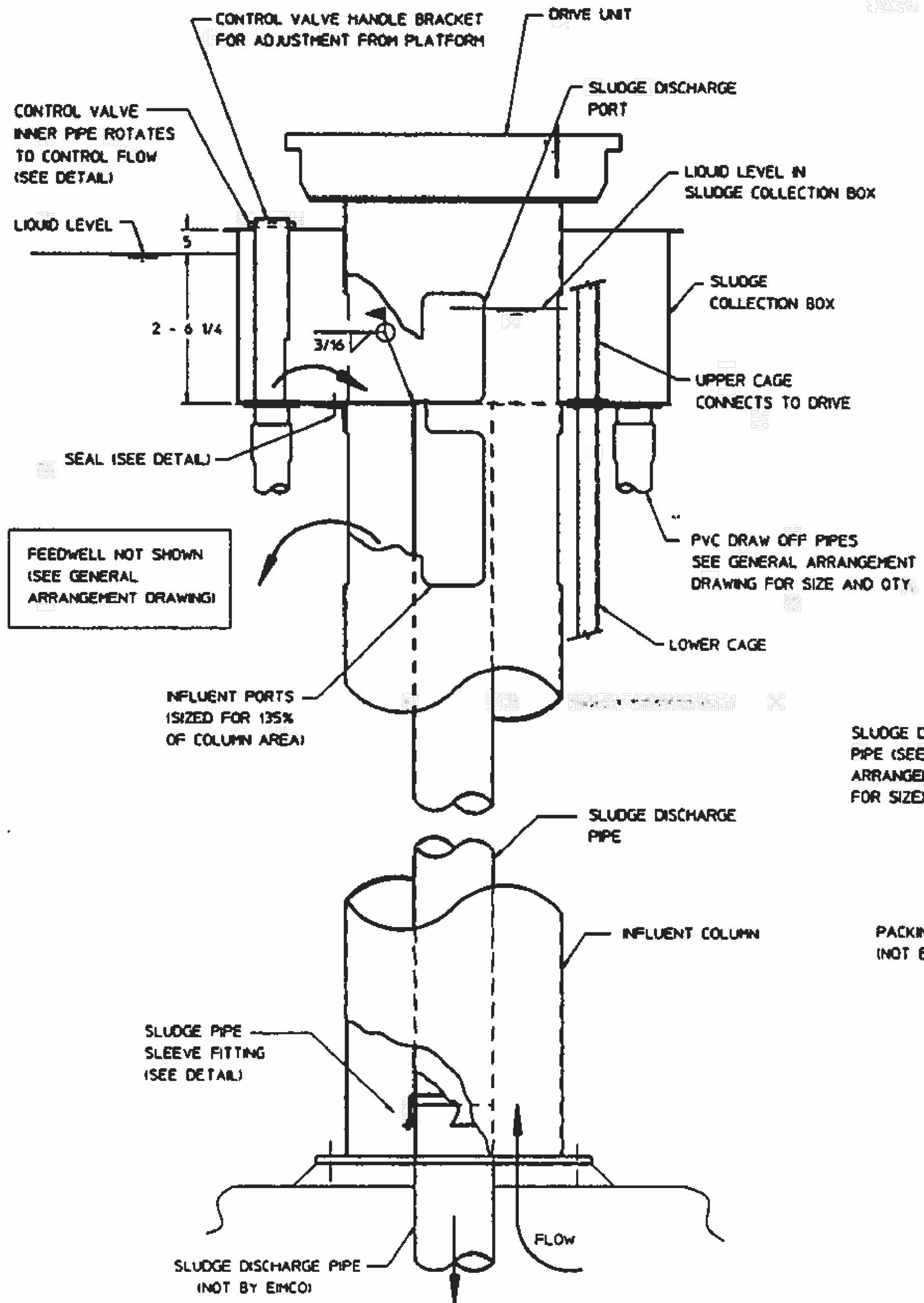
(12) 8" DIA. DRAW-OFF PIPES (ASTM D-3034) (6) REQ'D EA. ARM PIPES SHOWN ARE A PICTORIAL REPRESENTATION ONLY

ILLUSTRATIVE SECTION

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	A.D.N.		DWG. No.	25548D1
			REV	B

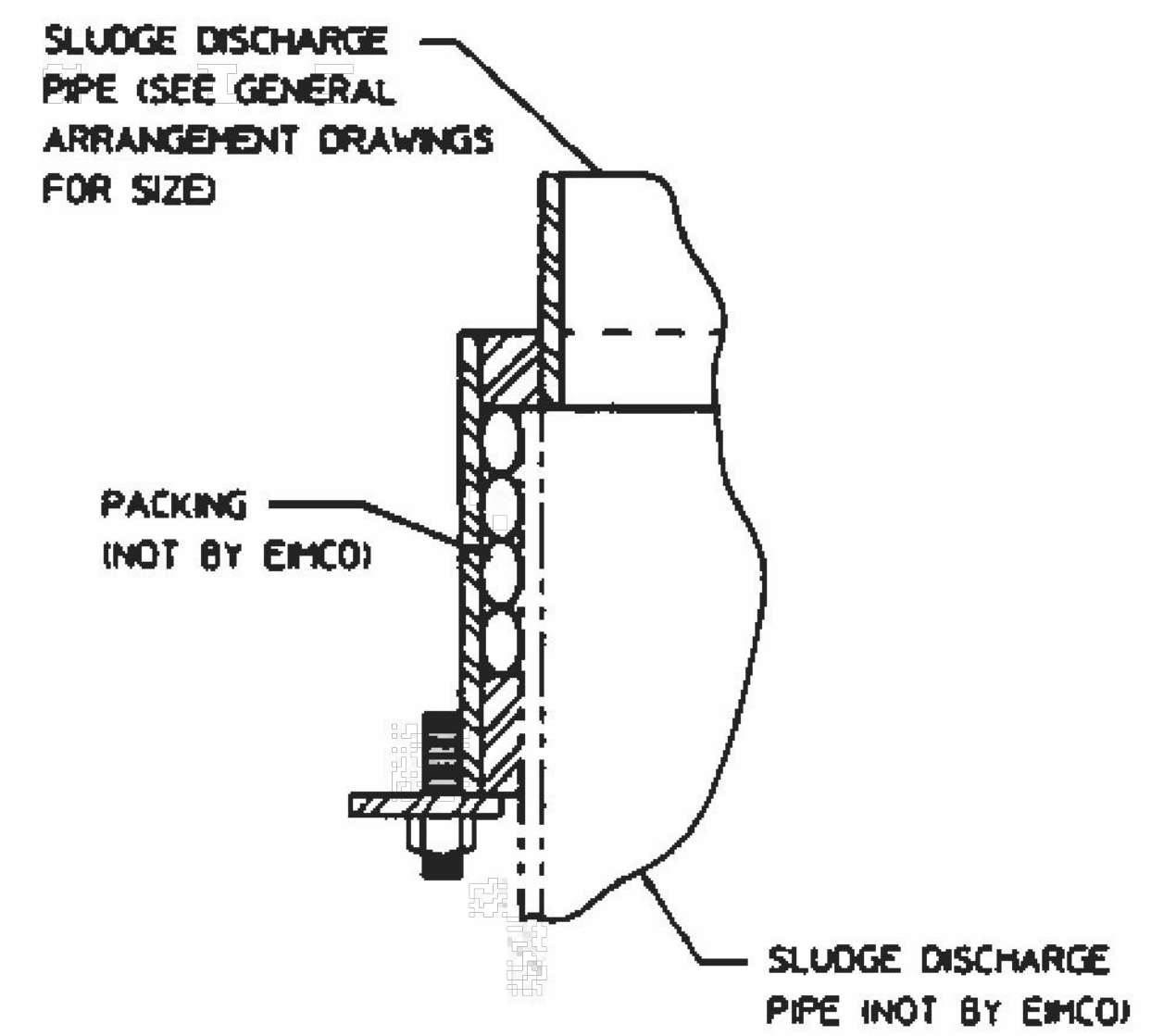
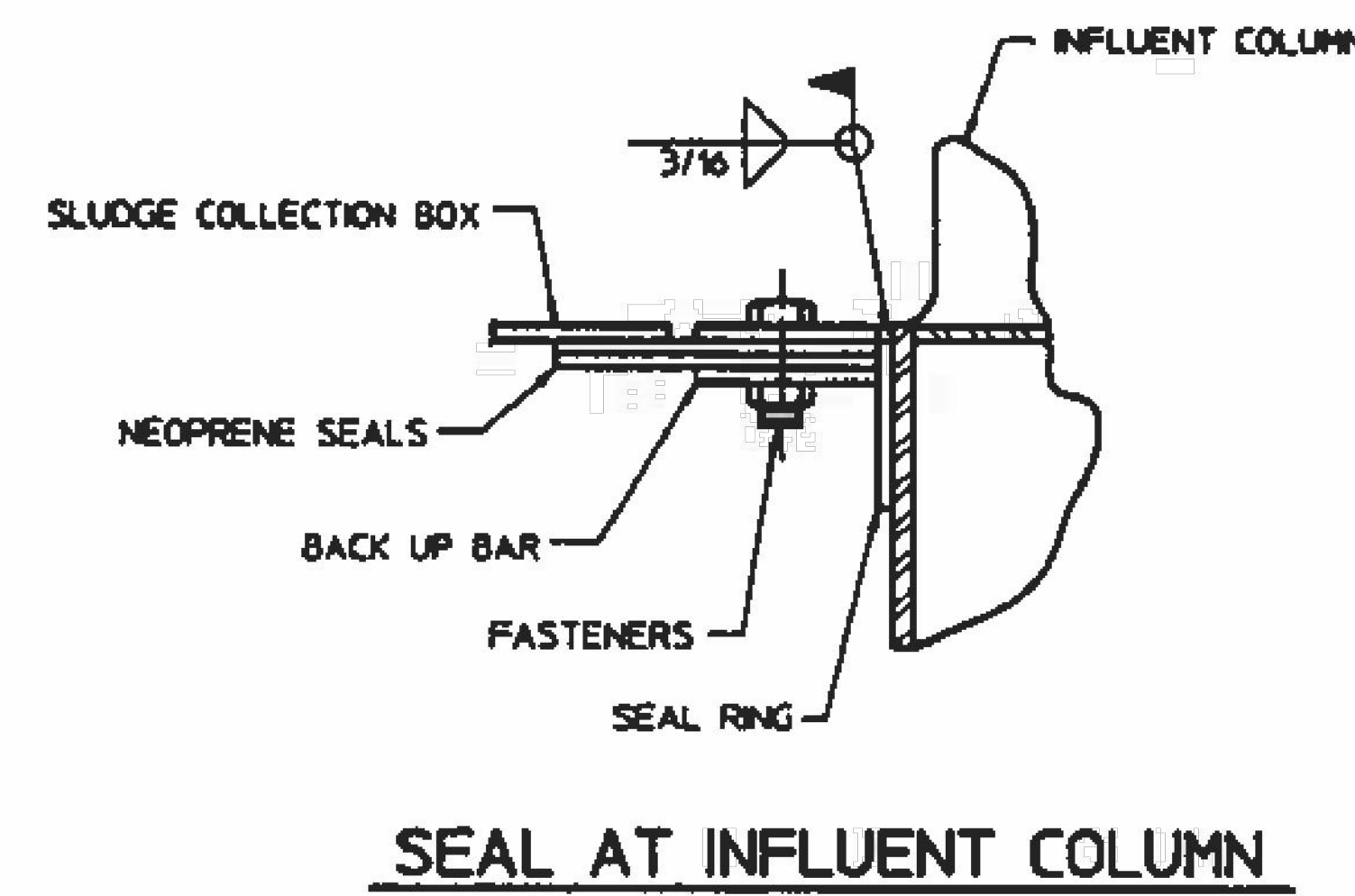
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PIECE MARK	NO. REQ'D.	MATERIAL	DESCRIPTION	MARKS	TOTAL WEIGHT
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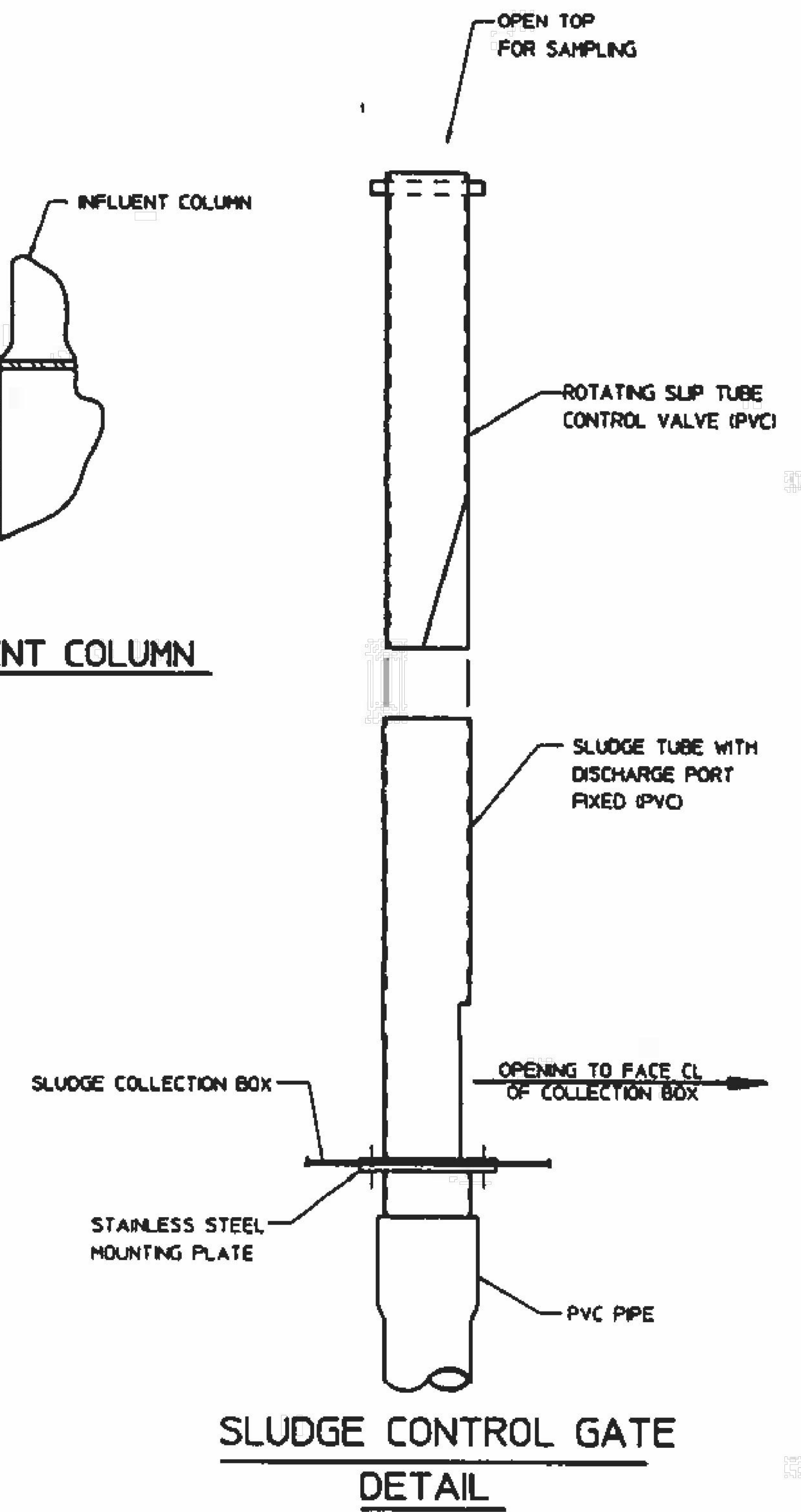


FEEDWELL NOT SHOWN (SEE GENERAL ARRANGEMENT DRAWING)

**COLUMN ILLUSTRATION**



**SLUDGE PIPE SLEEVE FITTING**



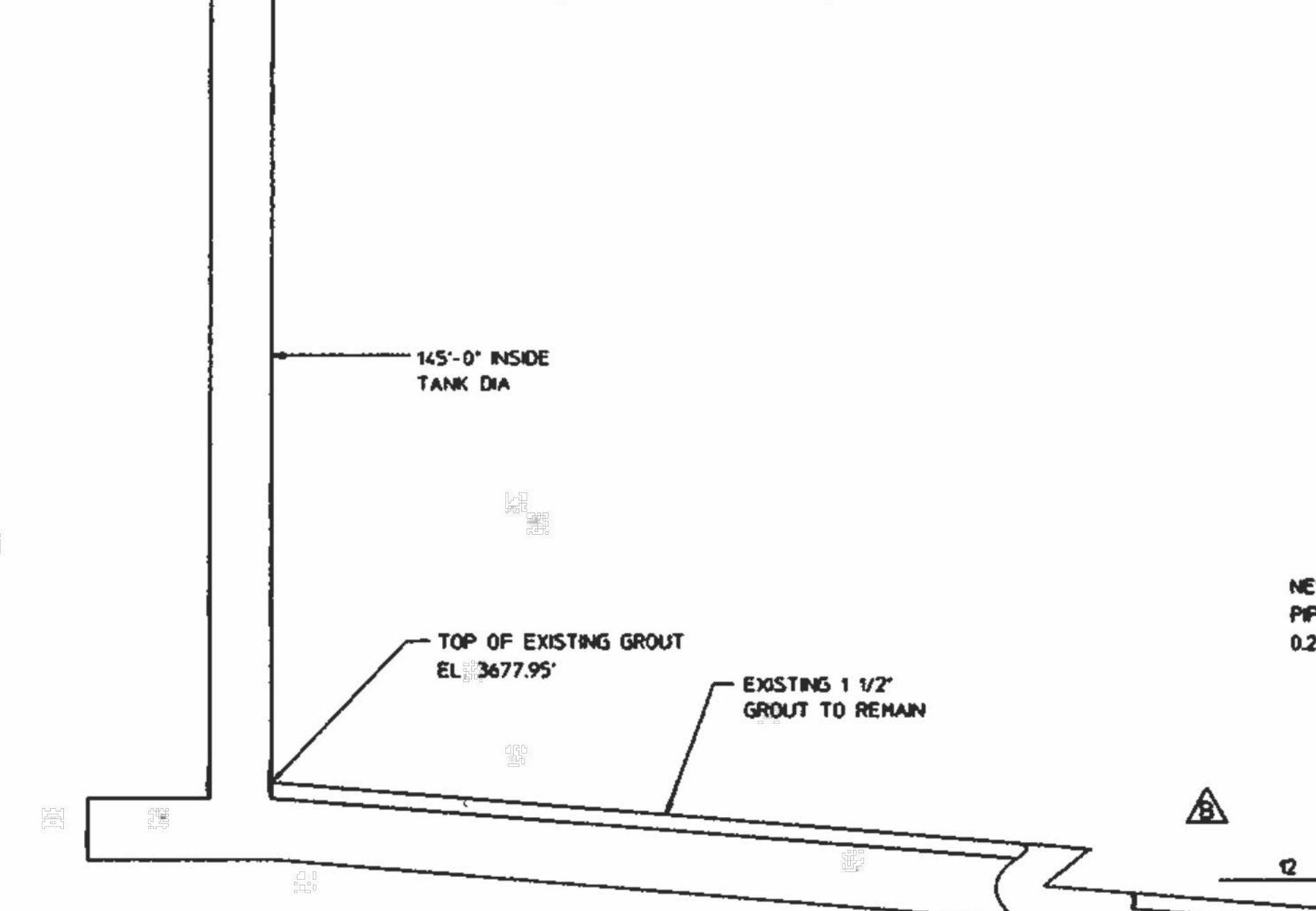
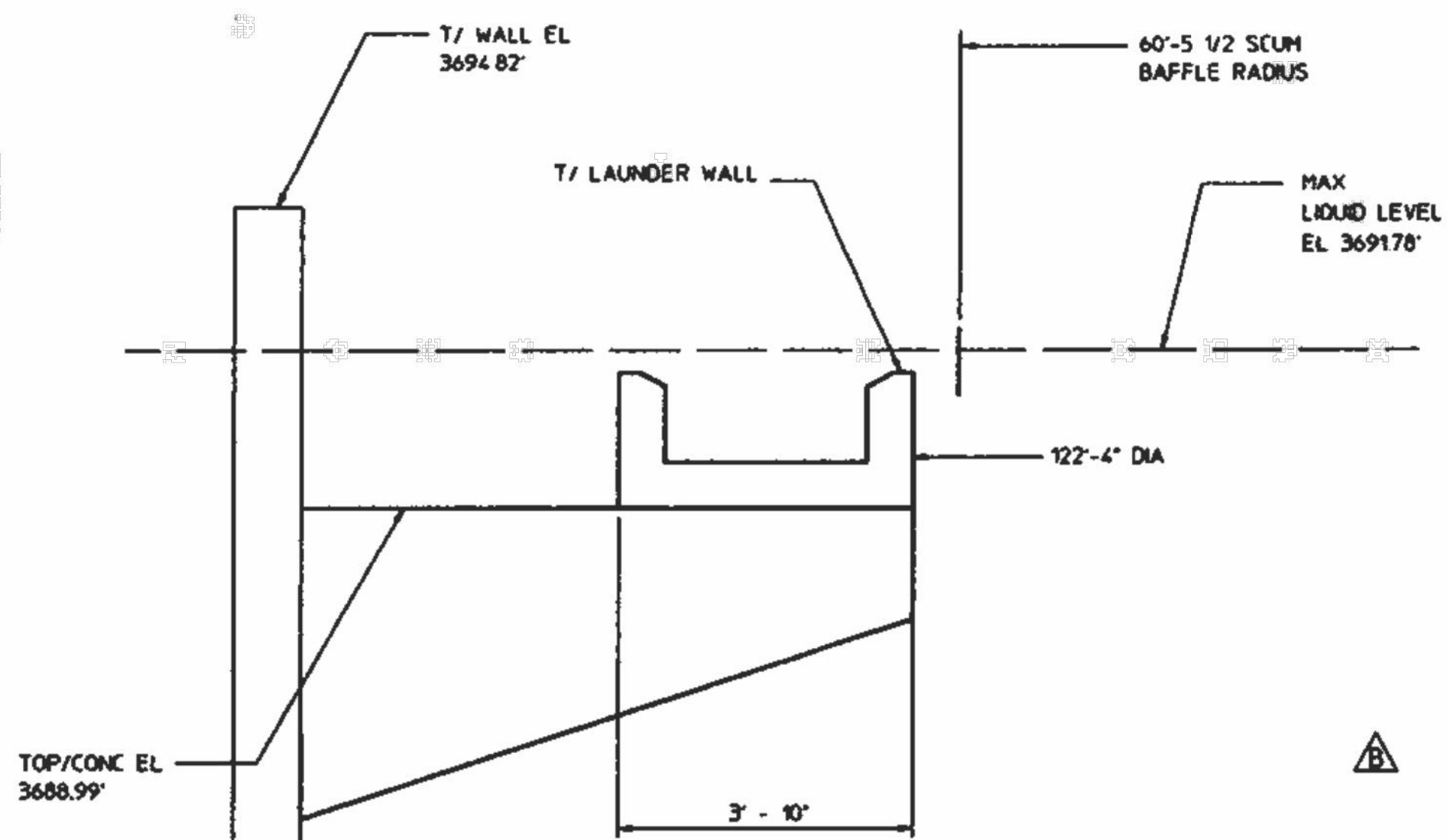
**SLUDGE CONTROL GATE DETAIL**

REVISION	EN	BY	APPR.	DATE
INITIAL RELEASE				

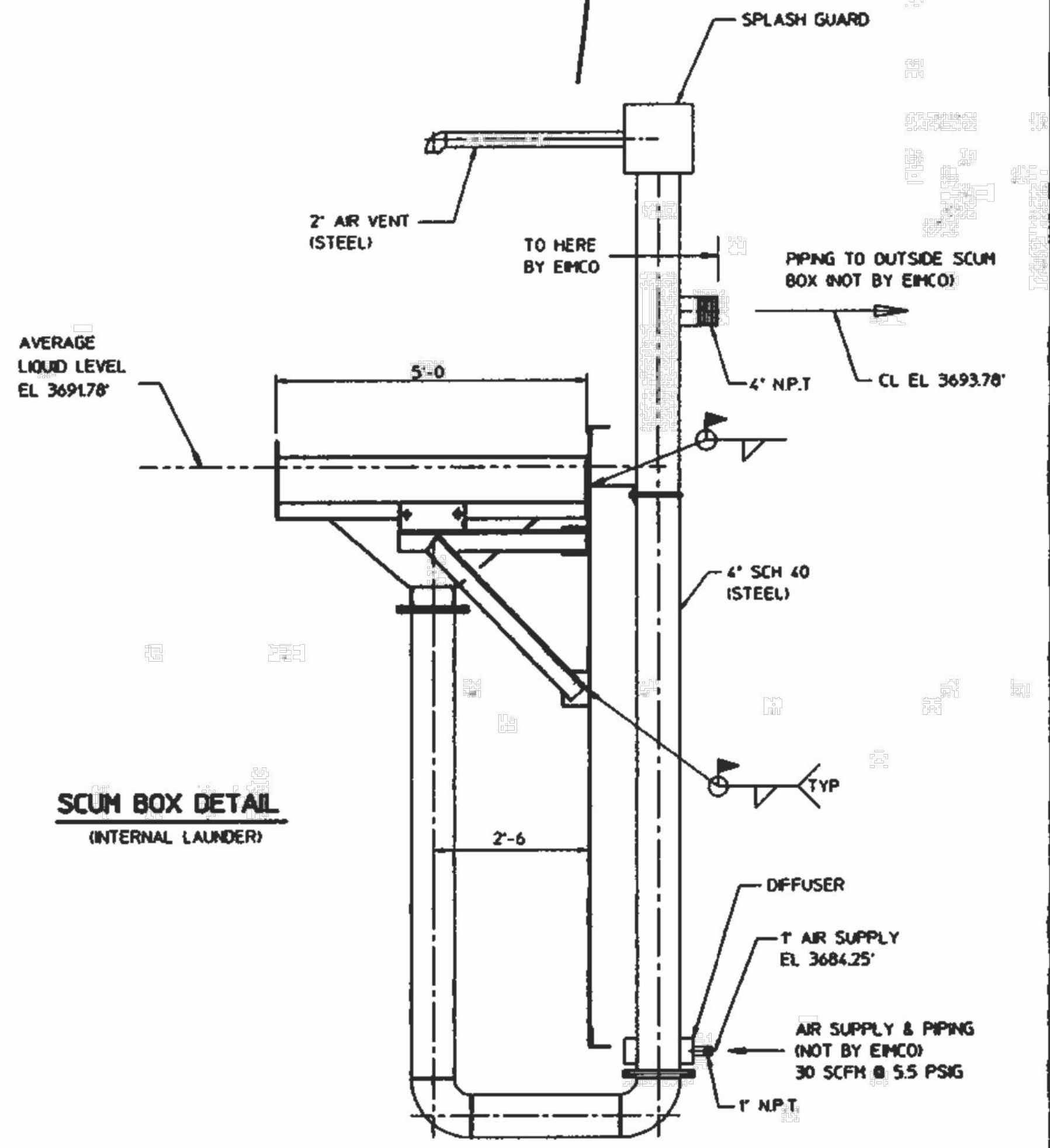
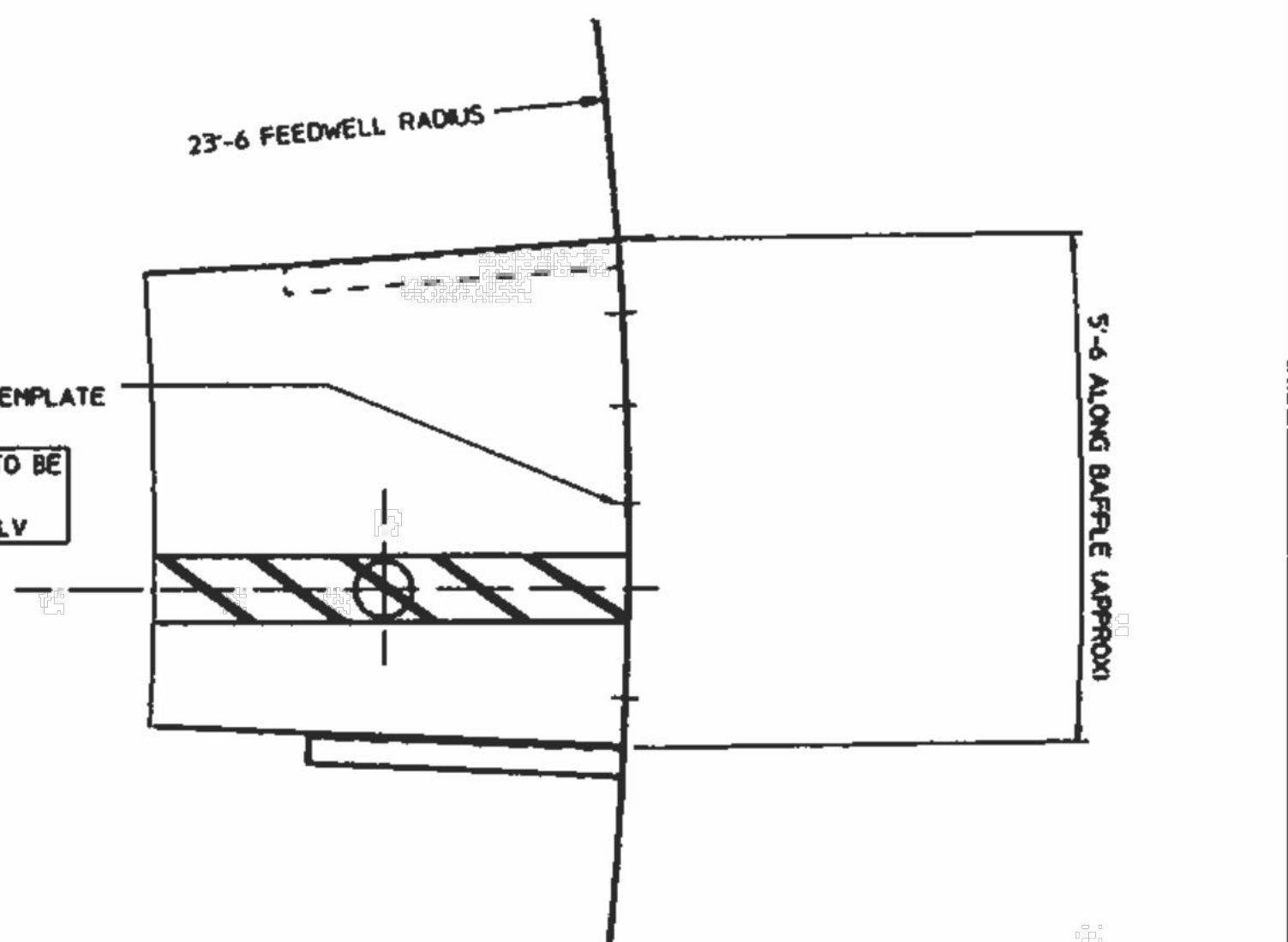
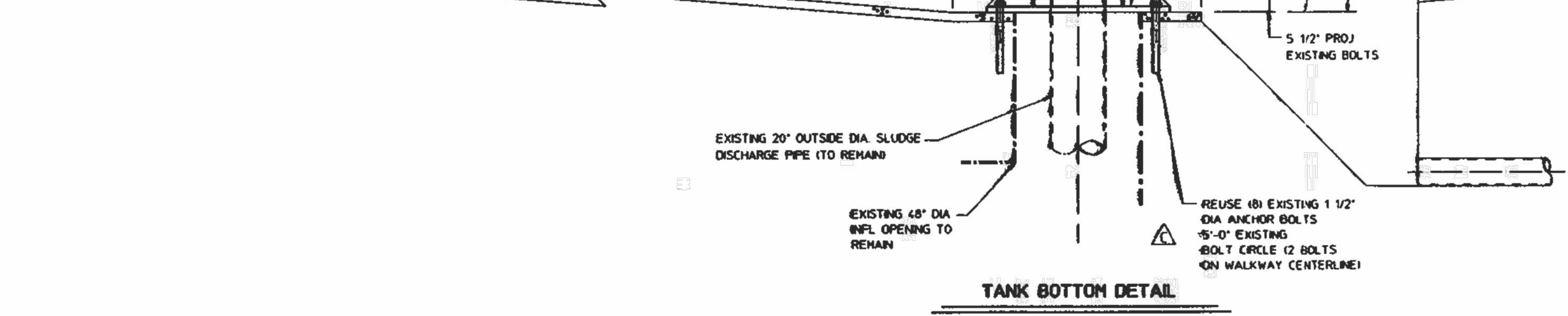
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DO NOT SCALE PRINTS	FILE SPEC.	25548C4	REF FROM	SLDG GACT		
DATE	7-23-97	<b>COLUMN AND SLUDGE COLLECTION BOX GENERAL ARRANGEMENT</b>		ADN		
DRAWN	RW					
CHECK'D	TV					
APPR.	RW			DWG NO.	25548C4	
					REV	A

Drawing File: X:\2019\6922\19\03\_DSGN\01\_DWG\050\_Civil\SHF-02-6922.dwg (esanchez) 5/2/2020 02:41:11

PIECE MARK	NO REQ'D	MATERIAL	DESCRIPTION / REMARKS	TOTAL WEIGHT
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EXISTING DIMENSIONS  
HAVE BEEN FIELD VERIFIED  
EXISTING ANCHOR BOLTS  
TO BE REUSED



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DATE	7-28-97	<b>GENERAL ARRANGEMENT DETAILS</b>		ADN	
DRAWN	RW	<b>145 - 0 DIA.</b>		SHEET	1 OF 1
CHECKD	TV	<b>'CS' TYPE CLARIFIER</b>		DWG No.	2554803
APPR	RW			REV	C

CHANGED NOTE	BY	DATE	APPR	DATE
CHANGED NOTE (8) BOLTS WITH (2) ON WALKWAY CENTERLINE	RW	11-8-97	ME	
CHANGED FIELD MEASURED DIMENSIONS	RW	10-8-97	ROW	
INITIAL RELEASE				

Drawing File: X:\2019\6922\19\03\_DSSN\01\_DWG\050\_Civil\SPH-02-6922.dwg (esanchez) 5/2/2020 02:41:11

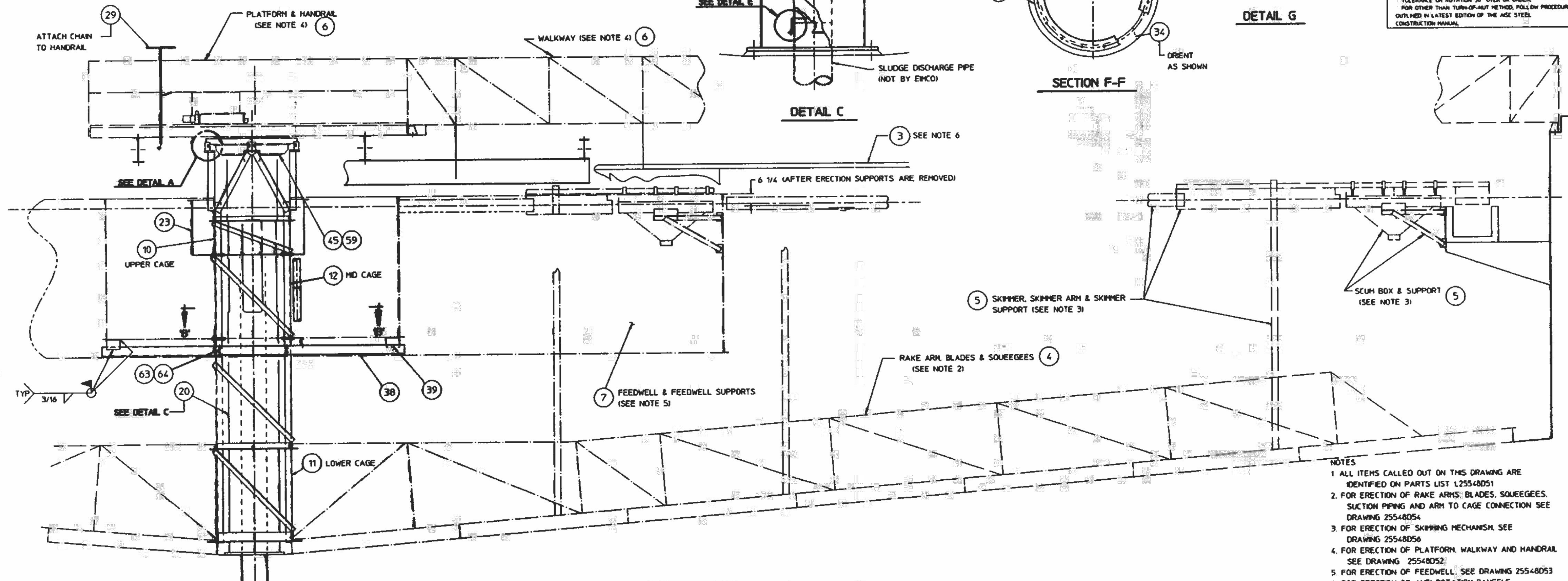
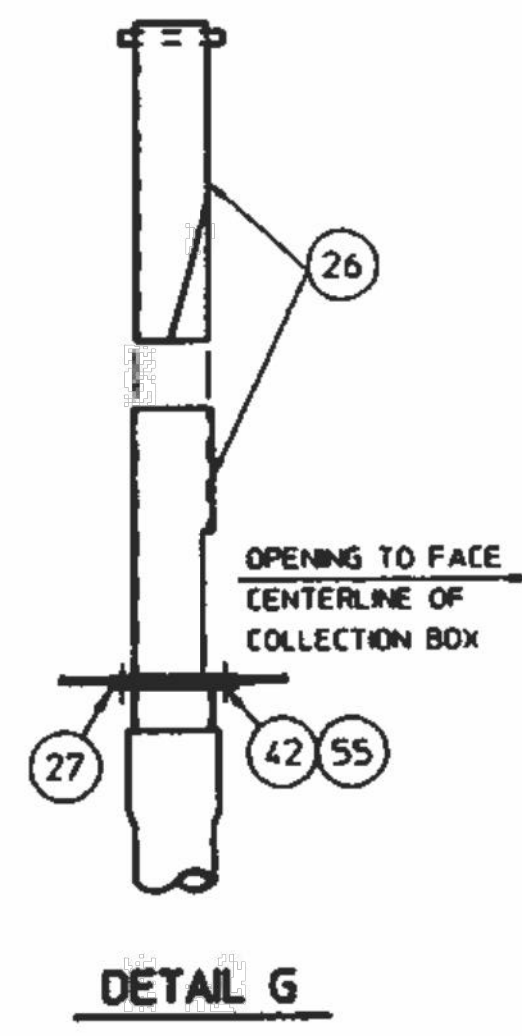
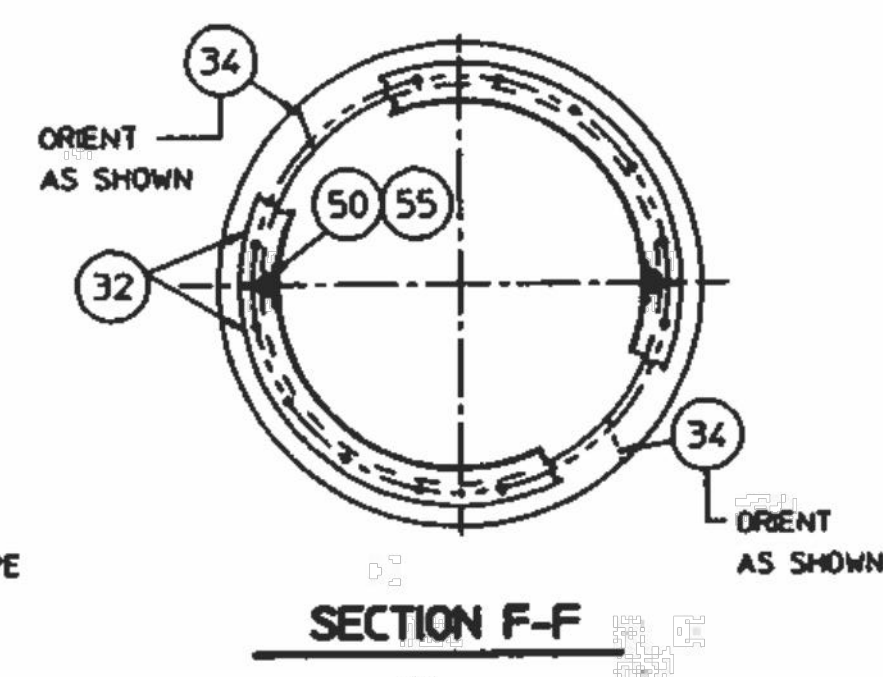
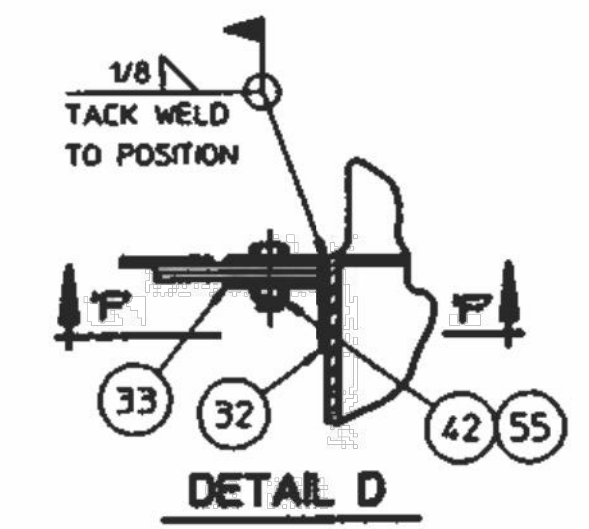
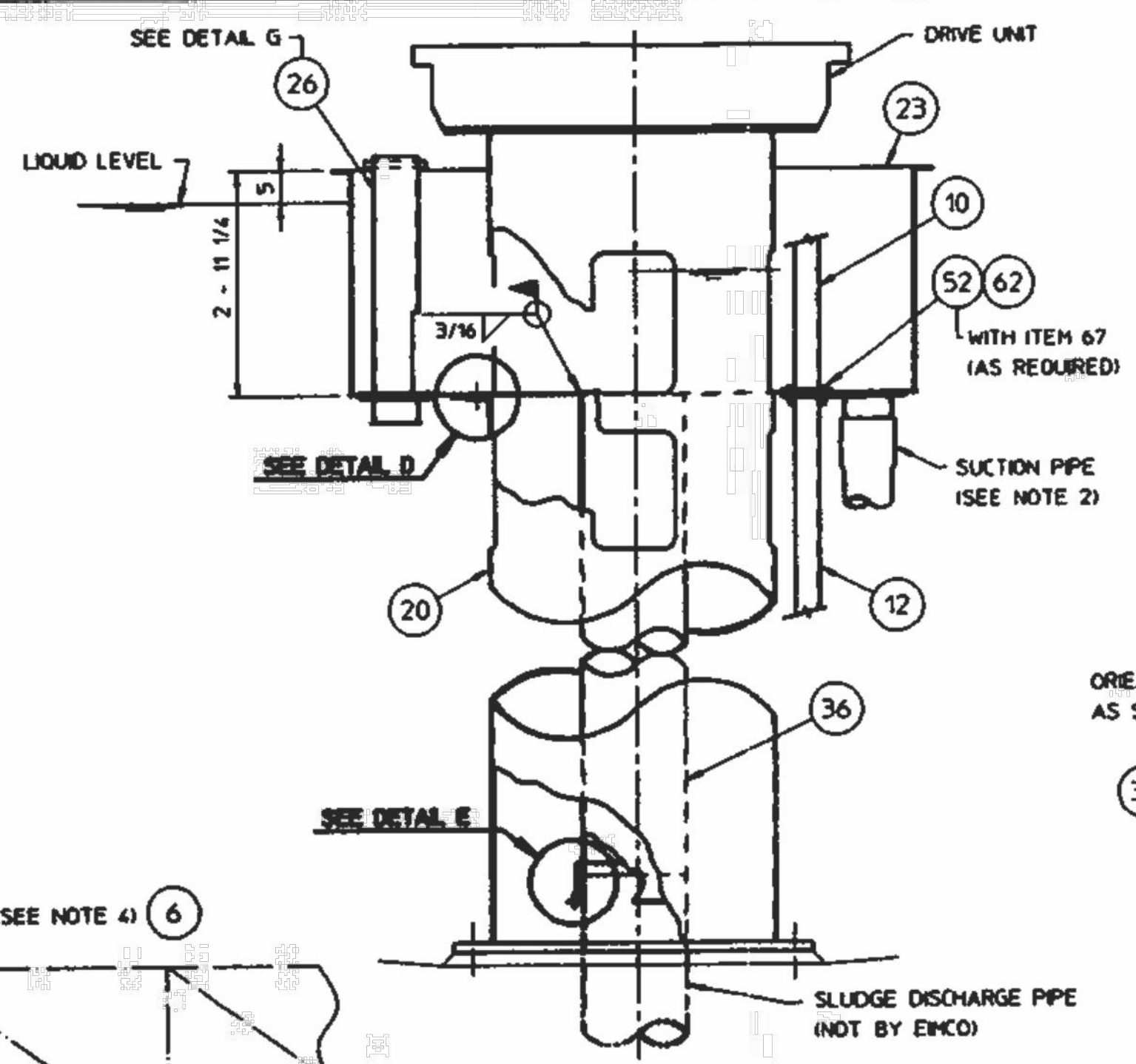
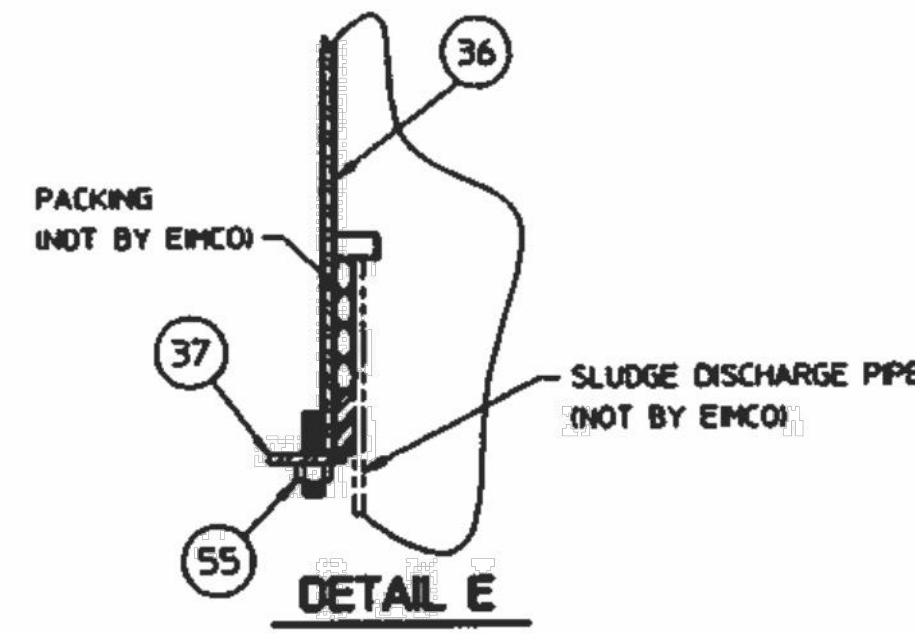
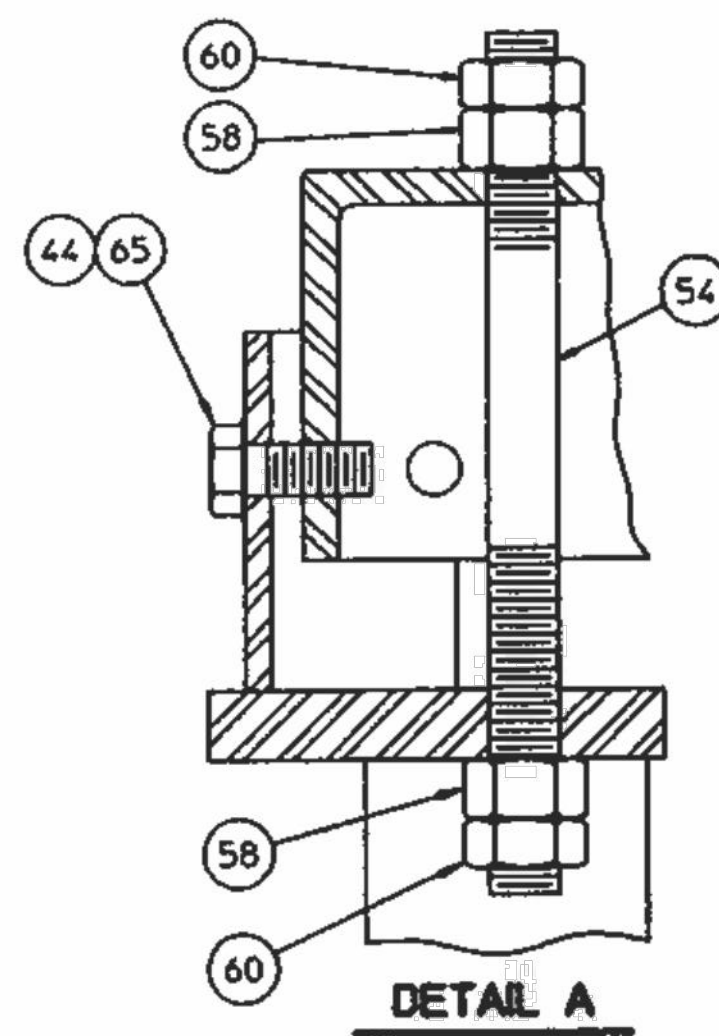
PIECE MARK	NO. RECD.	MATERIAL	DESCRIPTION / REMARKS	TOTAL WEIGHT
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**HIGH STRENGTH (H.S.) BOLTS (ASTM A325) MUST BE USED WHERE SHOWN AND SPECIFIED. ASSEMBLY INSTRUCTIONS, TURN-OF-NUT METHOD.**

ALL JOINT SURFACES SHALL BE FREE OF LOOSE MILL SCALE, BURRS AND FOREIGN MATERIAL. ENOUGH BOLTS SHALL BE BROUGHT TO A "SHUG TIGHT" CONDITION TO INSURE THAT THE PARTS OF THE JOINT ARE PROPERLY COMPACTED, I.E. BROUGHT INTO FULL CONTACT WITH EACH OTHER. SHUG TIGHT SHALL BE DEFINED AS THE TIGHTNESS ATTAINED BY A FEW IMPACTS OF AN IMPACT WRENCH OR THE FULL EFFORT OF A MAN USING AN ORDINARY SPEED WRENCH. FOLLOWING THE INITIAL TIGHTENING, BOLTS SHALL BE PLACED IN ANY REMAINING HOLES IN THE CONNECTION AND BROUGHT TO SHUG TIGHTNESS. ALL BOLTS IN THE JOINT SHALL BE TIGHTENED ADDITIONALLY BY THE APPLICABLE AMOUNT OF NUT ROTATION SPECIFIED BELOW, WITH TIGHTENING PROGRESSING SYSTEMATICALLY FROM THE MOST RIGID PART OF THE JOINT TO ITS FREE EDGES.

Bolt Length (as specified from underside of head to end of nut)	Disposition of Outer Faces of Bolted Parts		
	Both faces normal to bolt axis	One face normal to bolt axis and other face staggered 120 degrees with respect to bolt axis	Both faces staggered 120 degrees with respect to bolt axis
Up to and including 4 diameters	1/2 turn	1/2 turn	2/3 turn
Over 4 diameters but not exceeding 8 diameters	1/2 turn	2/3 turn	5/6 turn

NOTE: NUT ROTATION IS ROTATION RELATIVE TO BOLT REGARDLESS OF THE ELEMENT (NUT OR BOLT) BEING TURNED. TOLERANCE ON ROTATION 30° OVER OR UNDER. FOR OTHER THAN TURN-OF-NUT METHOD, FOLLOW PROCEDURES OUTLINED IN LATEST EDITION OF THE AISC STEEL CONSTRUCTION MANUAL.



**THE INSTALLATION, OPERATION AND MAINTENANCE INSTRUCTIONS MANUAL MUST BE STUDIED PRIOR TO STARTING ERECTION OF THIS EQUIPMENT.**

- NOTES**
- ALL ITEMS CALLED OUT ON THIS DRAWING ARE IDENTIFIED ON PARTS LIST 125548D51
  - FOR ERECTION OF RAKE ARMS, BLADES, SQUEEGEES, SUCTION PIPING AND ARM TO CAGE CONNECTION SEE DRAWING 25548D54
  - FOR ERECTION OF SKIMMING MECHANISM SEE DRAWING 25548D56
  - FOR ERECTION OF PLATFORM, WALKWAY AND HANDRAIL SEE DRAWING 25548D52
  - FOR ERECTION OF FEEDWELL, SEE DRAWING 25548D53
  - FOR ERECTION OF ANTI-ROTATION BAVFFLE SEE DWG 25548D57
  - WORK THIS DWG WITH SHEET 2 OF 2

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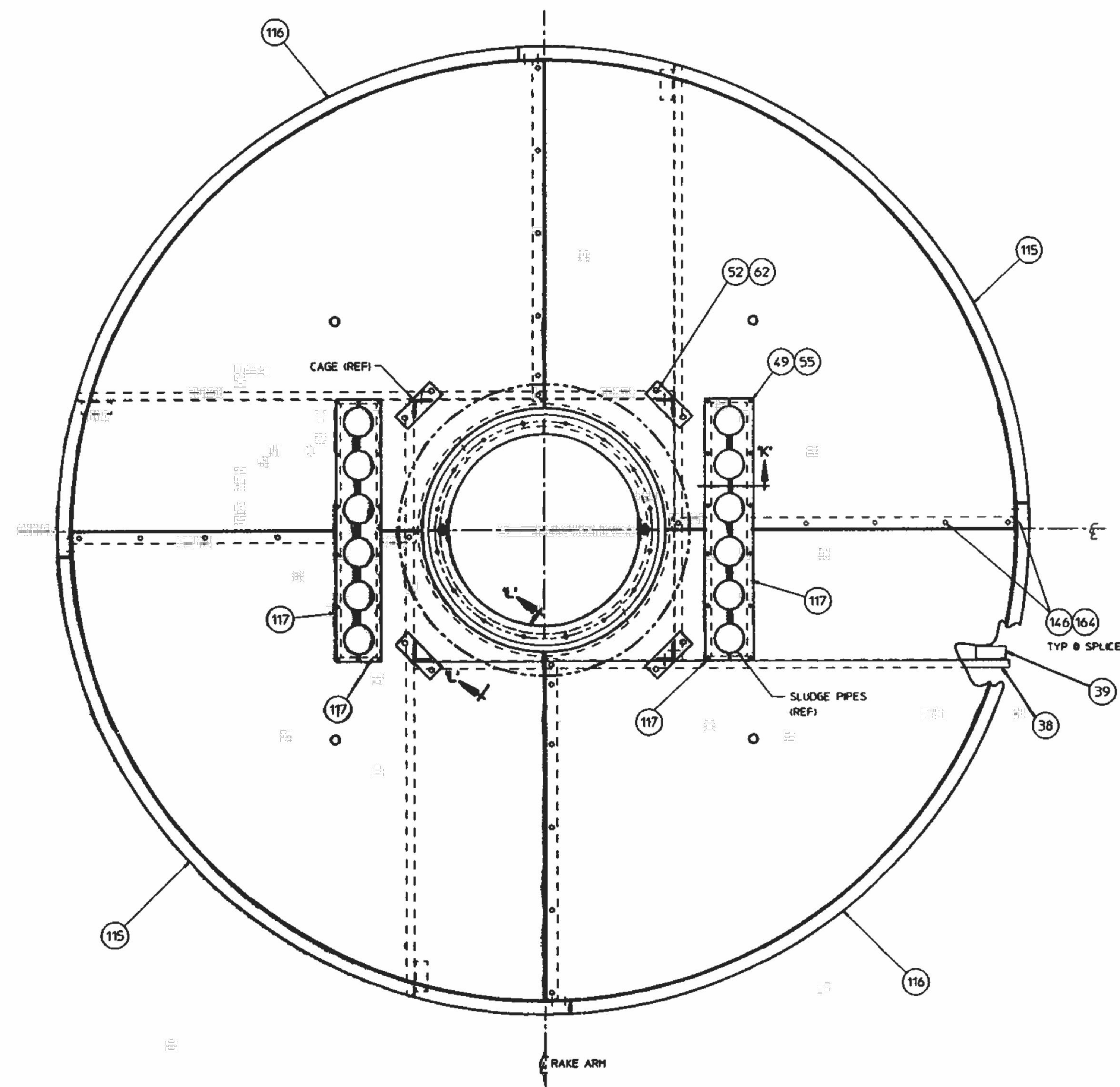
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DATE	10-6-97	<b>GENERAL ERECTION</b>		A.D.N.
DRAWN	ABS	<b>'C3S' CLARIFIER</b>		SHEET 1 OF 2
CHECKD	MCN	<b>C60 DRIVE</b>		DWG No. 25548D51
APPR	RW			REV A

REVISION	BY	DATE
INITIAL RELEASE		

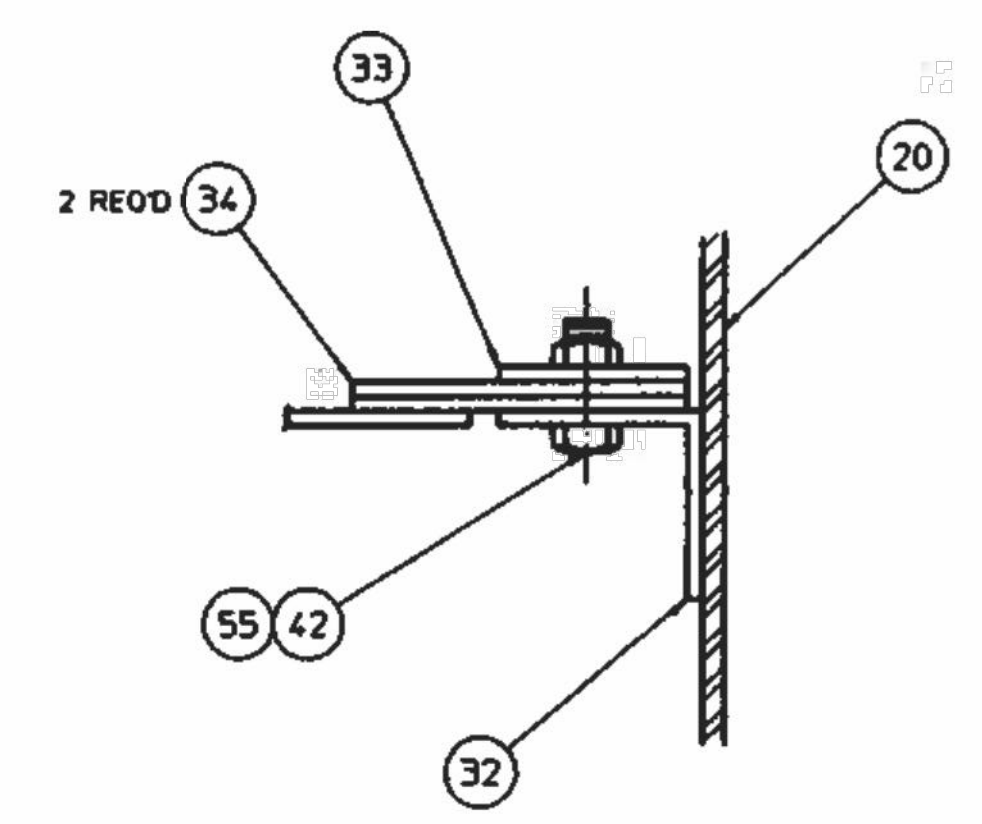
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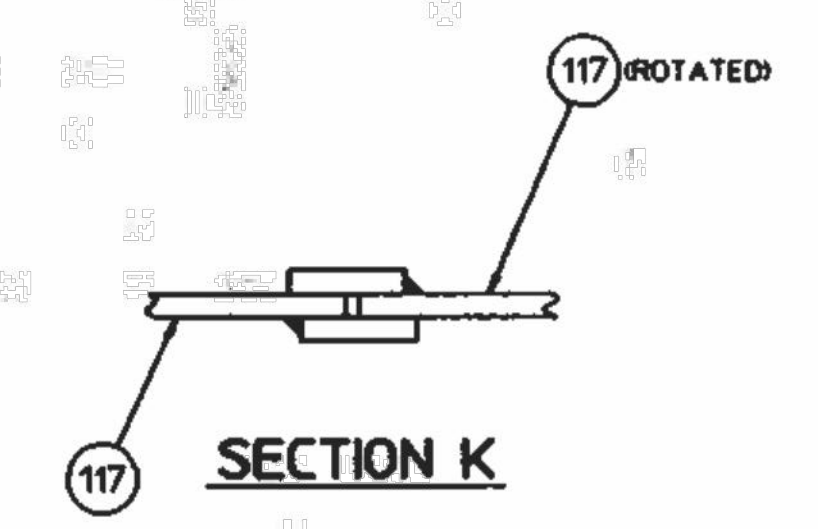
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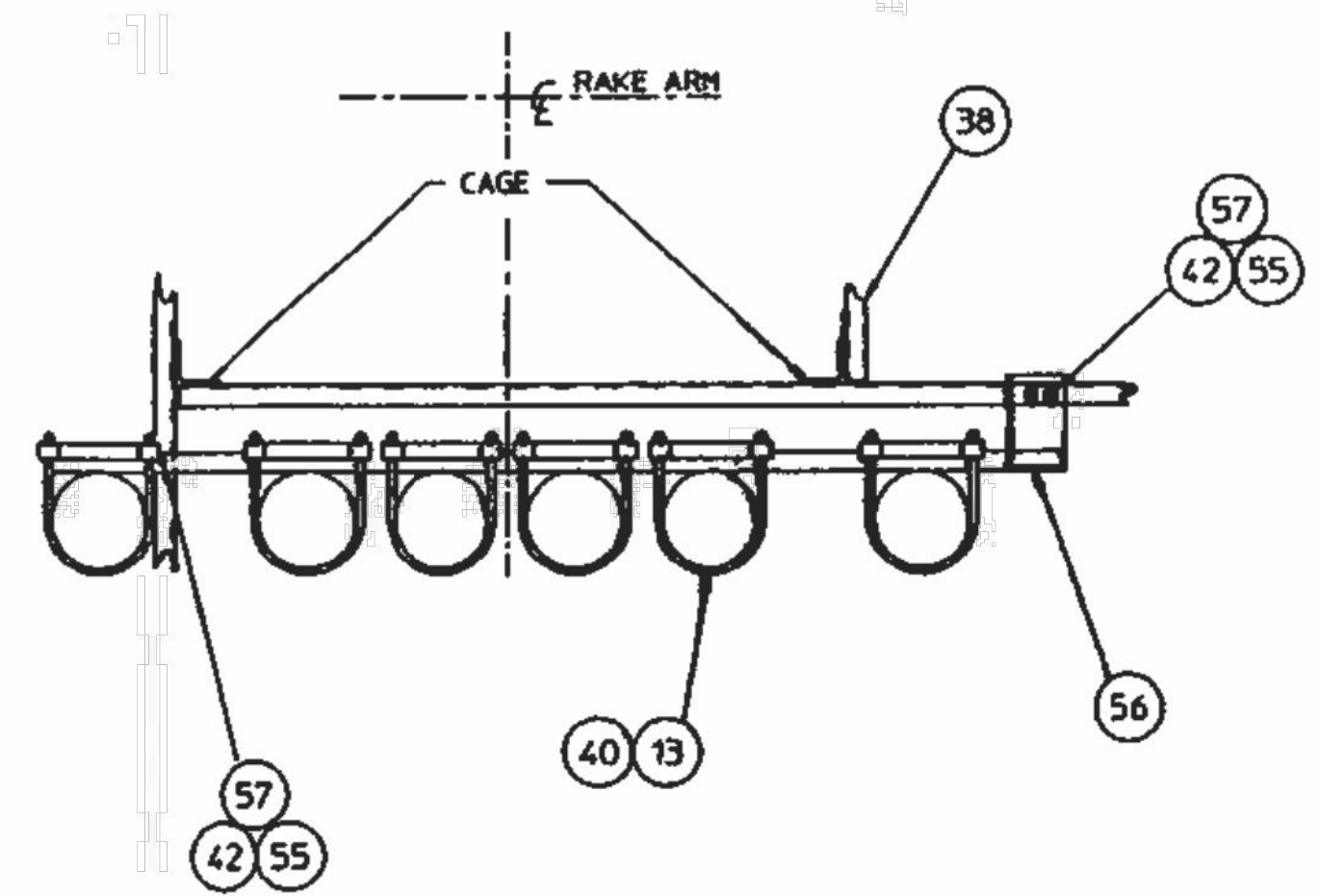
DISPERSION WELL PLAN VIEW  
SECTION B-B



SECTION L-L



SECTION K

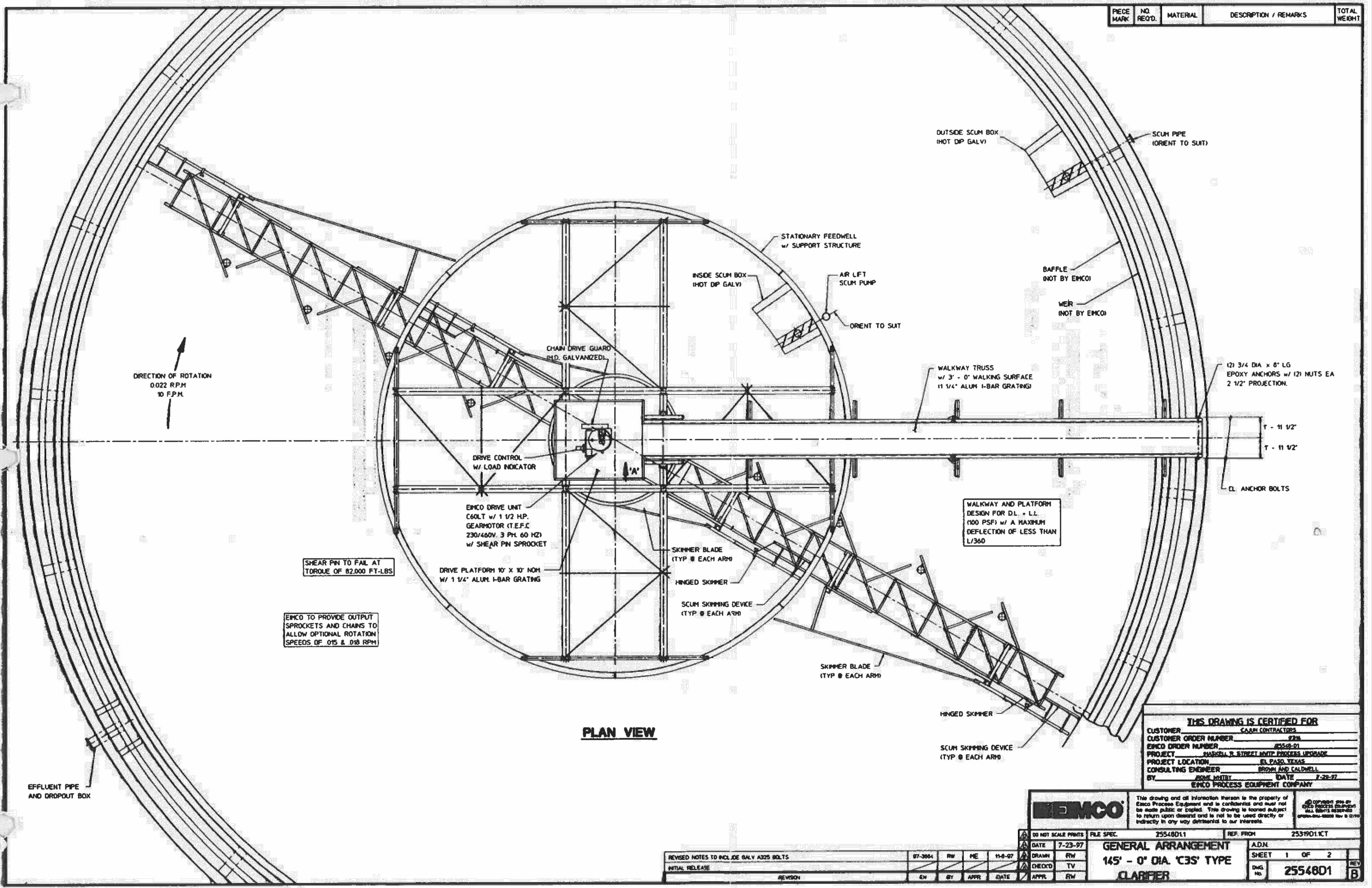


DETAIL M

Drawing File: X:\2019\6922\19\03\_DSSA\01\_DWG\050\_Civil\SPH-D2-6922.dwg (esanchez) 5/2/2020 02:41:11

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	DO NOT SCALE PRINTS	FILE SPEC. 25548D512	SHEET 2 OF 2	
REF 2548D512	A.D.N.	DWG. No.	25548D51	REV. A

PIECE MARK	NO. REQ'D.	MATERIAL	DESCRIPTION / REMARKS	TOTAL WEIGHT
------------	------------	----------	-----------------------	--------------



SHEAR PIN TO FAIL AT TORQUE OF 82,000 FT-LBS

EMCO TO PROVIDE OUTPUT SPROCKETS AND CHAINS TO ALLOW OPTIONAL ROTATION SPEEDS OF 015 & 018 RPM

**THIS DRAWING IS CERTIFIED FOR**

CUSTOMER	CALAM CONTRACTORS
CUSTOMER ORDER NUMBER	9226
EMCO ORDER NUMBER	05508-01
PROJECT	MARSHALL STREET WWTP PROCESS UPGRADE
PROJECT LOCATION	EL PASO, TEXAS
CONSULTING ENGINEER	BROWN AND CALDWELL
BY	ADRIE HINTON
DATE	7-28-97
EMCO PROCESS EQUIPMENT COMPANY	

**EMCO**

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05508-01-0000 Rev B (1/96)

DO NOT SCALE PRINTS	FILE SPEC.	25548D11	REF. FROM	25319D1.KCT
DATE	7-23-97	<b>GENERAL ARRANGEMENT</b>		
DRAWN	RW	145' - 0" DIA. 'C3S' TYPE		
CHECKED	TV	CLARIFIER		
APPR.	RW	A.D.N.	SHEET 1 OF 2	
		DWG. NO.	25548D1	
		REV.	B	

Drawing File: X:\2019\6922-19\03\_DSSA\01\_DWG\050\_Civil\SPH-07-6922.dwg (esanchez) 5/7/2020 05:25

ADDENDUM NO. 1

JULY 23, 2020

HASKELL STREET WWTP SECONDARY CLARIFIERS  
SPLITTER BOX 36-INCH SLUICE GATES REPLACEMENT  
BID NUMBER 35520

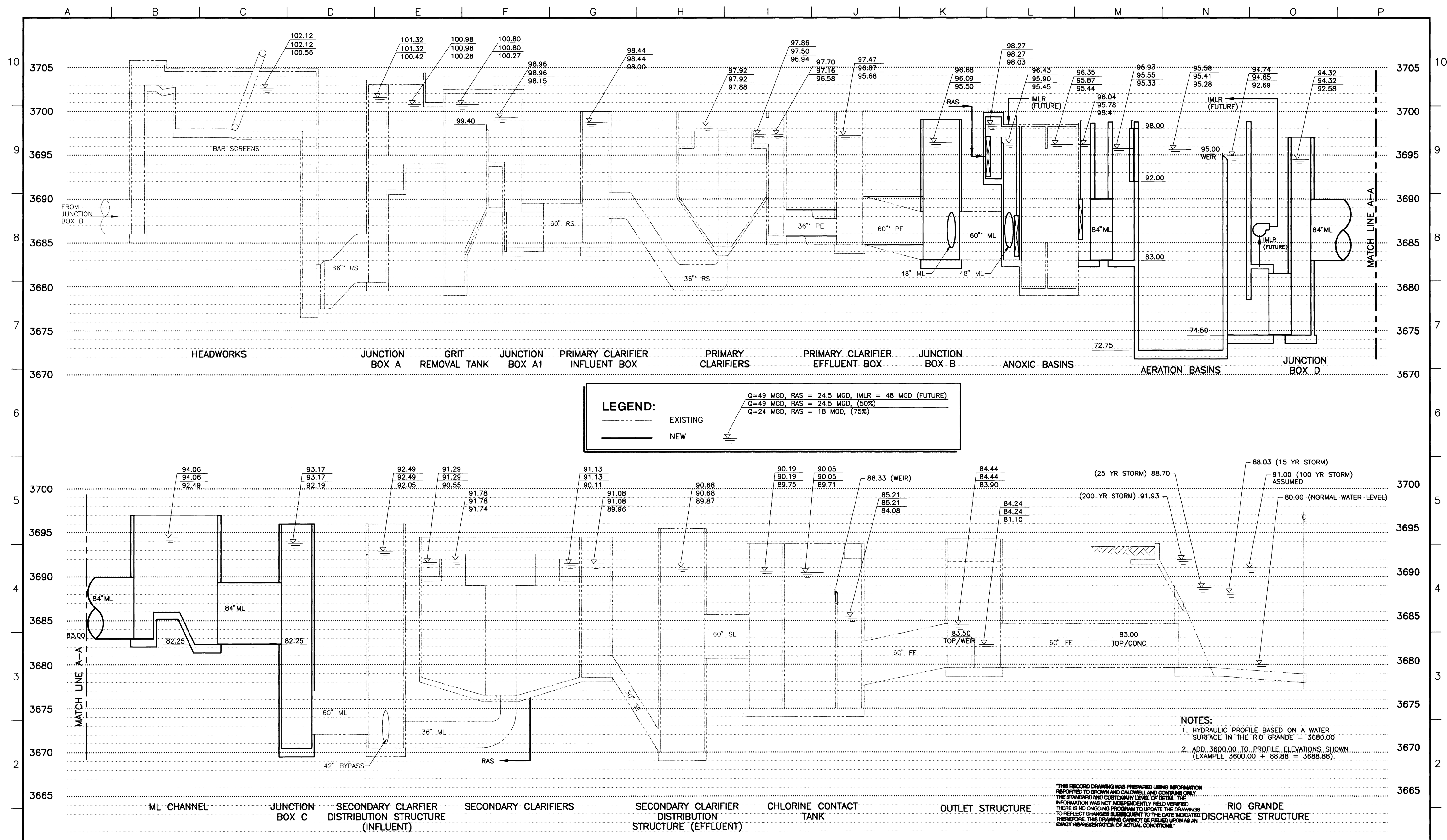
RECORD DRAWINGS FOR MIXED LIQUOR (ML) CHANNEL

9 DRAWINGS TOTAL

- G5 - HYDRAULIC PROFILE (SHOWS OPERATING WATER LEVELS)
- C34 - YARD PIPING (PLAN VIEW OF ML CHANNEL)
- C35 - YARD PIPING (PLAN VIEW OF ML CHANNEL)
- C39 - YARD PIPING (SECTIONS OF ML CHANNEL)
- S251 - ML CHANNEL STRUCTURAL PLAN VIEW BOTTOM
- S252 - ML CHANNEL STRUCTURAL PLAN VIEW TOP
- S253 - ML CHANNEL STRUCTURAL SECTIONS
- S258 - ML CHANNEL STRUCTURAL SECTIONS
- S259 - ML CHANNEL STRUCTURAL, SECTION SHOWING CHANNEL & 7'-0" PIPE

NOT FOR CONSTRUCTION  
Construction Documents are to be  
updated as per discussion with El Paso  
Water on 5/11/22.

Drawing File: X:\2019\6922\19\03\_DSGN\01\_DWG\050\_Civil\ADD-A2-6922.dwg (searcher)  
 7/23/2020 8:49:54  
 G:\363005\_09-27-96\_JerryA



**LEGEND:**

- - - - - EXISTING  
 ——— NEW

Q=49 MGD, RAS = 24.5 MGD, IMLR = 48 MGD (FUTURE)  
 Q=49 MGD, RAS = 24.5 MGD, (50%)  
 Q=24 MGD, RAS = 18 MGD, (75%)

**NOTES:**

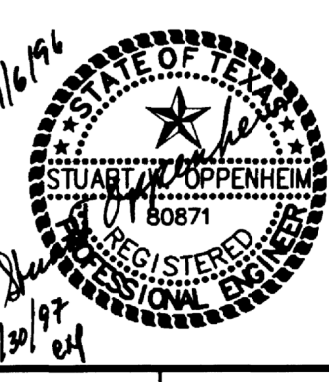
- HYDRAULIC PROFILE BASED ON A WATER SURFACE IN THE RIO GRANDE = 3680.00
- ADD 3600.00 TO PROFILE ELEVATIONS SHOWN (EXAMPLE 3600.00 + 88.88 = 3688.88).

THIS RECORD DRAWING WAS PREPARED USING INFORMATION REPORTED TO BROWN AND CALDWELL AND CONTAINS ONLY THE STANDARD AND CUSTOMARY LEVEL OF DETAIL. THE INFORMATION WAS NOT INDEPENDENTLY FIELD VERIFIED. THERE IS NO ONGOING PROGRAM TO UPDATE THE DRAWINGS TO REFLECT CHANGES SUBSEQUENT TO THE DATE INDICATED THEREFORE, THIS DRAWING CANNOT BE RELIED UPON AS AN EXACT REPRESENTATION OF ACTUAL CONDITIONS.

**BROWN AND CALDWELL**  
 EL PASO, TEXAS

SUBMITTED: *Stuart Oppenheim* DATE: 11/6/96  
 APPROVED: *Samuel Stambor* DATE: 11/6/96  
 APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_

LINE IS 2 INCHES AT FULL SIZE (IF NOT 2" - SCALE ACCORDINGLY)  
 FILE 1363  
 DRAWN GA  
 DESIGNED SWO  
 CHECKED RNW  
 CHECKED SWO



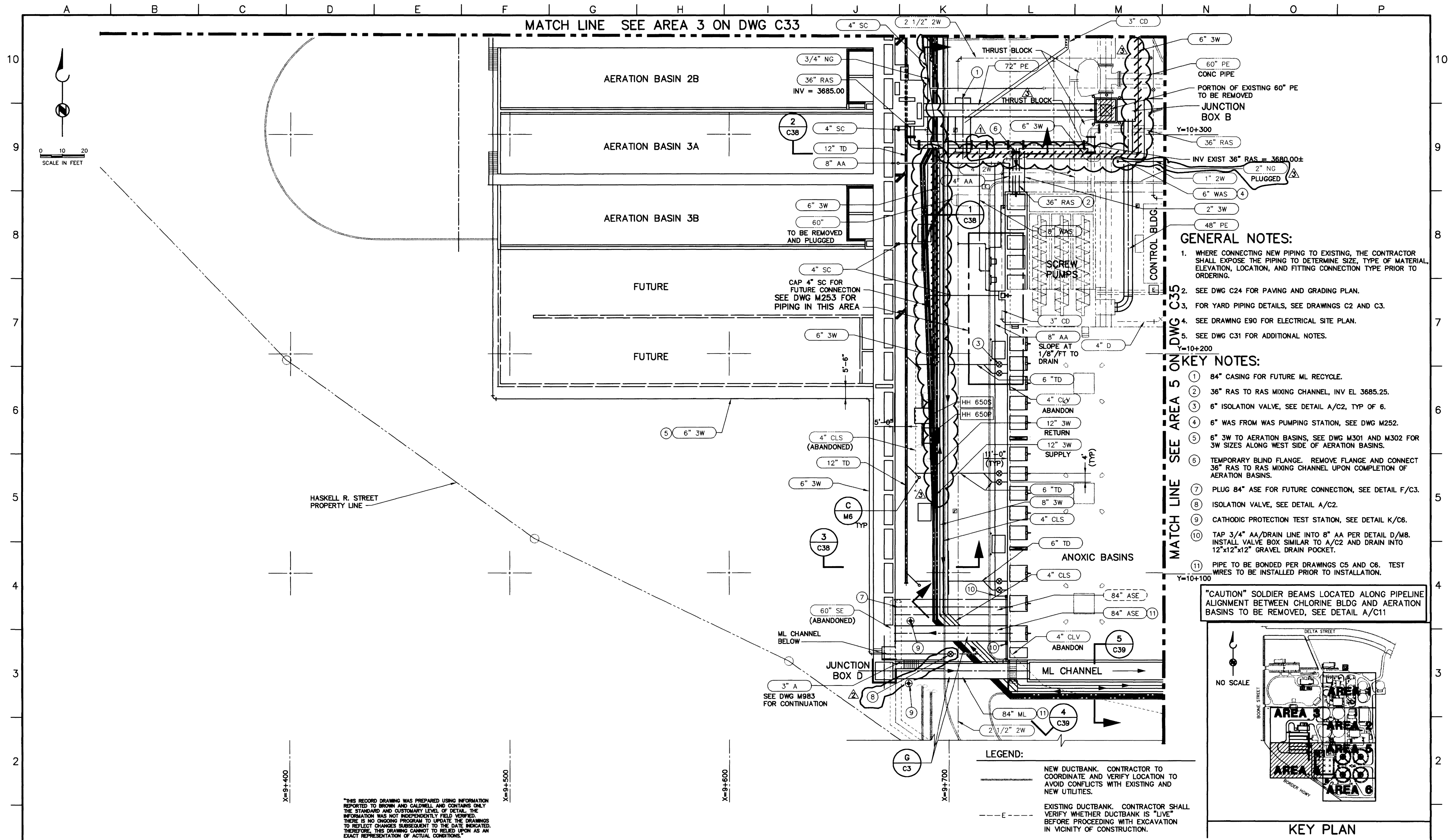
REVISIONS				
ZONE	REV.	DESCRIPTION	BY	DATE

**EL PASO WATER UTILITIES PUBLIC SERVICE BOARD**  
 HASKELL R. STREET WASTEWATER TREATMENT PLANT  
**PROCESS UPGRADE CONTRACT IV-B**

**HYDRAULIC PROFILE**

SCALE  
 HORIZ: NONE  
 VERT: 1:5  
 DRAWING NUMBER  
**G5**  
 SHEET NUMBER  
**6**

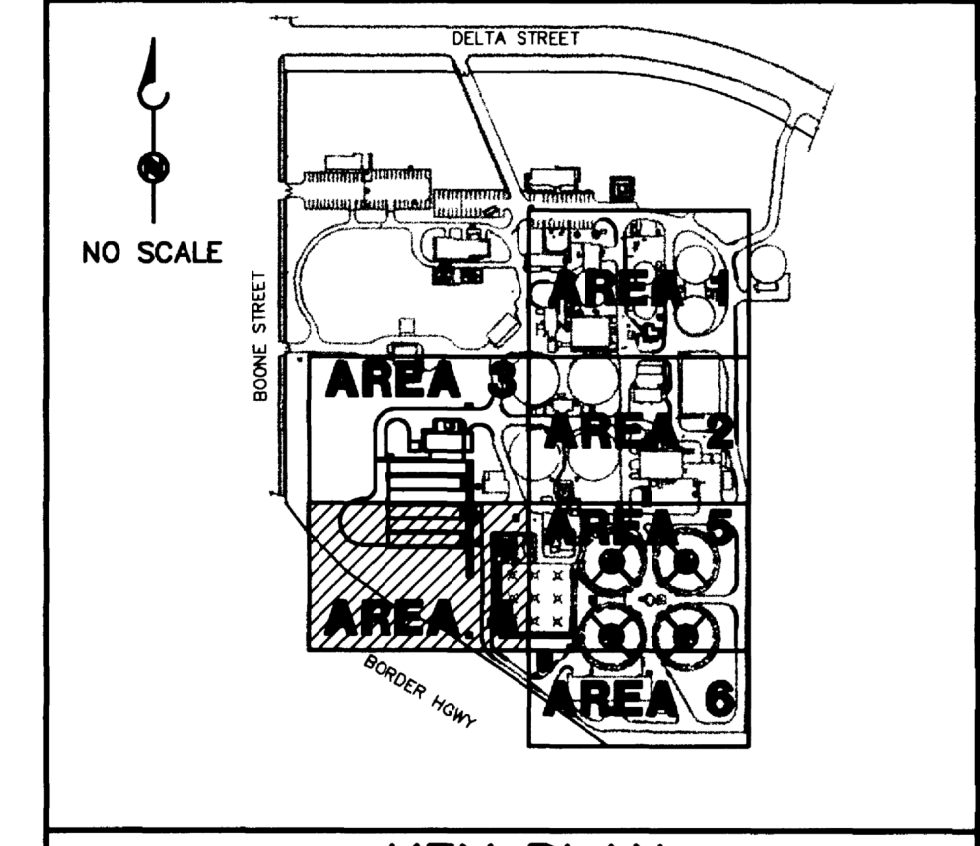
MATCH LINE SEE AREA 3 ON DWG C33



- GENERAL NOTES:**
- WHERE CONNECTING NEW PIPING TO EXISTING, THE CONTRACTOR SHALL EXPOSE THE PIPING TO DETERMINE SIZE, TYPE OF MATERIAL, ELEVATION, LOCATION, AND FITTING CONNECTION TYPE PRIOR TO ORDERING.
  - SEE DWG C24 FOR PAVING AND GRADING PLAN.
  - FOR YARD PIPING DETAILS, SEE DRAWINGS C2 AND C3.
  - SEE DRAWING E90 FOR ELECTRICAL SITE PLAN.
  - SEE DWG C31 FOR ADDITIONAL NOTES.

- KEY NOTES:**
- 84" CASING FOR FUTURE ML RECYCLE.
  - 36" RAS TO RAS MIXING CHANNEL, INV EL 3685.25.
  - 6" ISOLATION VALVE, SEE DETAIL A/C2, TYP OF 6.
  - 6" WAS FROM WAS PUMPING STATION, SEE DWG M252.
  - 6" 3W TO AERATION BASINS, SEE DWG M301 AND M302 FOR 3W SIZES ALONG WEST SIDE OF AERATION BASINS.
  - TEMPORARY BLIND FLANGE. REMOVE FLANGE AND CONNECT 36" RAS TO RAS MIXING CHANNEL UPON COMPLETION OF AERATION BASINS.
  - PLUG 84" ASE FOR FUTURE CONNECTION, SEE DETAIL F/C3.
  - ISOLATION VALVE, SEE DETAIL A/C2.
  - CATHODIC PROTECTION TEST STATION, SEE DETAIL K/C6.
  - TAP 3/4" AA/DRAIN LINE INTO 8" AA PER DETAIL D/M8. INSTALL VALVE BOX SIMILAR TO A/C2 AND DRAIN INTO 12"x12"x12" GRAVEL DRAIN POCKET.
  - PIPE TO BE BONDED PER DRAWINGS C5 AND C6. TEST WIRES TO BE INSTALLED PRIOR TO INSTALLATION.

"CAUTION" SOLDIER BEAMS LOCATED ALONG PIPELINE ALIGNMENT BETWEEN CHLORINE BLDG AND AERATION BASINS TO BE REMOVED, SEE DETAIL A/C11



**LEGEND:**

— NEW DUCTBANK. CONTRACTOR TO COORDINATE AND VERIFY LOCATION TO AVOID CONFLICTS WITH EXISTING AND NEW UTILITIES.

- - - EXISTING DUCTBANK. CONTRACTOR SHALL VERIFY WHETHER DUCTBANK IS "LIVE" BEFORE PROCEEDING WITH EXCAVATION IN VICINITY OF CONSTRUCTION.

"THIS RECORD DRAWING WAS PREPARED USING INFORMATION REPORTED TO BROWN AND CALDWELL AND CONTAINS ONLY THE STANDARD AND CUSTOMARY LEVEL OF DETAIL. THE INFORMATION WAS NOT INDEPENDENTLY FIELD VERIFIED. THERE IS NO ONGOING PROGRAM TO UPDATE THE DRAWINGS TO REFLECT CHANGES SUBSEQUENT TO THE DATE INDICATED. THEREFORE, THIS DRAWING CANNOT TO BE RELIED UPON AS AN EXACT REPRESENTATION OF ACTUAL CONDITIONS."

**BROWN AND CALDWELL**  
 EL PASO, TEXAS

SUBMITTED: \_\_\_\_\_ DATE: \_\_\_\_\_  
 PROJECT MANAGER

APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_  
 BROWN AND CALDWELL

APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_

LINE IS 2 INCHES AT FULL SIZE (IF NOT 2" SCALE ACCORDINGLY)

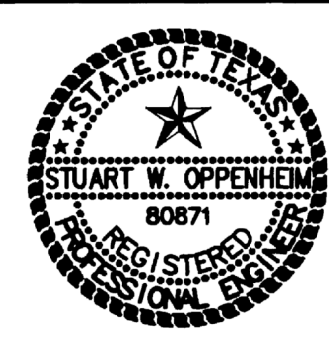
FILE 1363

DRAWN GA

DESIGNED FS/GA

CHECKED RNW

CHECKED SWO/FS



REVISIONS					
ZONE	REV.	DESCRIPTION	BY	DATE	APP.
K/9	1	MOVED 8" WAS TEE TO 36" RAS LINE PER ADDENDUM 3	FS	12/96	SWO
K/2	2	CLARIFICATION	FS	3/97	RG
N/A	3	PER AS-BUILT	NC	6/99	FS

**EL PASO WATER UTILITIES PUBLIC SERVICE BOARD**

HASKELL R. STREET WASTEWATER TREATMENT PLANT

**PROCESS UPGRADE CONTRACT IV-B**

SCALE AS SHOWN

DRAWING NUMBER **C34**

SHEET NUMBER **29**

**AREA 4**

Drawing File: X:\2019\6922\19\03\_DSGA\01\_DWG\C30\_Civil\Sheet-02-6922.dwg (gsanchez) 5/2/2020 02:41:11

MATCH LINE SEE AREA 2 ON DWG C32

GENERAL NOTES:

- WHERE CONNECTING NEW PIPING TO EXISTING, THE CONTRACTOR SHALL EXPOSE THE PIPING TO DETERMINE SIZE, TYPE OF MATERIAL, ELEVATION, LOCATION, AND FITTING CONNECTION TYPE PRIOR TO ORDERING.
- SEE DWG C25 FOR PAVING AND GRADING PLAN.
- SEE DRAWING E90 FOR ELECTRICAL SITE PLAN.
- SEE DRAWING C31 FOR ADDITIONAL NOTES.

Y=10+00

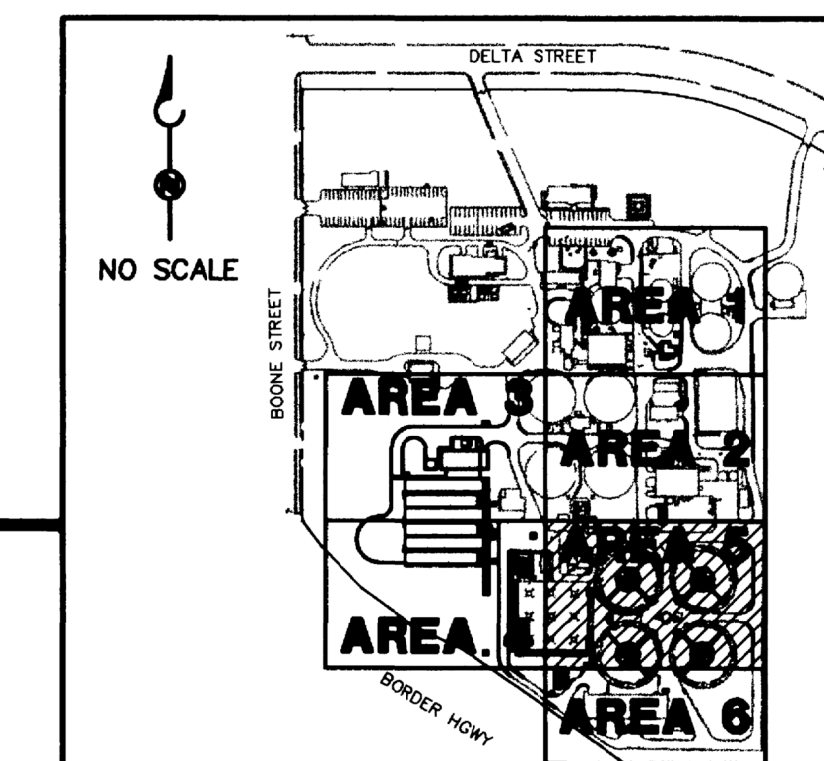
KEY NOTES:

- PORTION OF EXISTING 24" RAS AND METER INSIDE VAULT TO BE REMOVED. INSTALL NEW CHLORINE DIFFUSER, SEE DWG C51 FOR DETAILS.
  - FIELD CONNECT 6" WAS TO EXISTING 6" WAS.
  - 60" PIPE INSIDE JUNCTION BOX C TO BE REMOVED. SEE DRAWING S982 FOR DETAIL.
  - 60" PIPE TO BE REMOVED AND PLUGGED AT BOTH ENDS PER DETAIL F/C3. EXIST 60" PIPE BENDS ARE CONCRETE THRUST BLOCKS. CONTRACTOR SHALL REMOVE CONCRETE THRUST BLOCKS AS NECESSARY FOR NEW CONSTRUCTION.
  - CATHODIC PROTECTION TEST STATION, SEE DETAIL K/C6.
  - THRUST BLOCK. CONTRACTOR SHALL VERIFY LOCATION AND REMOVE AS NECESSARY FOR NEW CONSTRUCTION.
  - ISOLATION VALVE, SEE DETAIL A/C2.
  - PLUG 6" SSC.
- Y=9+900
- CONTRACTOR SHALL MAINTAIN SPRAY WATER PUMP AND PIPING IN SERVICE UNTIL CLARIFIER 3 HAS BEEN DECOMMISSIONED FOR MODIFICATION. AFTER THAT MILESTONE ANY TEMPORARY PIPING AND ELECTRICAL SERVICE MAY BE REMOVED. PUMP SHALL BE SALVAGED TO OWNER.
  - PLUG EXISTING 2" 2W PIPE, AND ABANDON EXISTING 2W PIPE SOUTH OF PLUG.
  - NEW HOSE STATION TO MATCH EXISTING (ABANDONED).
  - END PLUG, SEE DETAIL F/C3.
  - PIPE TO BE BONDED PER DRAWINGS C5 AND C6. TEST WIRES PRIOR TO INSTALLATION.
  - LANDFILL MATERIALS ENCOUNTERED SHALL BE REMOVED IN THEIR ENTIRETY IN ACCORDANCE WITH GEOTECH REPORT DATED JAN 3, 1996.
  - PIPE SHALL BE RESTRAINED PER DETAIL C/C2.

LEGEND:

- NEW DUCTBANK. CONTRACTOR TO COORDINATE AND VERIFY LOCATION TO AVOID CONFLICTS WITH EXISTING AND NEW UTILITIES.
- EXISTING DUCTBANK. CONTRACTOR SHALL VERIFY WHETHER DUCTBANK IS "LIVE" BEFORE PROCEEDING WITH EXCAVATION IN VICINITY OF CONSTRUCTION.

Y=9+800



KEY PLAN

SCALE AS SHOWN

DRAWING NUMBER

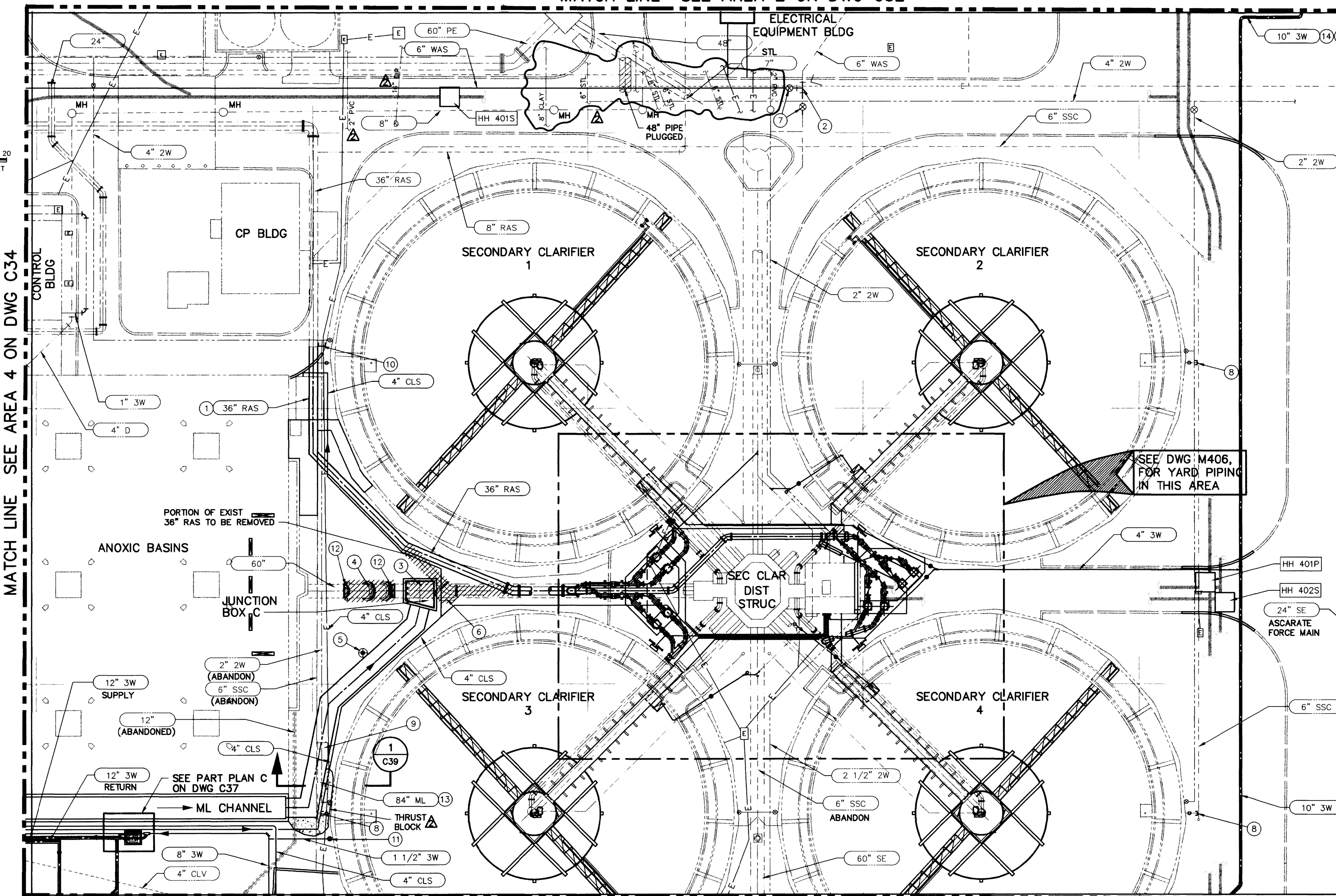
**C35**

SHEET NUMBER

**30**

YARD PIPING

AREA 5



MATCH LINE SEE AREA 6 ON DWG C36

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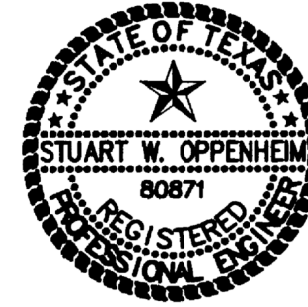
**BROWN AND CALDWELL**

EL PASO, TEXAS

SUBMITTED: \_\_\_\_\_ DATE: \_\_\_\_\_  
 PROJECT MANAGER  
 APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_  
 BROWN AND CALDWELL  
 APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_

LINE IS 2 INCHES AT FULL SIZE (IF NOT 2"=SCALE ACCORDINGLY)

FILE 1363  
 DRAWN GA  
 DESIGNED SWO/GA  
 CHECKED FS  
 CHECKED SWO



REVISIONS

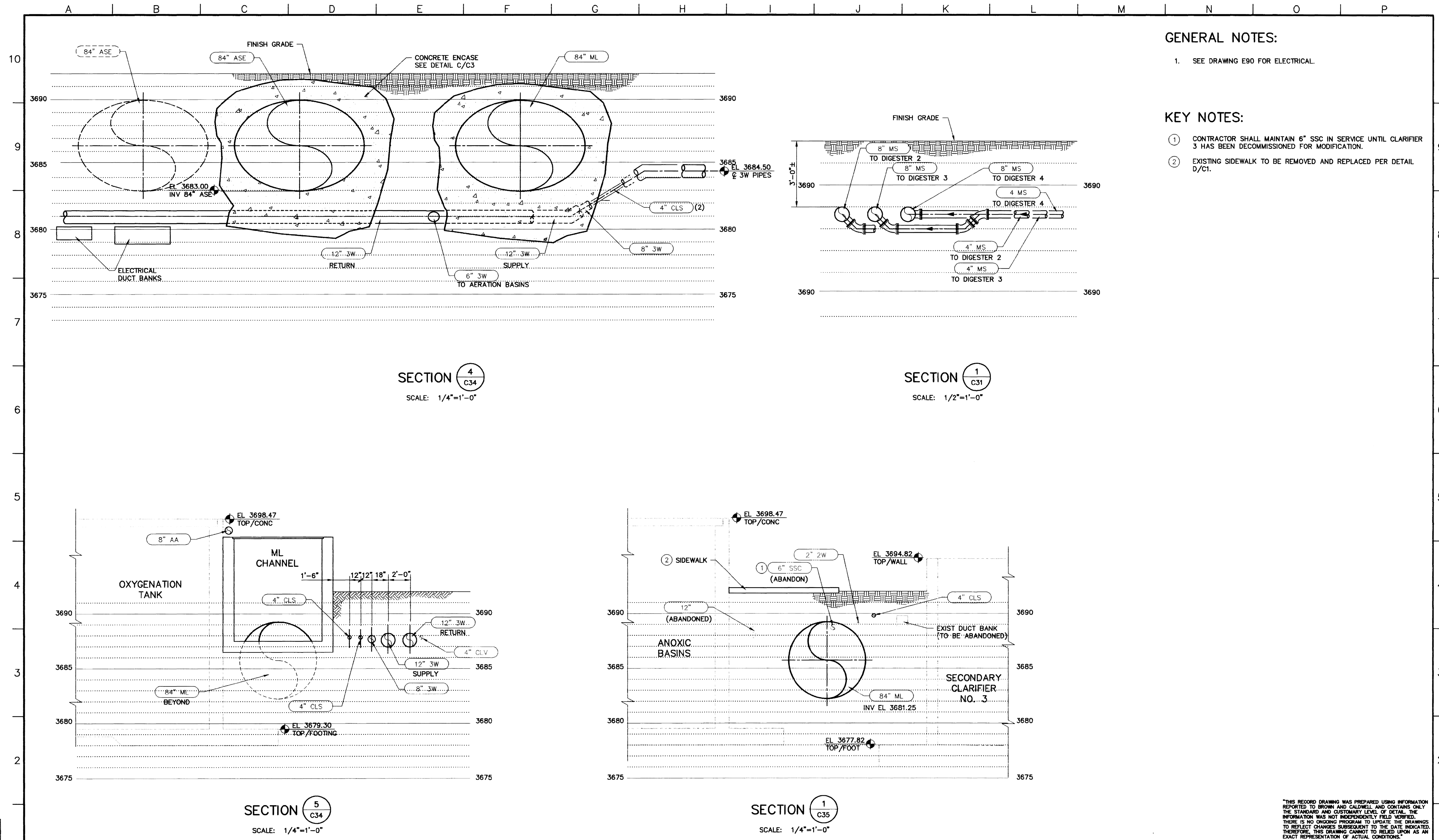
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N/A	2	PER AS-BUILTS	KB	7/97	FS



EL PASO WATER UTILITIES PUBLIC SERVICE BOARD

HASKELL R. STREET WASTEWATER TREATMENT PLANT  
**PROCESS UPGRADE CONTRACT IV-B**

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 C1363039 09-26-96 JmryA HASKIBV



- GENERAL NOTES:**
- SEE DRAWING E90 FOR ELECTRICAL.
- KEY NOTES:**
- CONTRACTOR SHALL MAINTAIN 6" SSC IN SERVICE UNTIL CLARIFIER 3 HAS BEEN DECOMMISSIONED FOR MODIFICATION.
  - EXISTING SIDEWALK TO BE REMOVED AND REPLACED PER DETAIL D/C1.

SECTION 4  
C34  
SCALE: 1/4"=1'-0"

SECTION 1  
C31  
SCALE: 1/2"=1'-0"

SECTION 5  
C34  
SCALE: 1/4"=1'-0"

SECTION 1  
C35  
SCALE: 1/4"=1'-0"

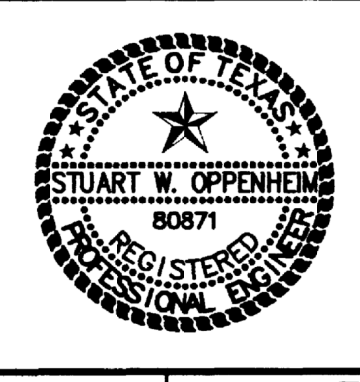
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**BROWN AND CALDWELL**  
EL PASO, TEXAS

SUBMITTED: \_\_\_\_\_ DATE: \_\_\_\_\_  
 PROJECT MANAGER  
 APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_  
 BROWN AND CALDWELL  
 APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_

LINE IS 2 INCHES AT FULL SIZE (IF NOT 2"=SCALE ACCORDINGLY)

FILE 1363  
 DRAWN GA  
 DESIGNED GA/FS  
 CHECKED FS  
 CHECKED SWO



REVISIONS				
ZONE	REV.	DESCRIPTION	BY	DATE

EL PASO **WATER UTILITIES** PUBLIC SERVICE BOARD

HASKELL R. STREET WASTEWATER TREATMENT PLANT

**PROCESS UPGRADE CONTRACT IV-B**

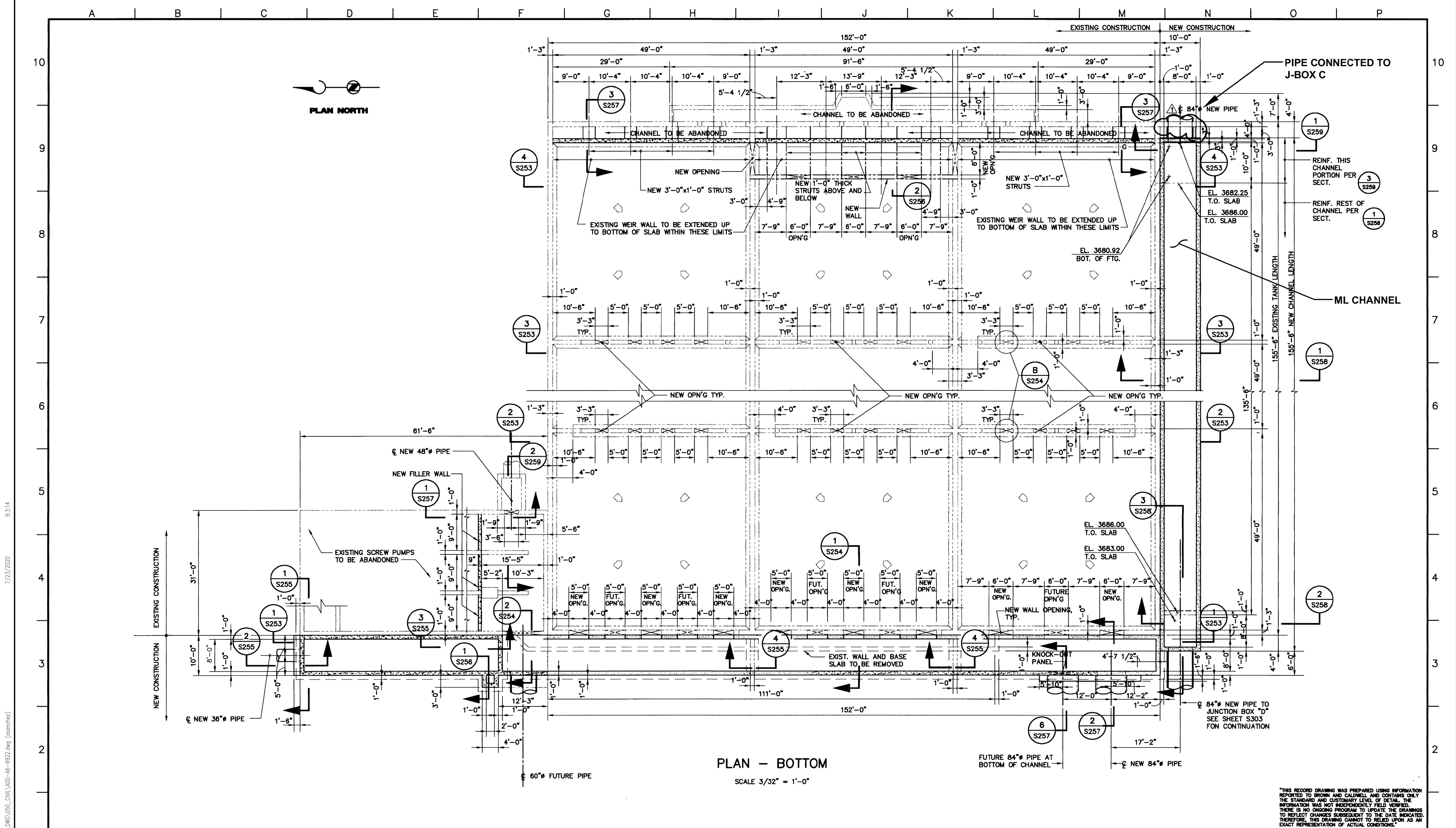
**YARD PIPING**

SCALE AS SHOWN

DRAWING NUMBER **C39**

SHEET NUMBER **34**

**SECTIONS - 2**



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**BROWN AND CALDWELL**  
 EL PASO, TEXAS  
 SUBMITTED: \_\_\_\_\_ DATE: \_\_\_\_\_  
 PROJECT MANAGER  
 APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_  
 BROWN AND CALDWELL  
 APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_

LINE IS 2 INCHES AT FULL SIZE (IF NOT 2" SCALE ACCORDINGLY)  
 FILE 1363  
 DRAWN J.J.C.  
 DESIGNED I.L.  
 CHECKED \_\_\_\_\_  
 CHECKED \_\_\_\_\_

REVISIONS					
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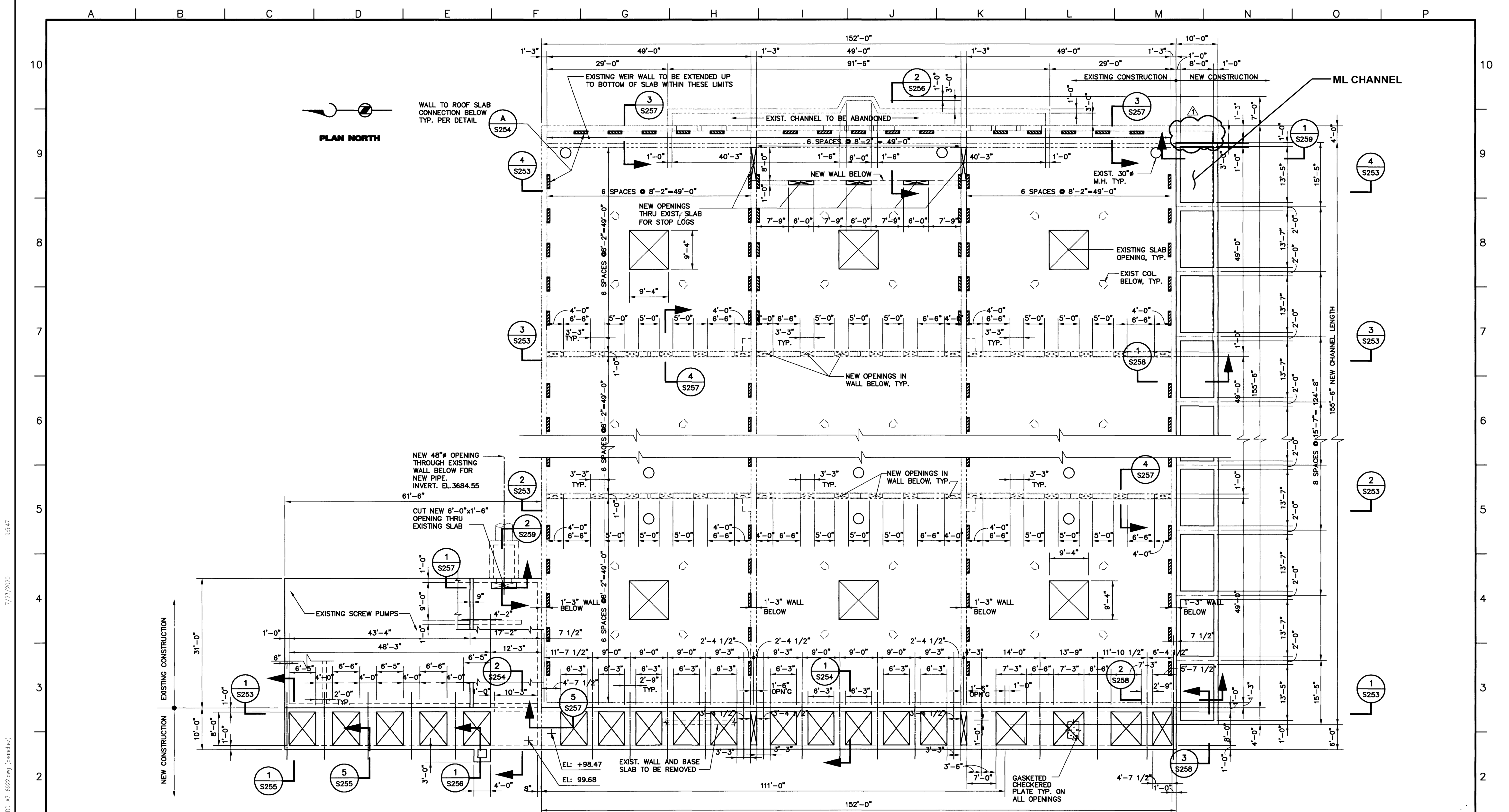
**EL PASO WATER UTILITIES PUBLIC SERVICE BOARD**  
 HASKELL R. STREET WASTEWATER TREATMENT PLANT  
**PROCESS UPGRADE CONTRACT IV-B**

**ANOXIC BASINS**  
**PLAN - BOTTOM**

SCALE AS SHOWN  
 DRAWING NUMBER **S251**  
 SHEET NUMBER **93**

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 51363251 10-08-98 A.S.





PLAN - TOP

SCALE 3/32" = 1'-0"

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**BROWN AND CALDWELL**  
 EL PASO, TEXAS

FILE 1363  
 DRAWN A.S.  
 DESIGNED I.L.  
 CHECKED  
 CHECKED

SUBMITTED: \_\_\_\_\_ DATE: \_\_\_\_\_  
 PROJECT MANAGER  
 APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_  
 BROWN AND CALDWELL  
 APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_

REVISIONS					
ZONE	REV.	DESCRIPTION	BY	DATE	APP.
N/A	1	CLARIFICATION #7	NC	5/97	FS
N/A	1	CLARIFICATION #23	NC	5/97	FS

EL PASO **WATER UTILITIES** PUBLIC SERVICE BOARD

HASKELL R. STREET  
 WASTEWATER TREATMENT PLANT

**PROCESS UPGRADE  
 CONTRACT IV-B**

**ANOXIC BASINS**

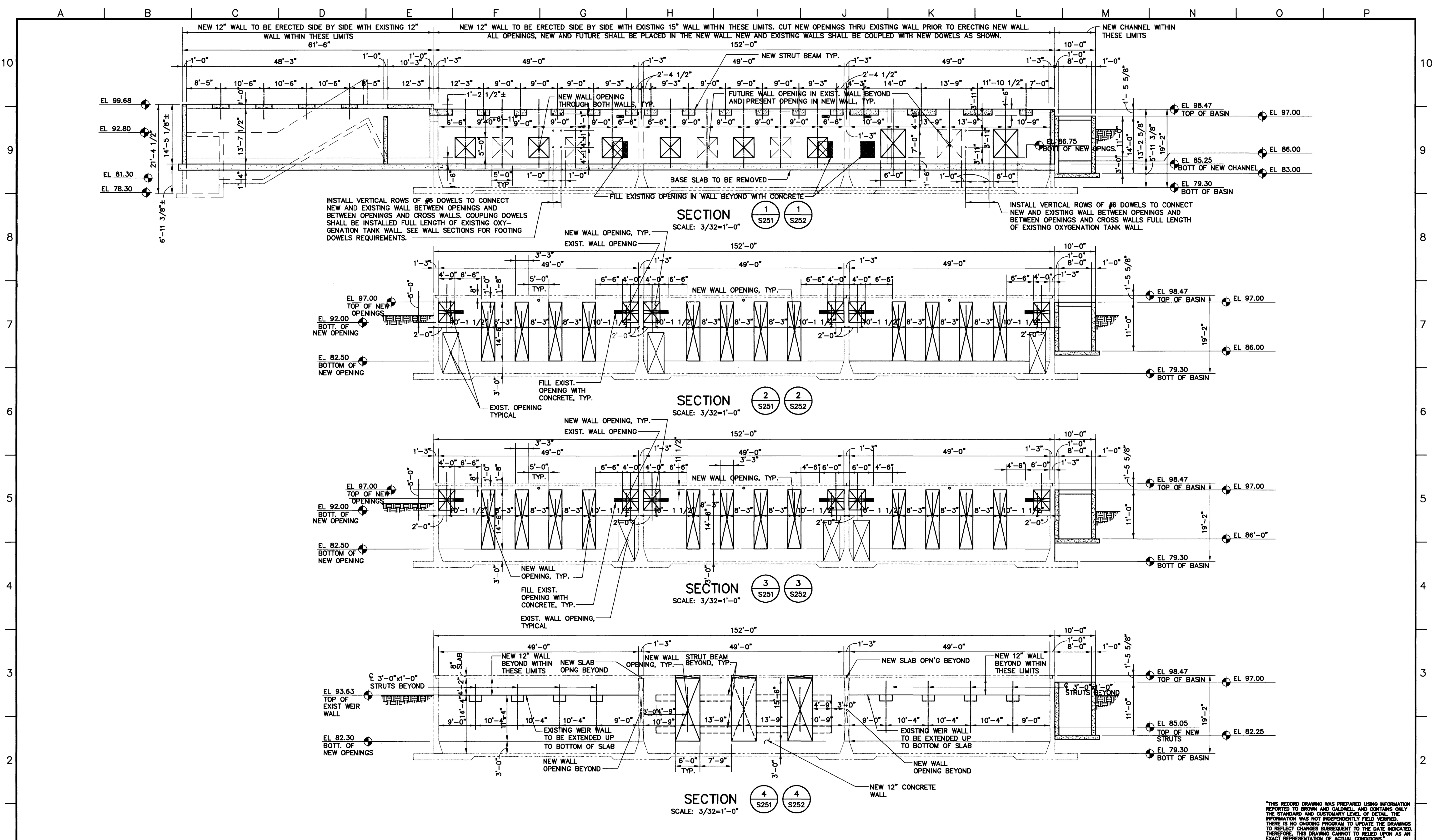
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**BROWN AND CALDWELL**  
 EL PASO, TEXAS

SUBMITTED: \_\_\_\_\_ DATE: \_\_\_\_\_  
 APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_  
 APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_

LINE IS 2 INCHES AT FULL SIZE (IF NOT 2"=SCALE ACCORDINGLY.)  
 FILE 1363  
 DRAWN J.J.C.  
 DESIGNED I.L.  
 CHECKED \_\_\_\_\_  
 CHECKED \_\_\_\_\_

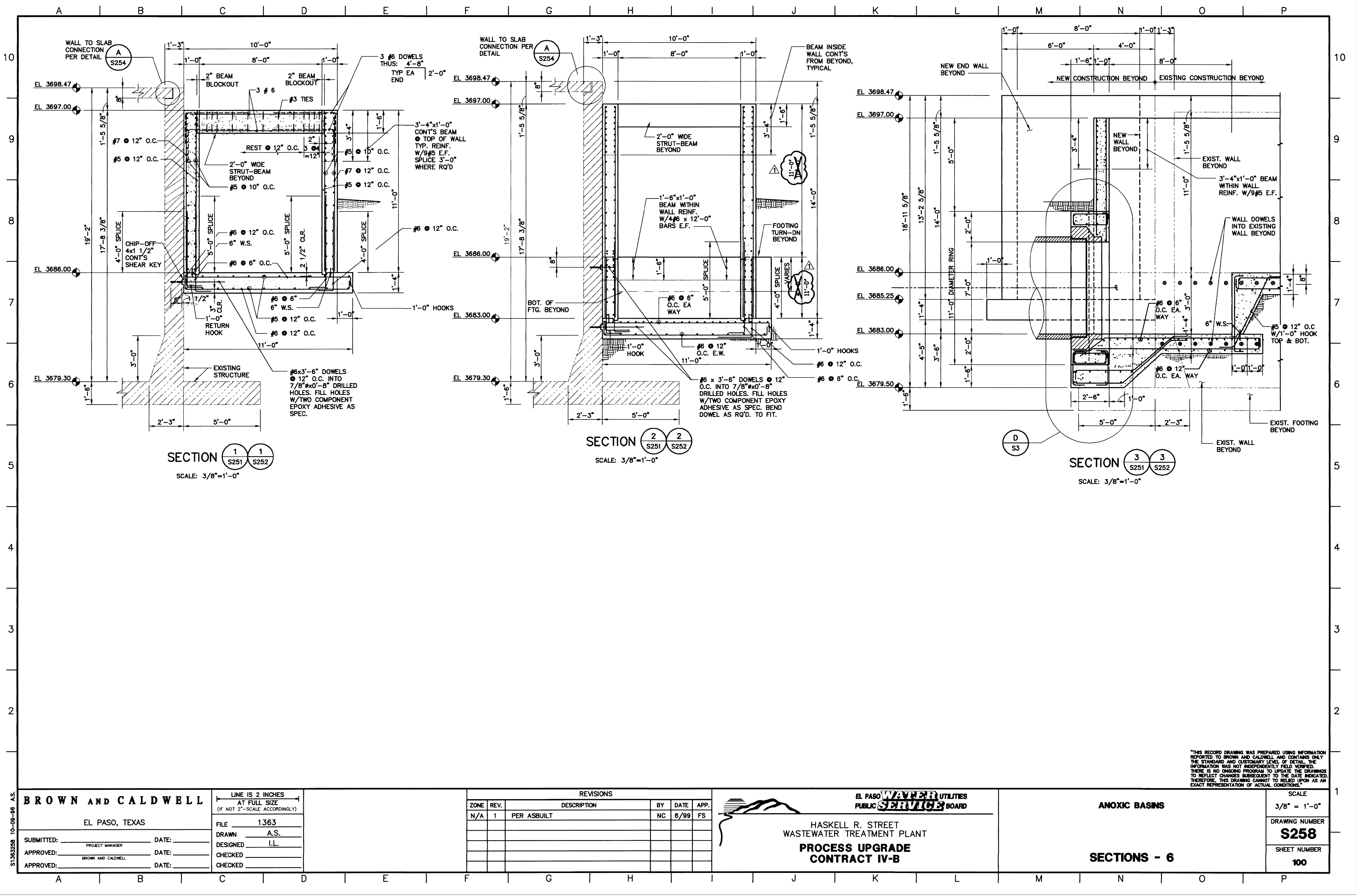
REVISIONS				
ZONE	REV.	DESCRIPTION	BY	DATE

EL PASO **WATER UTILITIES** PUBLIC SERVICE BOARD  
 HASKELL R. STREET WASTEWATER TREATMENT PLANT  
**PROCESS UPGRADE CONTRACT IV-B**

**ANOXIC BASINS**  
 SCALE AS SHOWN  
 DRAWING NUMBER **S253**  
 SHEET NUMBER **95**

SECTION 1  
 SCALE: 3/32=1'-0"

Drawing File: X:\2019\6922\19\03\_DSSA\01\_DWG\050\_CIVIL\ADD-A9-6922.dwg (osanchez) 7/23/2020 9:14:3



THIS RECORD DRAWING WAS PREPARED USING INFORMATION REPORTED TO BROWN AND CALDWELL AND CONTAINS ONLY THE STANDARD AND CUSTOMARY LEVEL OF DETAIL. THE INFORMATION WAS NOT INDEPENDENTLY FIELD VERIFIED. THERE IS NO ONGOING PROGRAM TO UPDATE THE DRAWINGS TO REFLECT CHANGES SUBSEQUENT TO THE DATE INDICATED. THEREFORE, THIS DRAWING CANNOT TO BE RELIED UPON AS AN EXACT REPRESENTATION OF ACTUAL CONDITIONS.

**BROWN AND CALDWELL**  
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 APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_

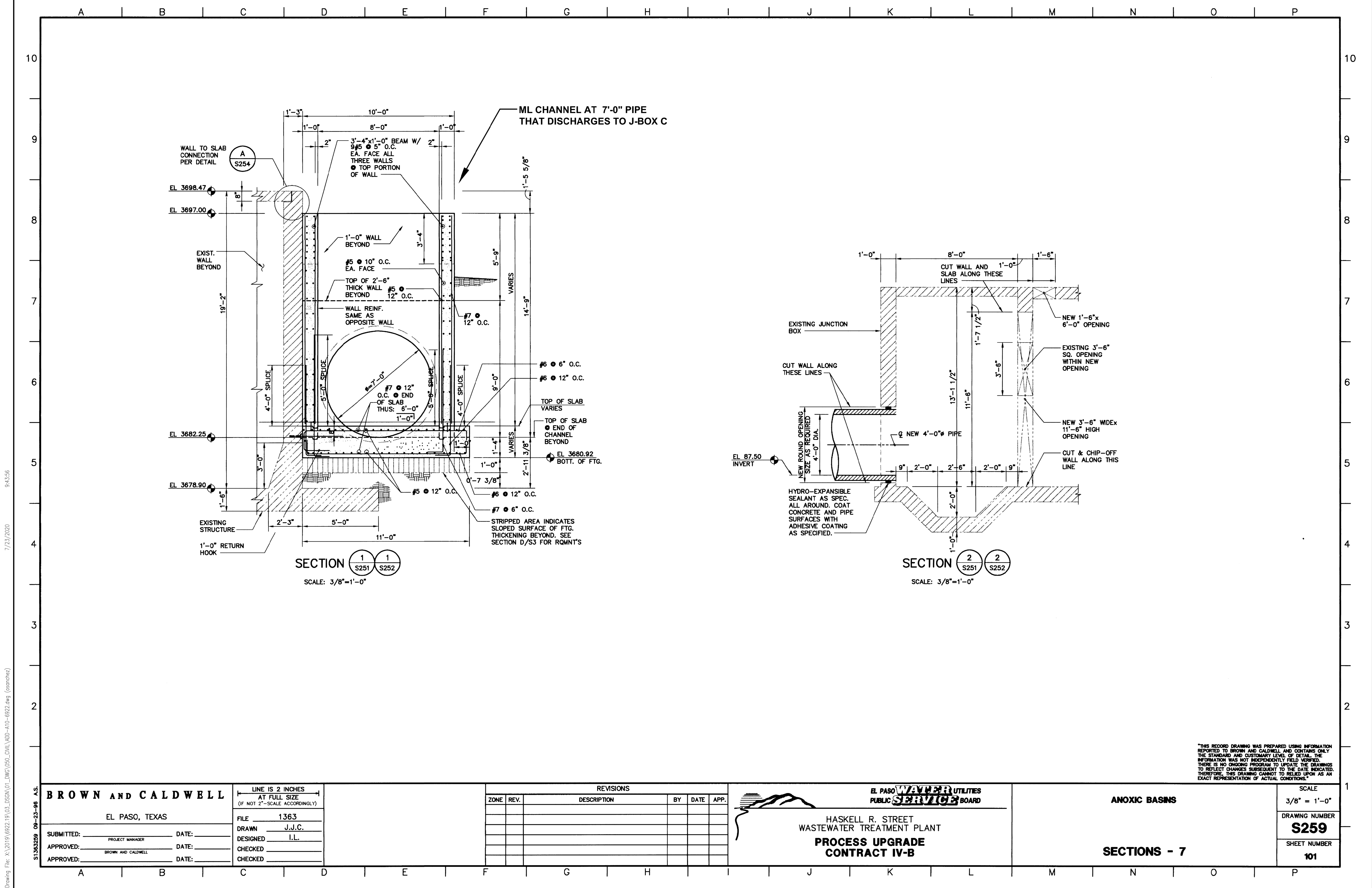
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 FILE 1363  
 DRAWN A.S.  
 DESIGNED I.L.  
 CHECKED \_\_\_\_\_  
 CHECKED \_\_\_\_\_

REVISIONS					
ZONE	REV.	DESCRIPTION	BY	DATE	APP.
N/A	1	PER ASBUILT	NC	6/99	FS

**EL PASO WATER UTILITIES PUBLIC SERVICE BOARD**  
 HASKELL R. STREET WASTEWATER TREATMENT PLANT  
**PROCESS UPGRADE CONTRACT IV-B**

**ANOXIC BASINS**  
**SECTIONS - 6**

SCALE  
 3/8" = 1'-0"  
 DRAWING NUMBER  
**S258**  
 SHEET NUMBER  
**100**



9-43:56  
 7/23/2020  
 Drawing File: X:\2019\6922\19\03\_DSGA\01\_DWG\050\_CIVIL\ADD-A10-6922.dwg (gsanchez)

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**BROWN AND CALDWELL**  
 EL PASO, TEXAS  
 SUBMITTED: \_\_\_\_\_ DATE: \_\_\_\_\_  
 APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_  
 APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_

LINE IS 2 INCHES AT FULL SIZE (IF NOT 2"=SCALE ACCORDINGLY)  
 FILE 1363  
 DRAWN J.J.C.  
 DESIGNED I.L.  
 CHECKED \_\_\_\_\_  
 CHECKED \_\_\_\_\_

REVISIONS					
ZONE	REV.	DESCRIPTION	BY	DATE	APP.

EL PASO **WATER** UTILITIES PUBLIC **SERVICE** BOARD  
 HASKELL R. STREET WASTEWATER TREATMENT PLANT  
**PROCESS UPGRADE CONTRACT IV-B**

**ANOXIC BASINS**  
**SECTIONS - 7**  
 SCALE 3/8" = 1'-0"  
 DRAWING NUMBER **S259**  
 SHEET NUMBER **101**

# IMPROVEMENT PACKAGE 2

## HASKELL R. STREET WWTP HEADWORKS ODOR CONTROL AND EFFLUENT PIPING IMPROVEMENTS

BID NUMBER 47-18  
VOLUME 4 OF 5



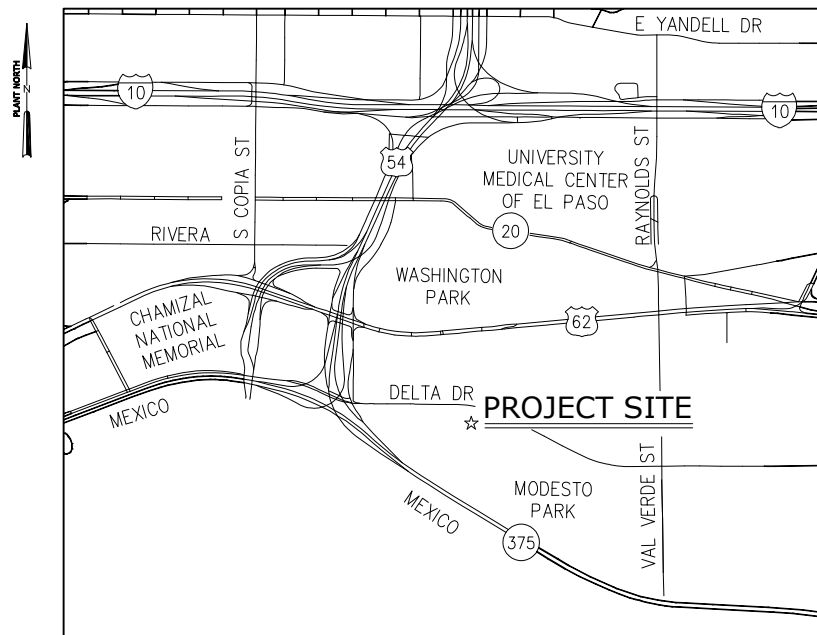
### ODOR CONTROL - HEADWORKS

MARCH 2018

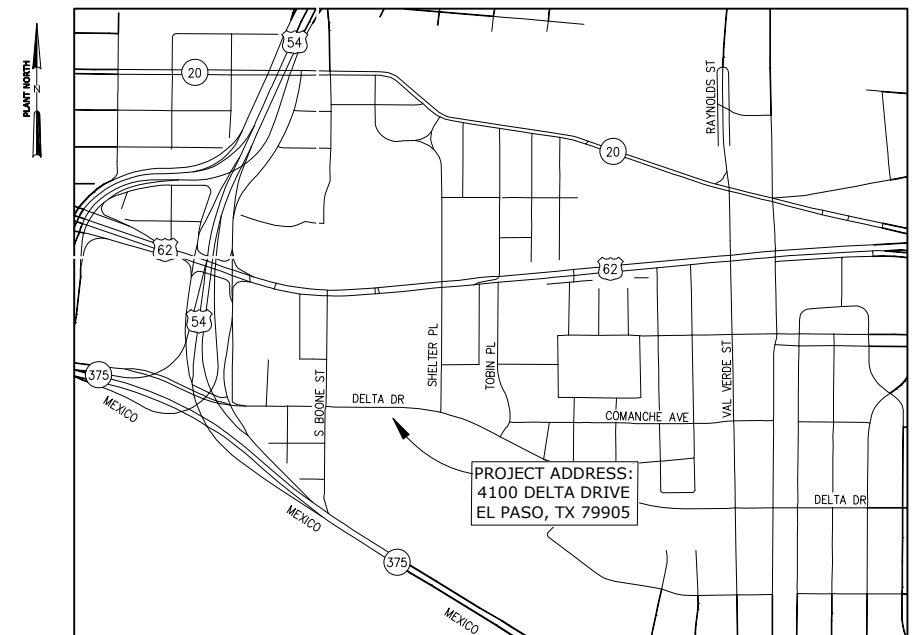
#### PUBLIC SERVICE BOARD MEMBERS

- |                             |                     |
|-----------------------------|---------------------|
| HENRY GALLARDO              | CHAIR               |
| CHRISTOPHER A. ANTCLIFF     | VICE CHAIR          |
| TERRI GARCIA                | SECRETARY-TREASURER |
| IVONNE SANTIAGO, PH.D, P.E. | MEMBER              |
| BRADLEY ROE, P.E.           | MEMBER              |
| KRISTINA D. MENA, PH.D      | MEMBER              |
| MAYOR DEE MARGO             | MEMBER              |

- |                            |                                      |
|----------------------------|--------------------------------------|
| JOHN E. BALLIEW, P.E.      | PRESIDENT - CEO                      |
| R. ALAN SHUBERT, P.E.      | VICE PRESIDENT                       |
| MARCELLA NAVARRETE, C.P.A. | VICE PRESIDENT                       |
| FERNANDO RICO, P.E.        | CHIEF OPERATIONS OFFICER             |
| GILBERT TREJO, P.E.        | CHIEF TECHNICAL OFFICER              |
| FELIPE LOPEZ, P.E.         | UTILITY ENGINEERING DIVISION MANAGER |



**VICINITY MAP**  
NOT TO SCALE



**LOCATION MAP**  
NOT TO SCALE

**OWNER**  
el paso  
**WATER**  
1154 HAWKINS BLVD.  
EL PASO TEXAS 79925  
(915) 594-5500

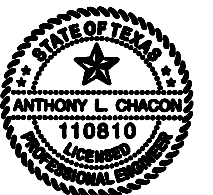
**SUB-CONSULTANT:**  
**Bath**  
**ENGINEERING**  
TEXAS FIRM REGISTRATION NO. 829  
4110 RIO BRAVO SUITE 102  
EL PASO, TX 79902  
TEL: 915-313-7200

**H<sub>2</sub>Terra**  
ENGINEERING. SURVEYING. SOLUTIONS.  
TBPE FIRM NO. F-2103 TBPLS FIRM NO. 10060700  
2020 E. MILLS AVENUE El Paso, TX 79901  
(915) 533-1418 FAX: (915) 533-4972

PREPARED BY:  
**Hazen**  
HAZEN AND SAWYER  
444 EXECUTIVE CENTER BOULEVARD,  
SUITE 200  
EL PASO, TX 79902

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SEALED DOCUMENT WITHOUT PRIOR NOTIFICATION TO  
THE RESPONSIBLE ENGINEER IS AN OFFENSE  
UNDER THE TEXAS ENGINEERING PRACTICE ACT.

*Anthony L. Chacon*



# DRAWING TITLE

## GENERAL

- G-01 COVER, PROJECT LOCATION MAP
- G-02 SHEET INDEX AND GENERAL NOTES
- G-03 ABBREVIATIONS, SYMBOLS, AND LEGEND
- G-04 SITE LOCATION PLAN

## CIVIL

- C-01 SITE GRADING AND DRAINAGE PLAN
- C-02 STANDARD DETAILS

## MECHANICAL

- M-01 ODOR CONTROL DEMOLITION PLAN
- M-02 ODOR CONTROL DEMOLITION SECTIONS - I
- M-03 ODOR CONTROL DEMOLITION SECTIONS - II
- M-04 ODOR CONTROL OVERALL PLAN
- M-05 ODOR CONTROL ENLARGED PLAN
- M-06 ODOR CONTROL SECTIONS

## HVAC

- H-01 LEGEND AND GENERAL NOTES
- H-02 SCHEDULES
- H-03 AIRFLOW DIAGRAMS
- H-04 REMOTE CONTROL PANEL SCHEMATICS
- H-05 HEADWORKS BLDG DUCT DEMOLITION PLAN - CEILING & GRADE
- H-06 HEADWORKS BLDG DUCT DEMOLITION PLAN - ROOF & BELOW GRADE
- H-07 HEADWORKS BLDG DUCT PLAN - CEILING & GRADE
- H-08 HEADWORKS BLDG DUCT PLAN - ROOF & BELOW GRADE
- H-09 HEADWORKS BLDG DUCT SECTIONS - I
- H-10 HEADWORKS BLDG DUCT SECTIONS - II
- H-11 DETAILS

## STRUCTURAL

- S-01 GENERAL NOTES
- S-02 ODOR CONTROL PLAN
- S-03 SECTIONS AND DETAILS
- S-04 TYPICAL DETAILS

## ARCHITECTURAL

- A-01 HEADWORKS BUILDING DEMOLITION DRAWING
- A-02 HEADWORKS BUILDING ROOF PLAN
- A-03 HEADWORKS BUILDING DETAILS

## ELECTRICAL

- E-01 LEGEND
- E-02 GENERAL NOTES
- E-03 POWER AND INSTRUMENTATION DEMOLITION PLAN
- E-04 ODOR CONTROL POWER AND INSTRUMENTATION PLANS
- E-05 HEADWORKS BUILDING POWER PLAN
- E-06 HEADWORKS BUILDING INSTRUMENTATION PLAN
- E-07 CONDUIT AND WIRE SCHEDULES
- E-08 TERMINAL BLOCK WIRING DIAGRAMS AND DETAILS
- E-09 PROCESS AND INSTRUMENTATION DIAGRAM
- E-10 DETAILS
- E-218D MCC - 18 DEMOLITION ONE LINE DIAGRAM
- E-218 MCC - 18 ONE LINE DIAGRAM HEADWORKS BUILDING

# GENERAL NOTES

1. THE CONTRACTOR IS RESPONSIBLE FOR ALL CONSTRUCTION METHODS, CONSTRUCTION SEQUENCING, AND SAFETY PROCEDURES USED DURING CONSTRUCTION.
2. THE CONTRACTOR IS TO COMPLY WITH ALL LOCAL, STATE, AND FEDERAL LAWS AND REGULATIONS APPLICABLE TO THE WORK COVERED BY THESE PLANS, INCLUDING BUT NOT LIMITED TO THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION REGULATIONS.
3. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND COMPLYING WITH ALL PERMITS AND LICENSES REQUIRED TO COMPLETE ALL WORK COVERED BY THESE PLANS.
4. DURING THE DEVELOPMENT OF THESE PLANS, EXISTING FACILITIES SUCH AS a) BURIED FACILITIES b) STRUCTURALLY UNSOUND FACILITIES c) LOW HANGING OVERHEAD UTILITY LINES AND d) UN-LOCATED FACILITIES MIGHT NOT HAVE BEEN INVESTIGATED TO A DEGREE OF CERTAINTY THAT THESE PLANS REPRESENT THE TOTAL IMPACT OF THE PROPOSED WORK ON ALL EXISTING FACILITIES. THEREFORE, UNIDENTIFIED ADDITIONAL WORK AND/OR UTILITY RELOCATION MIGHT BE REQUIRED IN ORDER TO COMPLETE TO COMPLETE THE WORK COVERED BY THESE PLANS.
5. THE CONTRACTOR SHALL CALL FOR TEXAS 811 TWO WORKING DAYS PRIOR TO ANY EXCAVATION.
6. THE CONTRACTOR IS RESPONSIBLE FOR ALL COORDINATION OF CONSTRUCTION AFFECTING UTILITIES AND THE COORDINATION OF ANY NECESSARY UTILITY RELOCATION WORK.
7. DEVIATIONS FROM THESE PLANS WILL NOT BE ALLOWED WITHOUT NOTIFYING THE ENGINEER AND OWNER. A CURRENT SET OF PLANS SHALL BE MAINTAINED ON THE JOB SITE AT ALL TIMES WHEN WORK IS IN PROGRESS.
8. THE CONTRACTING PARTIES, OR THE CONTRACTOR, SURVEYOR AND/OR ENGINEER SHALL PREPARE, MAINTAIN AND CERTIFY RECORD "AS-BUILT" DOCUMENTS FOR THIS PROJECT, IN ORDER TO ACCURATELY REFLECT THE PROJECT'S CONSTRUCTION WORK "AS-BUILT". DURING CONSTRUCTION, THE CONTRACTOR SHALL LEGIBLY MARK AND MAINTAIN ALL PLAN CHANGES AND DEVIATIONS ON A SET OF REDLINE DRAWINGS WITH RED PENCIL OR PEN. AFTER CONSTRUCTION IS COMPLETE, THE ENGINEER WILL INCORPORATE "AS-BUILT" DATA AND SHALL SUBMIT THE RECORD "AS-BUILT" DOCUMENTS TO THE OWNER FOR REVIEW AND APPROVAL.
9. THE CONTRACTOR SHALL PROVIDE FOR TRAFFIC CONTROL IN CONFORMANCE, WITH THE FEDERAL HIGHWAY ADMINISTRATION "MANUAL ON TRAFFIC DEVICES FOR STREETS HIGHWAYS" USING THE LATEST EDITIONS, REVISIONS AND POLICIES.
10. THE CONTRACTOR SHALL PERFORM SITE CLEANUP AND DISPOSAL IN A LEGAL MANNER ON A DAILY BASIS, OR AS DIRECTED BY THE CITY. THERE WILL BE NO SEPARATE MEASUREMENT OR PAYMENT FOR THIS WORK.
11. THE CONTRACTOR SHALL PRESERVE ALL SURVEY CONSTRUCTION STAKES (SET FOR THE PURPOSE OF CONSTRUCTION CONTROL LINES, LEVELS/GRADES, OR MEASUREMENT OF THE WORK) IN THEIR PROPER PLACES, UNTIL AUTHORIZED TO REMOVE THEM BY THE CITY. ANY EXPENSE INCURRED IN REPLACING ANY STAKES, THAT THE CONTRACTOR OR HIS/HER SUBCONTRACTORS MAY HAVE FAILED TO PRESERVE, WILL BE "BACK CHARGED" TO THE CONTRACTOR.
12. IN ADDITION TO UTILITIES, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CARE AND PROTECTION OF ALL EXISTING PUBLIC AND PRIVATE IMPROVEMENTS IN OR NEAR THE WORK AREA. EXISTING IMPROVEMENTS THAT HAVE BEEN REMOVED OR DAMAGED BY THE CONTRACTOR, OR SUBCONTRACTORS, DURING THE COURSE OF CONSTRUCTION SHALL BE REPAIRED OR REPLACED, INCLUDING CLEANUP, TO THE SATISFACTION OF THE CONTRACTING PARTY AND TO THE SATISFACTION OF THE OWNER OF THE EXISTING IMPROVEMENTS, AT THE CONTRACTOR'S SOLE EXPENSE.
13. IF THE CONTRACTOR ENCOUNTERS AN UNANTICIPATED CONDITION DURING CONSTRUCTION, THE CITY WILL SEE THAT REVISED AND/OR SUPPLEMENTAL IMPROVEMENT PLANS, AND/OR SPECIFICATIONS, ARE PREPARED AND SUBMITTED TO THE CITY FOR REVIEW AND APPROVAL PRIOR TO CONTINUING ANY WORK IN THE AREA WHERE THE UNANTICIPATED CONDITION AROSE.
14. THE CONTRACTOR SHALL FURNISH, AND APPLY ALL WATER NECESSARY TO COMPLETE THE WORK COVERED BY THESE PLANS, INCLUDING THE CONTROL OF DUST FROM CONSTRUCTION ACTIVITIES, IN ORDER TO MEET AIR POLLUTION REGULATIONS.
15. THE CONTRACTOR SHALL MAINTAIN THE CONSTRUCTION SITES AND ALL CONSTRUCTION ACTIVITIES COVERED UNDER THESE PLANS SO AS TO PREVENT DISPERSAL OF CONSTRUCTION MATERIALS, EQUIPMENT FLUIDS OR CONTAMINATES. FURTHERMORE, THE CONTRACTOR SHALL CONDUCT HIS/HER OPERATIONS OF EQUIPMENT MAINTENANCE ACTIVITIES SUCH THAT THEY WILL NOT RESULT IN THE SPILL OF OILY OR GREASY SUBSTANCES ON THE SITE OR INTO DRAINAGE DITCHES, SEWERS OR STORM DRAINS.
16. THE CONTRACTING PARTY IS NOT LIABLE FOR ANY DELAYS DUE TO DAMAGE TO UTILITIES CAUSED BY THE CONTRACTORS, OR ANY SUBCONTRACTORS, CONSTRUCTION ACTIVITIES.
17. A PUBLIC WORKS INSPECTOR WILL INSPECT ALL WORK WITHIN THE EASEMENTS. NOTIFY 24 HOURS PRIOR TO STARTING CONSTRUCTION.
18. CONTRACTOR REFERENCE SECTION 01520 OF THE SPECIFICATIONS REGARDING MAINTENANCE OF UTILITY OPERATIONS DURING CONSTRUCTION - CONSTRUCTION SEQUENCING.
19. ALL PIPE WORK SHALL BE INSTALLED IN ACCORDANCE WITH STANDARD CONSTRUCTION TECHNIQUES. ONLY THE LENGTH OF TRENCH IN WHICH PIPE CAN BE INSTALLED IN ONE DAYS TIME SHALL BE OPEN AT ANY TIME, WITH SPOIN MATERIAL PLACED ON THE UPHILL SIDE OF THE TRENCH. PIPING SHALL BE CAPPED AT END OF EACH DAYS WORK TO PREVENT SEDIMENT FROM ENTERING. TRENCH SHALL BE BACKFILLED AT END OF EACH DAYS WORK AND DISTRUBED AREA SEEDDED WITH TEMPORARY SEEDING MEASURE IF APPROPRIATE.
20. CONTRACTOR SHALL RESTORE/REPLACE ALL AREAS USED AND/OR DISTRUBED DURING CONSTRUCTION SUCH AS STAGING AREAS, STOCKPILE/LAYDOWN AREAS, DIRT PILES ETC., TO ORIGNAL OR BETTER CONDITION.
5. CONTRACTOR IS ENCOURAGED TO CLEAR AND GRUB THE SITE AND PHASE CONSTRUCTION, IF POSSIBLE, TO MINIMIZE EXPOSED SOIL AREAS AT ANY GIVEN TIME DURING CONSTRUCTION ACTIVITIES.
6. ALL EXCESS SOIL RESULTING FROM EARTHWORK OPERATIONS SHALL BE REMOVED FROM SITE BY CONTRACTOR (UNLESS OTHERWISE INSTRUCTED BY ENGINEER FOR USE ON-SITE, OR AT REQUEST OF OWNER). ANY SOIL TAKEN OFFSITE BECOMES THE CONTRACTORS RESPONSIBILITY, AND SHALL BE STOCKPILED AT LOCATIONS WITH ALL REQUIRED STATE AND LOCAL PERMITS.
7. STORM DRAINAGE INLETS SHALL BE PROTECTED WITH APPROPRIATE EROSION CONTROL MEASURES AT ALL TIMES. OUTLET PROTECTION SHALL BE INSTALLED AT STORM DRAINAGE SYSTEM DISCHARGE POINTS IMMEDIATELY UPON COMPLETION OF CONSTRUCTION AND SHALL BE MAINTAINED THROUGHOUT DURATION OF CONSTRUCTION ACTIVITIES.
8. INSTALL TEMPORARY GRAVEL CONSTRUCTION ENTRANCE AT LOCATIONS SHOW ON CONTRACT DRAWINGS.
9. INSTALL SILT FENCE, YARD INLET AND CURB INLET PROTECTION MEASURES AT LOCATIONS SHOWN ON THE CONTRACT DRAWINGS.
10. INSTALL ALL OTHER TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES IN LOCATIONS AS SHOWN ON THE CONTRACT DRAWINGS. NO CONSTRUCTION OR LAND DISTRUBANCE ACTIVITIES MAY BEGIN UNTIL ALL TEMPRARY SEDIMENT AND EROSION CONTROL MEASURE HAVE BEEN INSTALLED AND APPROVED BY LOCAL AUTHORITY.
11. ONCE ALL TEMPRARY EROSION CONTROL MEASURES HAVE BEEN INSTALLED, THE SITE SHALL BE CLEARED AND GRUBBED, AS REQUIRED, WITHIN THE LIMITS OF CONSTRUCTION (LOC) AS SHOWN ON THE CONTRACT DRAWINGS. CONTRACTOR IS ENCOURAGED TO PHASE CLEARING AND GRUBBING, IF POSSIBLE.
12. ALL SEDIMENTATION CONTROL DEVICES, SHALL BE INSPECTED AFTER EACH RAINFALL EVENET OF 1/2" OR GREATER AND REPAIRED OR REPLACED IMMEDIATELY AS NECESSARY. SEDIMENT SHALL BE REMOVED FROM BEHIND SILT FENCE, STABILIZED OUTLETS, AND INLET PROTECTION WHEN IT ACCUMULATES TO ONE-HALF THE DESIGN DEPTH. ALL REMOVED SEDIMENT SHALL BE DISPOSED OF IN SUCH A MANNER AS TO CAUSE NO FURTHER SEDIMENT TRANSPORT.
13. SILT FENCE SHALL BE INSTALLED ON ALL DONWSLOPE SIDES OF NEWLY GRADED AND DISTRUBED AREAS, WHERE INDICATED ON DRAWINGS. ADDITIONAL SILT FENCE MAY BE REQUIRED, AS DIRECTED BY THE ENGINEER.
14. ALL OTHER TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE INSTALLED AS INDICATED ON THE CONTRACT DRAWING OR AS DIRECTED BY THE ENGINEER.
15. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE MAINTAINED THROUGHOUT THE DURATION OF CONSTRUCTION ACTIVITIES. ANY REVISIONS TO THE APPROVED PLAN SHALL BE NOTED IN AN UPDATED SWPPP.

# WATER NOTES

1. ALL WATER MAINS, FITTINGS, VALVES, HYDRANTS, AND OTHER APPURTENANCES SHALL CONFORM TO AND BE INSTALLED IN ACCORDANCE WITH THESE PLANS, ANSI/AWWA STANDARDS C605 (LATEST REVISION), AND WITH MANUFACTURER'S RECOMMENDATIONS.
2. ALL WATER LINES OPENED IN THE COURSE OF THE WORK SHALL BE DISINFECTED IN ACCORDANCE WITH AWWA C600, C605 AND C651 (LATEST REVISION).
3. PERMISSIBLE DEFLECTION AT PIPE JOINTS SHALL MEET THE PIPE MANUFACTURER'S RECOMMENDATION. BEND FITTINGS SHALL BE INSTALLED WHERE THE REQUIREMENT CANNOT BE MET.
4. IF NEW CONSTRUCTION REQUIRES THE WATER TO BE SHUT OFF TO MAKE TIE-INS TO THE EXISTING SYSTEM, THE CONTRACTOR SHALL PROVIDE THE CITY WITH A WRITTEN SCHEDULE OF THE PROPOSED CONNECTIONS AT LEAST 48 HOURS PRIOR TO THE START OF SUCH TIE-INS. HOWEVER, NO WATER WILL BE TURNED OFF UNTIL ALL AFFECTED WATER USERS HAVE BEEN NOTIFIED BY THE CONTRACTOR OF THE SCHEDULE NOT LESS THAN FOUR (4) HOURS BEFORE WATER IS TO BE TURNED OFF.
5. THE CONTRACTOR SHALL COORDINATE WITH CITY TO NOTIFY ALL WATER USERS IN THE IMMEDIATE VICINITY OF ANY POSSIBLE SERVICE INTERRUPTION OR INCONVENIENCE DURING CONSTRUCTION.
6. CONTRACTOR SHALL VERIFY DEPTHS OF EXISTING MAINS FOR PROPOSED CONNECTIONS PRIOR TO COMMENCEMENT OF WORK.
7. ALL CONSTRUCTION WATER WILL BE METERED WITH AN APPROPRIATE SIZE WATER METER AND BACKFLOW PREVENTION. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING THE WATER METER AND SHALL CHECK WITH THE CITY FOR AVAILABILITY.
8. WATER SERVICES ARE TO REMAIN MARKED DURING CONSTRUCTION. NOTIFY THE CITY IN ADVANCE OF ANY RELOCATION OR ADJUSTMENTS.
9. ALL WATER MAINS WILL BE INSPECTED BEFORE BACKFILL. FINAL ACCEPTANCE WILL NOT BE GRANTED WITHOUT A SIGNED RELEASE FROM THE CITY SHOWING INSPECTION HAS BEEN PERFORMED.
10. ALL FLEXIBLE COUPLINGS SHALL BE DRESSER STYLE 38 OR AN APPROVED EQUAL, AND SHALL INCLUDE A JOINT HARNESS TO PREVENT SEPARATION, UNLESS OTHERWISE INDICATED ON THESE PLANS.
11. ALL PIPING AND RELATED EQUIPMENT SHALL BE DISINFECTED AND BACTERIOLOGICALLY TESTED PRIOR TO PLACEMENT INTO SERVICE. DISINFECTION OF PIPING SHALL BE IN ACCORDANCE WITH ANSI/AWWA C601-81.
12. THE MINIMUM HORIZONTAL SEPARATION OF A POTABLE WATER LINE AND A SANITARY SEWER LINE SHALL BE 6 FEET. THE MINIMUM VERTICAL SEPARATION SHALL BE 2 FEET. HOWEVER, CONTRACTOR SHALL MAINTAIN 4 FEET OF COVER OVER THE WATERLINE WITH A MINIMUM OF 1 FOOT CLEARANCE BETWEEN WATERLINE AND EXISTING SEWER SERVICE.
13. ALL MATERIALS AND PRODUCTS USED IN WATER SYSTEM, INCLUDING SURFACE COATINGS AND PAINTS, SHALL CONFORM TO NSF STANDARD 61 AS. ALL PRODUCTS ADDED DIRECTLY TO DRINKING WATER SHALL CONFORM WITH NSF STANDARD 60.
14. NO DRY DRILLING OR TAPPING OF WATERMANS SHALL BE PERMITTED. PRIOR TO DRILLING OR TAPPING, THE WATER MAIN SHALL HAVE ALL ENTRAPPED AIR REMOVED AND BE WATER PRESSURIZED TO 40 PSI OR NORMAL OPERATION SYSTEM PRESSURE, WHICHEVER IS GREATER. DRILLING/TAPPING EQUIPMENT SHALL HAVE APPROVED PURGE OPENINGS AND DISCHARGE HOSE.

# OVERALL SEDIMENTATION AND EROSION CONTROL REQUIREMENTS

1. CONTRACTOR SHALL SIGN AND IMPLEMENT THE REQUIREMENTS OF THE TEXAS POLLUTANT DISCHARGE ELIMINATION SYSTEM (TPDES). THE CONTRACTOR SHALL NOTIFY AT LEAST 48 HOURS PRIOR TO BEGINNING CONSTRUCTION ACTIVITIES TO SCHEDULE A PRE-CONSTRUCTION MEETING.
2. THE CONTRACTOR, AS CO-PRIMARY PERMITTEE AND OPERATOR UNDER THE PROVISIONS OF THE TPDES GENERAL PERMIT, SHALL SUBMIT A STORM WATER POLLUTION PREVENTION PLAN (SWPPP) FOR COMPLIANCE WITH THE TPDES GENERAL PERMIT NO. TXR15000.
3. DEVIATION FROM THE APPROVED SWPPP IS ALLOWED ONLY TO CORRECT EMERGENCY SITUATIONS OF SEDIMENT DISCHARGE OFFSITE OR WHEN MINOR MODIFICATIOIS ARE MADE TO IMPROVE PERFORMANCE OF THE MEASURES AND THE APPROVAL AUTHORITY HAS BEEN NOTIFIED. NOTE ALLOWED DEVIATIONS ON THE SWPPP MAINTAINED ON THE SITE.
4. ALL ONSITE ACTIVITEIES SHALL BE MANAGED TO INSURE NO ADVERSE IMPACTS TO WATER QUALITY STANDARDS ARE PROTECTED. SEE SPECIFICATION SECTION 02276 FOR FUTHER REQUIREMENTS.

# AREA CLASSIFICATIONS

DESCRIPTION	CLASSIFICATION	INDOOR	DRY	CORROSIVE
HEADWORKS BUILDING: PUMP ROOM, BAR SCREEN ROOM, AND INFLUENT MEETING STATION	CLASS I, DIVISION 2	INDOOR	DRY	CORROSIVE
HEADWORKS BUILDING: ELECTRICAL ROOM	UNCLASSIFIED	INDOOR	DRY	NOT CORROSIVE
BIOSCRUBBER SYSTEM VICINITY: LESS THAN OR EQUAL TO THREE FEET FROM THE BIOSCRUBBER VESSELS, FA PIPING, AND FANS.	CLASS I, DIVISION 2	OUTDOOR	WET	CORROSIVE
BIOSCRUBBER SYSTEM VICINITY: GREATER THAN THREE FEET FROM THE BIOSCRUBBER VESSELS, FA PIPING, AND FANS.	UNCLASSIFIED	OUTDOOR	WET	NOT CORROSIVE
ELSEWHERE	UNCLASSIFIED	OUTDOOR	WET	NOT CORROSIVE

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PROJECT ENGINEER:	A. CHACON
DESIGNED BY:	A. CHACON
DRAWN BY:	M. BAUTISTA
CHECKED BY:	G. RATASKY
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	
REV	ISSUED FOR

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY ANTHONY L. CHACON, P.E. NO. 110810 ON 03-09-18. ALTERATION OF A SEALED DOCUMENT WITHOUT PROPER NOTIFICATION TO THE RESPONSIBLE ENGINEER IS AN OFFENSE UNDER THE TEXAS ENGINEERING PRACTICE ACT.

**XAPRAY CHACON**  
 ANTHONY L. CHACON  
 110810  
 LICENSE NO.: 110810 DATE: 03/09/18



**Hazen**  
 HAZEN AND SAWYER  
 444 EXECUTIVE CENTER BOULEVARD,  
 SUITE 200  
 EL PASO, TX 79902

**HASKELL R. STREET WASTEWATER TREATMENT PLANT ODOR CONTROL - HEADWORKS**

DATE:	MARCH 2018
HAZEN NO.:	60701-011
CONTRACT NO.:	01
DRAWING NUMBER:	G-02
<b>GENERAL SHEET INDEX AND GENERAL NOTES</b>	

GENERAL

Table of abbreviations and symbols for general construction and piping, including items like AIR CONDITIONER, ANCHOR BOLT, AIR COMPRESSOR, etc.

ABBREVIATIONS

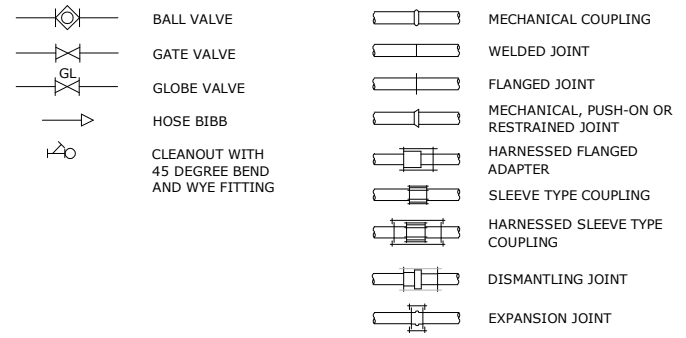
Table of abbreviations for various piping and equipment components, including HORIZONTAL SPLIT CASE, PUMP, HUMIDIFIER, etc.

PROCESS PIPING

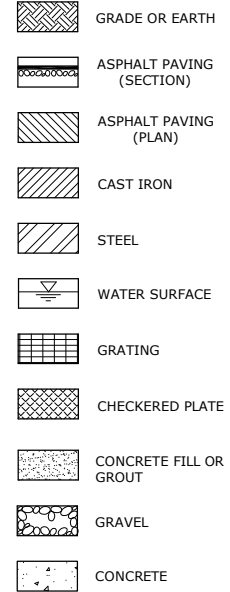
Table of abbreviations for process piping components, including PROCESS WATER, PROCESS AIR, ALUM SOLUTION, etc.

LEGEND

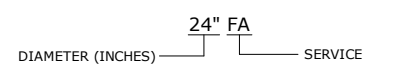
SYMBOLS



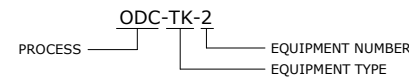
MATERIALS



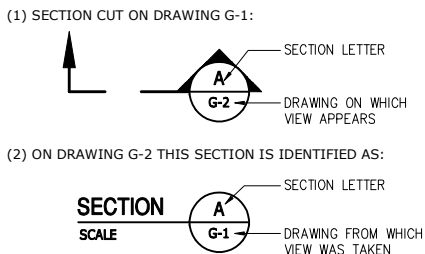
PIPE NAMING CONVENTION



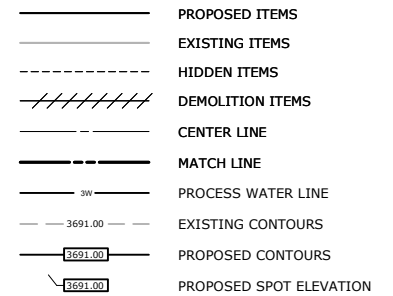
EQUIPMENT NAMING CONVENTION



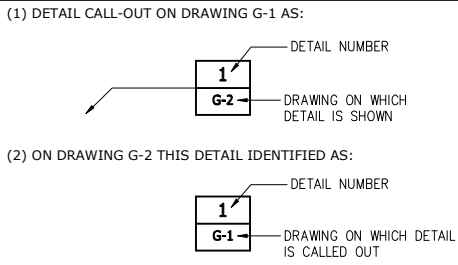
SECTION IDENTIFICATION



LINE TYPES



DETAIL IDENTIFICATION



VALVES, FITTINGS, ETC.

Table of abbreviations for valves, fittings, and other components, including ARV, ARVT, BFP, etc.

PIPING MATERIALS

Table of abbreviations for piping materials, including AC, CIP, DIP, GSP, etc.

THE HAZEN AND SAWYER COMPANY PROJECT NO. 60701-011 HASKELL STREET WASTEWATER TREATMENT PLANT ODOR CONTROL - HEADWORKS

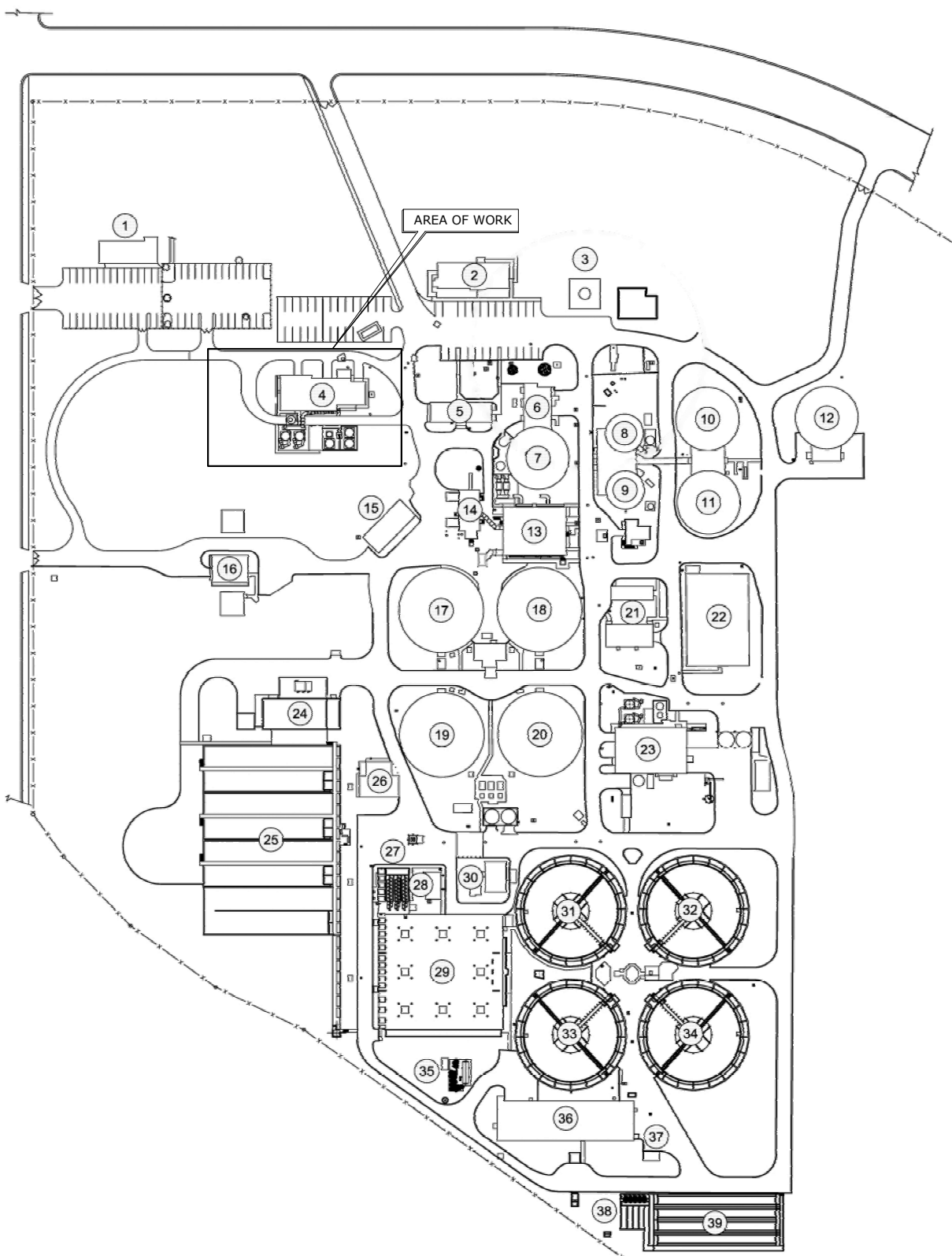
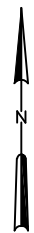
Project information table: PROJECT ENGINEER: A. CHACON, DESIGNED BY: A. CHACON, DRAWN BY: M. BAUTISTA, CHECKED BY: G. RATASKY.

Professional Engineer seal for Anthony L. Chacon, License No. 110810, State of Texas.

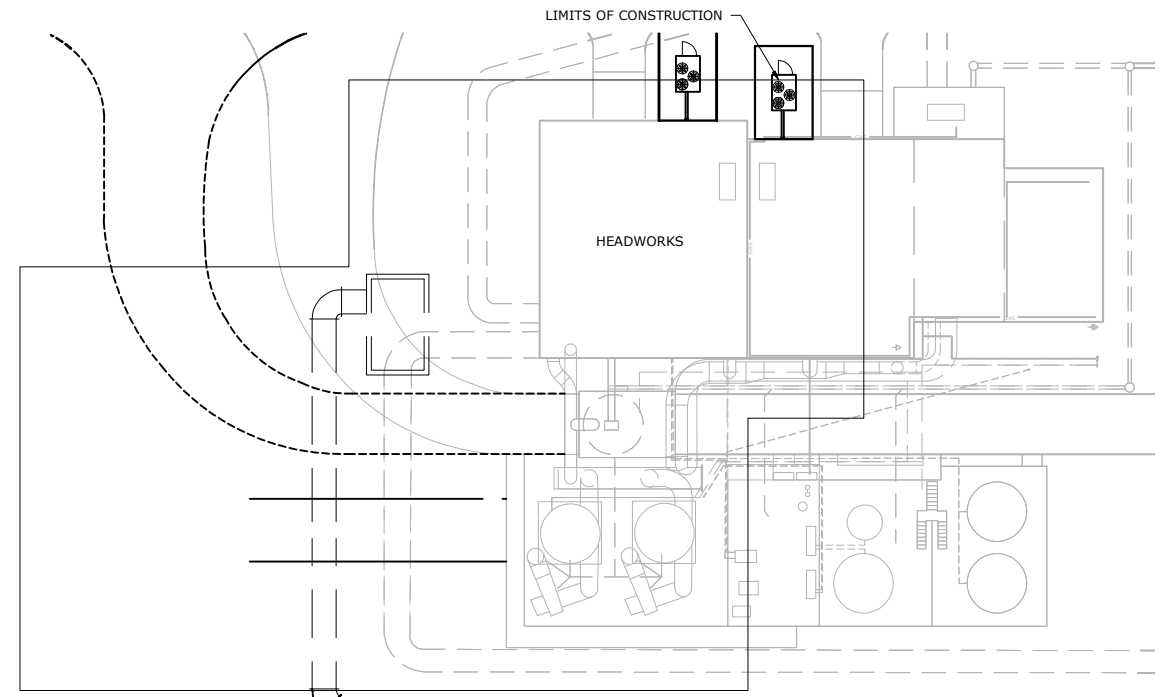
Hazen and Sawyer logo and address: 444 EXECUTIVE CENTER BOULEVARD, SUITE 200, EL PASO, TX 79902.

el paso WATER logo and project title: HASKELL R. STREET WASTEWATER TREATMENT PLANT ODOR CONTROL - HEADWORKS.

GENERAL ABBREVIATIONS, SYMBOLS, AND LEGEND. DATE: MARCH 2018. HAZEN NO.: 60701-011. CONTRACT NO.: 01. DRAWING NUMBER: G-03.



- ① OFFICE BLDG.
- ② OFFICE BLDG.
- ③ FUEL TANK
- ④ HEADWORKS
- ⑤ POWER PLANT & PUMPING STATION
- ⑥ ENGINE & GENERATOR BUILDING
- ⑦ ANAEROBIC DIGESTER No 1
- ⑧ DAFT No 1
- ⑨ DAFT No 2
- ⑩ ANAEROBIC DIGESTER No 2
- ⑪ ANAEROBIC DIGESTER No 3
- ⑫ ANAEROBIC DIGESTER No 4
- ⑬ AERATED DEGRIT BUILDING
- ⑭ BAR SCREENS
- ⑮ SHOP BUILDING
- ⑯ OZONE CONTACTOR BUILDING
- ⑰ PRIMARY CLARIFIER No 1
- ⑱ PRIMARY CLARIFIER No 2
- ⑲ PRIMARY CLARIFIER No 3
- ⑳ PRIMARY CLARIFIER No 4
- ㉑ BLOWER FACILITIES
- ㉒ AEROBIC DIGESTER
- ㉓ BELT FILTER PRESS BUILDING
- ㉔ BLOWER BUILDING
- ㉕ AERATION BASINS
- ㉖ CHLORINE BUILDING
- ㉗ SCREW PUMPS
- ㉘ CONTROL BUILDING
- ㉙ OXYGENATION TANK
- ㉚ CP BUILDING
- ㉛ FINAL CLARIFIER No 1
- ㉜ FINAL CLARIFIER No 2
- ㉝ FINAL CLARIFIER No 3
- ㉞ FINAL CLARIFIER No 4
- ㉟ PLANT WATER PUMPING
- ㊱ CHLORINATION / FILTRATION TANK
- ㊲ EFFLUENT PUMP STATION
- ㊳ EFFLUENT PUMP STATION
- ㊴ EFFLUENT FILTERS



AREA OF WORK - EXTENT OF WORK AT HEADWORKS  
SCALE: 1" = 20'

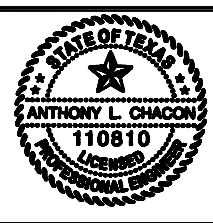
HASKELL STREET W.W.T.P. SITE LOCATION PLAN  
SCALE: 1" = 50'

FILE: HAZEN\DRAWINGS\COMPARISON\PROJECT\60701\ELP\60701\110810\GENLOC.GXD  
 PLOT DATE: 3/30/18 11:11 AM BY: SCHAEZ  
 Drawn by: SCHAEZ, Size: 48x, 3/30/18 11:11 AM

REV	ISSUED FOR	DATE	BY

PROJECT ENGINEER:	A. CHACON
DESIGNED BY:	A. CHACON
DRAWN BY:	M. BAUTISTA
CHECKED BY:	G. RATASKY
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	

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*Anthony L. Chacon*  
 LICENSE NO.: 110810 DATE: 03/09/18



**Hazen**  
 HAZEN AND SAWYER  
 444 EXECUTIVE CENTER BOULEVARD,  
 SUITE 200  
 EL PASO, TX 79902

HASKELL R. STREET WASTEWATER TREATMENT  
 PLANT ODOR CONTROL - HEADWORKS

GENERAL  
 SITE LOCATION PLAN

DATE:	MARCH 2018
HAZEN NO.:	60701-011
CONTRACT NO.:	01
DRAWING NUMBER:	G-04

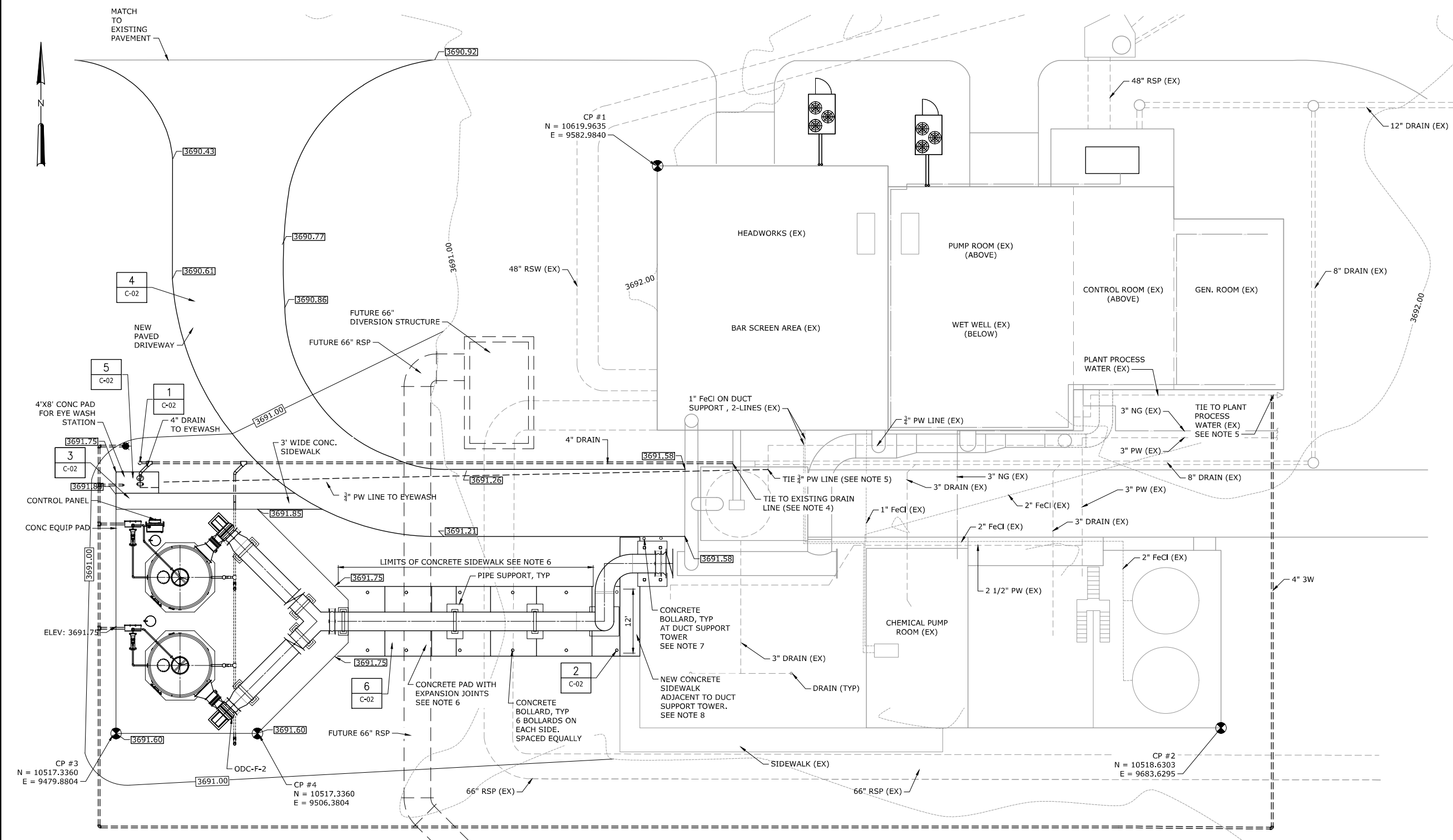


**NOTES:**

1. SELECTION AND DESIGN OF EXCAVATION SUPPORT SHALL BE THE COMPLETE RESPONSIBILITY OF THE CONTRACTOR. CONTRACTOR SHALL SUBMIT DESIGN DRAWINGS AND CALCULATIONS FOR ALL EXCAVATION SUPPORT TO THE ENGINEER FOR REVIEW. ALL DRAWINGS AND CALCULATIONS SHALL BE SEALED BY A PROFESSIONAL ENGINEER, CURRENTLY REGISTERED IN THE STATE OF TEXAS.
2. EXISTING ROADWAY ASPHALT SURFACE COURSE SHALL BE MILLED AND REPLACED AS NEEDED, AT THE COMPLETION OF THE PROJECT. IF EXISTING SURFACE COURSE IS TO BE REPLACED, THE TOP 2.0-INCHES OF EXISTING ASPHALT SURFACE COURSE SHALL BE MILLED, TOPPED WITH TACK COAT, AND 2.0-INCHES OF NEW SURFACE COURSE.
3. THE LIMITS OF REPAVED SIDEWALK AND CURB/GUTTER ARE SHOWN AS APPROXIMATE. CONTRACTOR IS ENSURE THAT ALL SIDEWALK AND CURB/GUTTER OUTSIDE OF THE LIMITS OF PROPOSED DRIVEWAY SHALL BE REPAVED.
4. CONTRACTOR SHALL EXCAVATE TO EXISTING PIPE AND MATCH INVERT WITH NEW PIPE AT EDGE OF EXCAVATION PROVIDE 0.35% SLOPE (MIN.) ON PIPE. PROVIDE 8"x4" REDUCER AT CONNECTION POINT.
5. CONTRACTOR MAY ELECT TO USE SERVICE SADDLE FOR CONNECTIONS TO SMALLER PW AND NPW AS APPROVED BY ENGINEER.
6. CONCRETE PAD IS CONTINUOUS BENEATH 42" FA PIPE. SEE DETAIL 6 ON SHEET C-02.
7. PROVIDE TWO CONCRETE BOLLARDS 18" NORTH FROM CONCRETE FOOTING OF DUCT SUPPORT TOWER. SEE DETAIL 2 ON SHEET C-02.
8. REMOVE AND REPLACE EXISTING CONCRETE SIDEWALK ADJACENT TO DUCT SUPPORT TOWER. NEW CONCRETE SIDEWALK SHALL MATCH EXISTING SIDEWALK WIDTH. SEE DETAIL 3 ON SHEET C-02.
9. REFER TO MECHANICAL DRAWINGS FOR ODOR CONTROL EQUIPMENT DETAILS.
10. REFER TO STRUCTURAL DRAWINGS FOR ODOR CONTROL EQUIPMENT CONCRETE PAD AND PIPE SUPPORT DETAILS.
11. REFER TO ELECTRICAL DRAWINGS FOR ELECTRICAL MODIFICATIONS IN ODOR CONTROL EQUIPMENT AREA.
12. THE LOCATION AND ELEVATION OF EXISTING UTILITIES ARE APPROXIMATE AND HAVE BEEN INCORPORATED FROM RECORD DRAWINGS. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO VERIFY LOCATIONS AND ELEVATIONS. ANY DAMAGE TO EXISTING FACILITIES RESULTING FROM CONTRACTORS WORK SHALL BE RESTORED TO EQUAL OR BETTER CONDITIONS.
13. CONTRACTOR SHALL COORDINATE WITH ALL EPWU PLANT STAFF PRIOR TO ANY EXCAVATION AND/OR POSSIBLE RELOCATION OF UTILITIES ENCOUNTERED.

**LEGEND:**

- 3691.00 --- EXISTING CONTOURS
- 3691.00 --- PROPOSED CONTOURS
- 3691.55 --- PROPOSED SPOT ELEVATION
- CP #1 SURVEY CONTROL POINT & DESIGNATION



**PLAN**  
1:10

File: Z:\CLIENTS\HAZEN AND SHAWVER\00518 SURVEY DRAWINGS\REF DRAWINGS\071011.DWG (C:\) V.G. Sweet by ISAAC Sam. date: 3/12/2018 10:30 AM  
 PLOT DATE: 3/12/2018 1:30 PM BY: ISAC

REV	ISSUED FOR	DATE	BY

PROJECT ENGINEER:	S. MORGAN
DESIGNED BY:	I. RODRIGUEZ
DRAWN BY:	J. HOLGUIN
CHECKED BY:	S. MORGAN
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY STEVE MORGAN, P.E. NO. 65340 ON 3-9-18, ALTERATION OF A SEALED DOCUMENT WITHOUT PROPER NOTIFICATION TO THE RESPONSIBLE ENGINEER IS AN OFFENSE UNDER THE TEXAS ENGINEERING PRACTICE ACT.

LICENSE NO.: 65340 DATE: MAR 9, 2018

**H<sub>2</sub>Terra**  
ENGINEERING, SURVEYING, SOLUTIONS.  
TBPE FIRM NO. F-2103 TBPLS FIRM NO. 10060700  
2020 E. MILLS AVENUE El Paso, TX 79901  
(915) 533-1418 FAX: (915) 533-4972

**el paso WATER**  
HASKELL R. STREET WASTEWATER TREATMENT  
PLANT ODOR CONTROL - HEADWORKS

**CIVIL SITE GRADING AND DRAINAGE PLAN**

DATE:	MARCH 2018
HAZEN NO.:	60701-011
CONTRACT NO.:	01
DRAWING NUMBER:	C-01

# EMBEDMENT CLASS "A" FOR GRAVITY PIPE DRY CONDITIONS (DETAIL No.171)

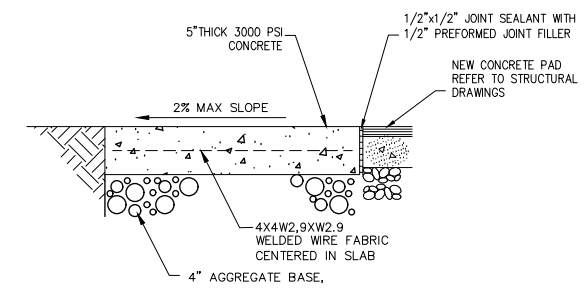
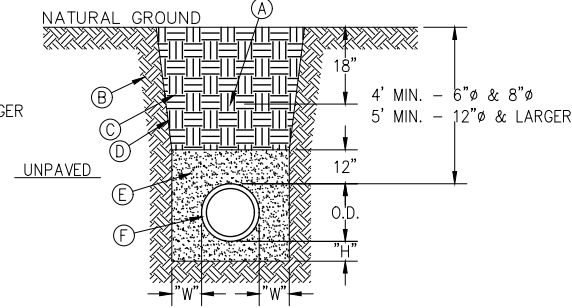
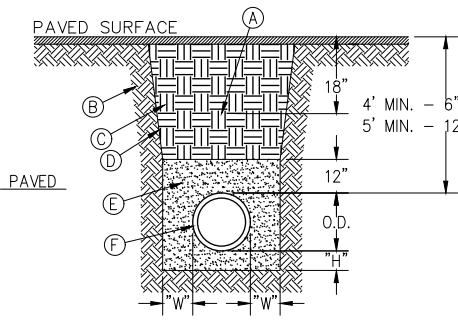
### GENERAL NOTES:

- BEDDING FOR PRESSURE AND GRAVITY PIPE IN DRY CONDITIONS.
- PROVIDE TRENCH SAFETY SYSTEM FOR TRENCH DEPTHS GREATER THAN 5 FEET.
- IF THE NATIVE MATERIAL EXCAVATED FROM THE TRENCH IS UNSUITABLE AS BACKFILL MATERIAL, OR THE REQUIRED COMPACTION IS UNATTAINABLE, THE CONTRACTOR SHALL, AT HIS EXPENSE, IMPORT SELECT MATERIAL TO BE MIXED WITH OR USED IN PLACE OF THE NATIVE MATERIAL. SELECT MATERIAL MUST BE APPROVED BY EPWU. SUBSTITUTE SOIL CEMENT SLURRY (1-SACK) IF REQUIRED IN SPECS.

### CONSTRUCTION KEY NOTES:

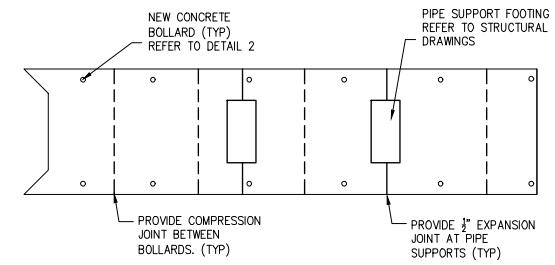
- APPROVED MARKING TAPE.
- UNDISTURBED STABLE MATERIAL.
- NATIVE MATERIAL BACKFILL.  
PAVED CONDITION: COMPACT TO 90% DENSITY PER ASTM D-1557 MODIFIED PROCTOR.  
UNPAVED CONDITION: COMPACT TO 85% DENSITY PER ASTM D-1557 MODIFIED PROCTOR.  
(\*SEE NOTE #3 IF THESE PREVIOUS CONDITIONS CANNOT BE MET.)
- SLOPE TRENCH IN SANDY SOIL CONDITIONS.
- USE CLASS II OR CLASS III SAND PER ASTM D-2487. NATIVE MATERIAL OR IMPORTED SELECT MATERIAL MEETING OR EXCEEDING THIS REQUIREMENT MAY BE USED. COMPACT TO 85% DENSITY PER ASTM D-1557 MODIFIED PROCTOR (OR 90% D-698 STANDARD PROCTOR).
- APPROVED PIPE.
- TRENCH DIMENSIONS AS FOLLOWS:

PIPE DIAMETER	"H"
6" - 30"	4"
GREATER THAN 30"	6"
PIPE DIAMETER	"W"
6" - 30"	8"
GREATER THAN 30"	12"



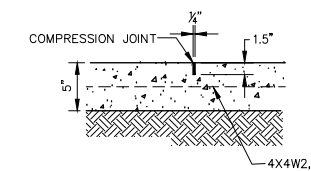
CONCRETE SIDEWALK SECTION

DETAIL	3
N.T.S.	C-01

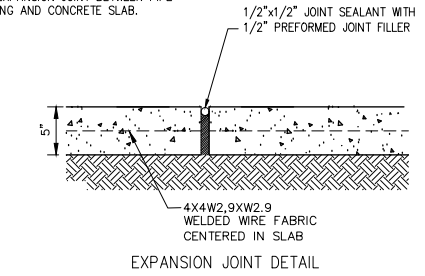


CONCRETE PAD AT PIPE SUPPORTS

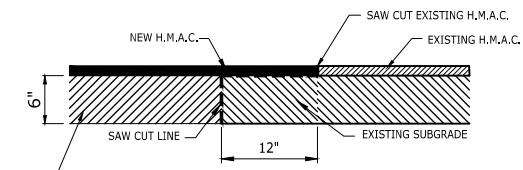
- NOTES:
- PROVIDE 1/2" EXPANSION JOINT BETWEEN PIPE SUPPORT FOOTING AND CONCRETE SLAB.



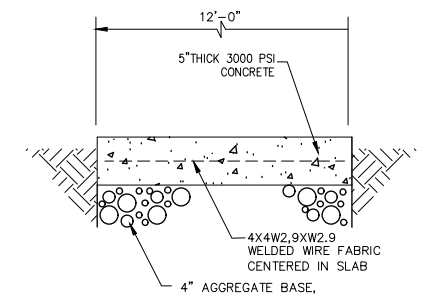
COMPRESSION JOINT DETAIL



EXPANSION JOINT DETAIL

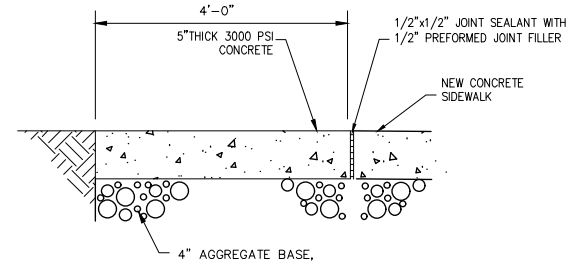


EDGE OF PAVEMENT (TYPICAL)



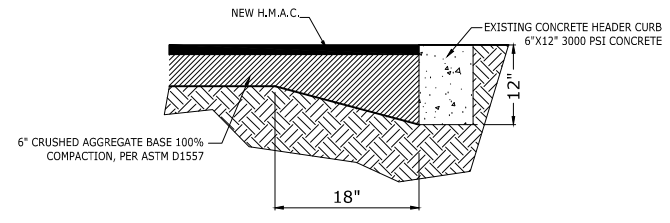
CONCRETE PAD AT PIPE SUPPORT SECTION

DETAIL	6
N.T.S.	C-01

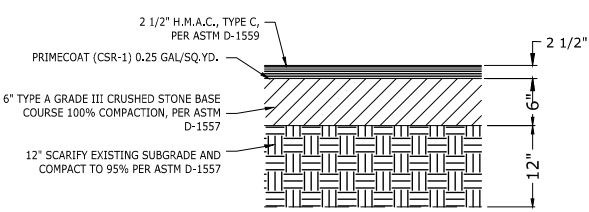


- NOTES:
- SLOPE CONCRETE TOWARDS DRAIN
- CONCRETE PAD FOR EYE WASH STATION 4'X8' SECTION

DETAIL	5
N.T.S.	C-01



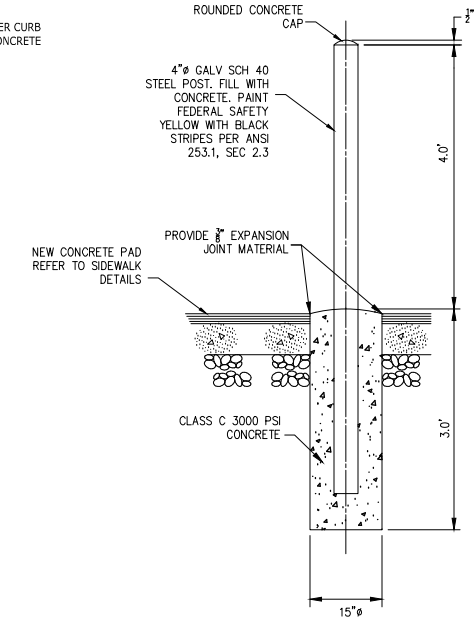
ASPHALT TURN DOWN DETAIL (TYP)



TYPICAL H.M.A.C. SECTION

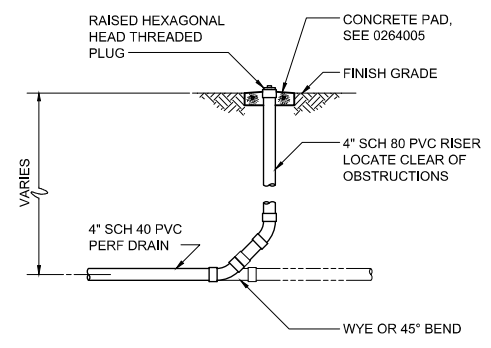
- NOTES:
- NEW PAVEMENT SHALL MATCH EXISTING PAVEMENT THICKNESS

DETAIL	4
N.T.S.	C-01



GUARD POST (BOLLARD)

DETAIL	2
N.T.S.	C-01



CLEANOUT

DETAIL	1
N.T.S.	C-02

FILE: Z:\CLIENTS\HAZEN AND SHAWVER\00518 SURVEY DRAWINGS\REF DRAWINGS\0701011 CIVIL\CSI STANDARD\DETAILS\171.DWG, BY: ISAAC, PLOT DATE: 3/12/2018 12:22 PM

REV	ISSUED FOR	DATE	BY

PROJECT ENGINEER:	S. MORGAN
DESIGNED BY:	I. RODRIGUEZ
DRAWN BY:	J. HOLGUIN
CHECKED BY:	S. MORGAN
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	

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 LICENSE NO.: 65340 DATE: MAR 9, 2018



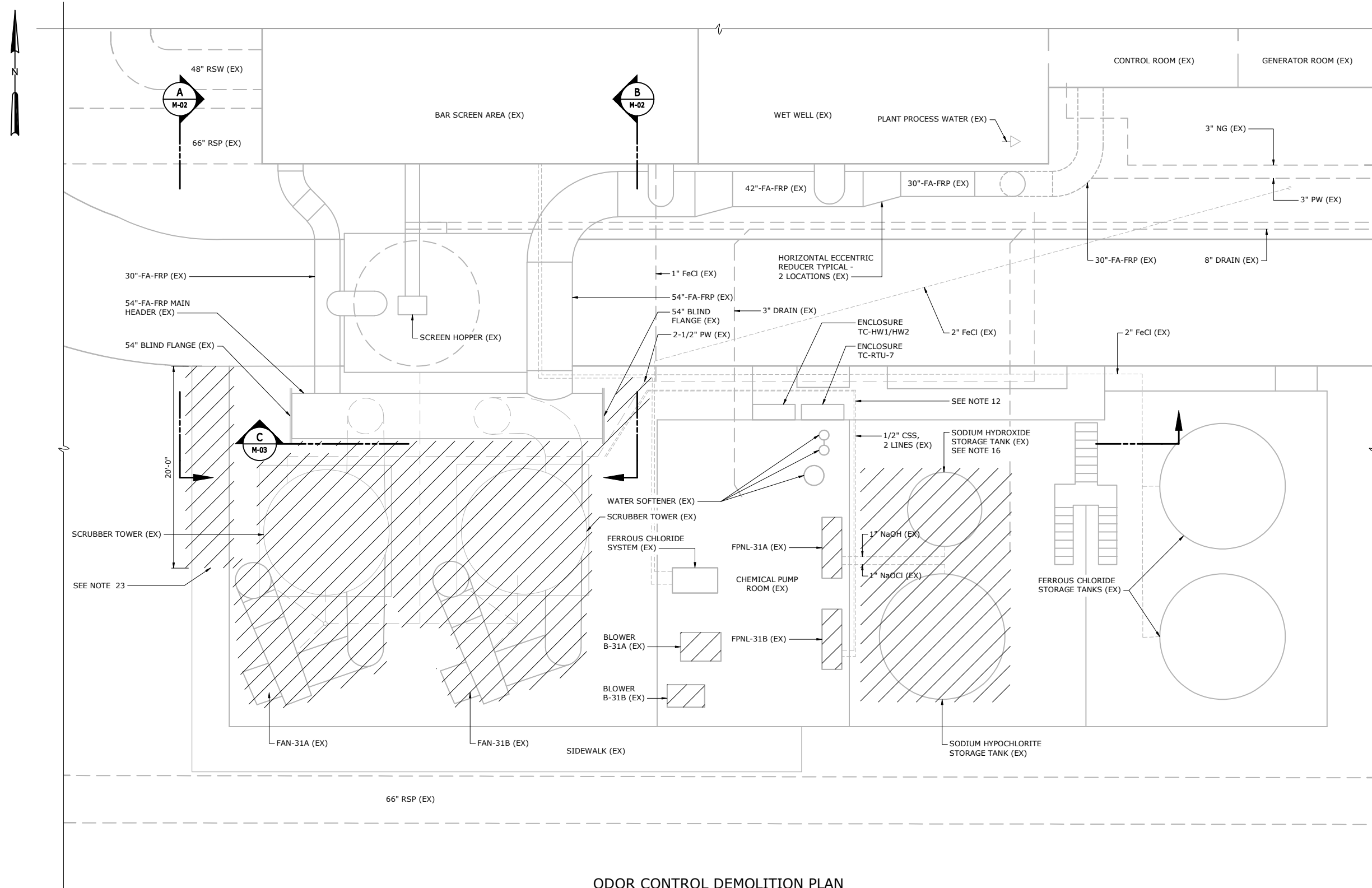
**H<sub>2</sub>Terra**  
 ENGINEERING. SURVEYING. SOLUTIONS.  
 TBPE FIRM NO. F-2103 TBPLS FIRM NO. 10060700  
 2020 E. MILLS AVENUE El Paso, TX 79901  
 (915) 533-1418 FAX: (915) 533-4972

**el paso WATER**  
 HASKELL R. STREET WASTEWATER TREATMENT PLANT ODOR CONTROL - HEADWORKS

CIVIL STANDARD DETAILS  
 DRAWING NUMBER: C-02

DATE:	MARCH 2018
HAZEN NO.:	60701-011
CONTRACT NO.:	01
DRAWING NUMBER:	C-02

- NOTES:**
1. ACTUAL SITE CONDITIONS MAY DIFFER FROM THE CONTRACT DRAWINGS. CONTRACTOR SHALL CONTACT THE ENGINEER IF A DISCREPANCY IS FOUND.
  2. PRIOR TO BEGINNING ANY EXCAVATION WORK, THE CONTRACTOR SHALL DETERMINE IF ANY CONFLICTS OR INTERFERENCES BETWEEN EXISTING AND NEW UTILITIES EXIST. IF A CONFLICT EXISTS, THE CONTRACTOR SHALL BRING IT TO THE ATTENTION OF THE ENGINEER TO DETERMINE HOW TO MODIFY THE DESIGN IF NECESSARY.
  3. DEMOLITION CONTRACTOR SHALL COORDINATE ALL ACTIVITIES WITH THE OWNER OR ENGINEER.
  4. CONTRACTOR SHALL REPLACE EXISTING SURVEY MONUMENTS IF DAMAGED OR REMOVED DURING CONSTRUCTION ACTIVITIES.
  5. DAMAGE TO EXISTING FACILITIES, THAT ARE NOT TO BE REMOVED, SHALL BE REPAIRED TO ORIGINAL OR BETTER CONDITIONS, AS DETERMINED BY THE ENGINEER, AT NO ADDITIONAL COST.
  6. ALL DEMOLISHED MATERIAL SHALL BE PROPERLY DISPOSED OF AT A PERMITTED FACILITY.
  7. CONTRACTOR SHALL REMOVE AND REPLACE ANY DAMAGED PAVEMENT AT NO ADDITIONAL COST WHERE NEW PAVEMENT JOINS EXISTING PAVEMENT, CONTRACTOR SHALL SAW CUT AND TREAT EDGES, AS SPECIFIED.
  8. CONTRACTOR SHALL PROVIDE EXCAVATION SUPPORT, AS REQUIRED, DURING CONSTRUCTION TO MAINTAIN THE INTEGRITY OF EXISTING UTILITIES, ROADS, AND STRUCTURES.
  9. SELECTION AND DESIGN OF EXCAVATION SUPPORT SHALL BE THE COMPLETE RESPONSIBILITY OF THE CONTRACTOR.
  10. IF AN ABANDONED PIPE IS IN CONFLICT WITH A PROPOSED UTILITY, THE CONTRACTOR SHALL REMOVE A SECTION OF THE ABANDONED PIPE LARGE ENOUGH TO INSTALL THE PROPOSED UTILITY PRIOR TO BACKFILLING, ALL ABANDONED PIPES SHALL BE CAPPED AND SEALED.
  11. WHERE CAPPING EXISTING PIPING, PROVIDE RESTRAINED CAP OR PLUG TO MATCH TYPE OR PIPE AS APPROVED BY THE ENGINEER UNLESS DIRECTED OTHERWISE, ALL BURIED DUCTILE OR CAST IRON CAP/PLUG ASSEMBLIES SHALL BE COATED WITH COAL TAR EPOXY AS SPECIFIED.
  12. CONTRACTOR SHALL ONLY DEMOLISH 1/2" CSS LINES, CONTRACTOR SHALL NOT REMOVE ANY ADJACENT LINES.
  13. REFER TO GENERAL ABBREVIATIONS, SYMBOLS AND LEGEND ON SHEET G-03 FOR MORE INFORMATION.
  14. ACTUAL SITE CONDITIONS MAY DIFFER FROM THE CONTRACT DRAWINGS. CONTRACTOR SHALL CONTACT THE ENGINEER IF DISCREPANCY IS FOUND.
  15. ALL DEMOLISHED MATERIAL SHALL BE PROPERLY DISPOSED OF AT A PERMITTED FACILITY. CONTRACTOR SHALL COORDINATE WITH EPWU.
  16. SODIUM HYDROXIDE AND SODIUM HYPOCHLORITE STORAGE TANKS AND ANCHOR BOLTS TO BE REMOVED. RETAINING WALL, CONCRETE PAD, AND DRAINS TO REMAIN.
  17. NaOH and NaOCl LINES TO BE REMOVED AFTER SODIUM HYDROXIDE AND SODIUM HYPOCHLORITE STORAGE TANKS HAVE BEEN DEMOLISHED.
  18. BLOWERS 31A AND 31B AND ANCHOR BOLTS IN CHEMICAL PUMP ROOM TO BE REMOVED.
  19. FPNU-31A AND FPNU-31B AND ANCHOR BOLTS IN CHEMICAL PUMP ROOM TO BE REMOVED.
  20. CSS LINES TO BE REMOVED AFTER FPNU-31A AND FPNU-31B HAVE BEEN DEMOLISHED.
  21. SCRUBBER TOWERS AND ANCHOR BOLTS TO BE REMOVED. CONCRETE PAD AND DRAINS TO REMAIN.
  22. FAN - 31A AND FAN - 31B AND ANCHOR BOLTS TO BE REMOVED.
  23. CONTRACTOR SHALL DEMOLISH SIDEWALK AS SHOWN.



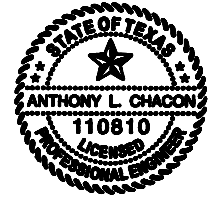
**ODOR CONTROL DEMOLITION PLAN**  
3/16" = 1'-0"

FILE: HAZEN AND SAWYER COMPANY PROJECT: 60701-011 (ODOR CONTROL) SHEET: M-01 DATE: 3/20/18 2:40 PM  
 DRAWN BY: SCHAEFER, S. DATE: 3/20/18 2:40 PM  
 CHECKED BY: SCHAEFER, S. DATE: 3/20/18 2:40 PM  
 DESIGNED BY: SCHAEFER, S. DATE: 3/20/18 2:40 PM  
 PROJECT ENGINEER: SCHAEFER, S. DATE: 3/20/18 2:40 PM

REV	ISSUED FOR	DATE	BY

PROJECT ENGINEER:	A. CHACON
DESIGNED BY:	A. CHACON
DRAWN BY:	C. WITT
CHECKED BY:	K. SMEBY
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY ANTHONY L. CHACON, P.E. NO. 110810 ON 03-09-18. ALTERATION OF A SEALED DOCUMENT WITHOUT PROPER NOTIFICATION TO THE RESPONSIBLE ENGINEER IS AN OFFENSE UNDER THE TEXAS ENGINEERING PRACTICE ACT.



LICENSE NO.: 110810 DATE: 03/09/18

  
 HAZEN AND SAWYER  
 444 EXECUTIVE CENTER BOULEVARD,  
 SUITE 200  
 EL PASO, TX 79902

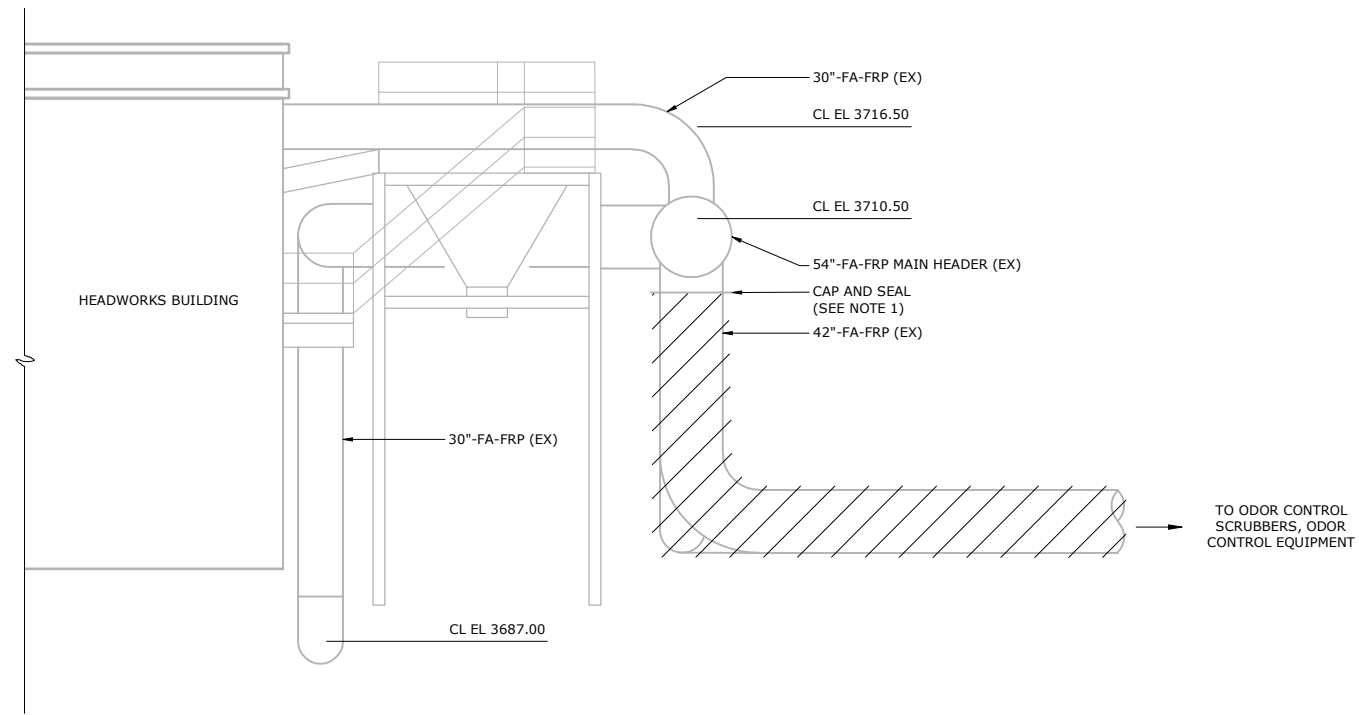
  
 HASKELL R. STREET WASTEWATER TREATMENT  
 PLANT ODOR CONTROL - HEADWORKS

**MECHANICAL  
 ODOR CONTROL  
 DEMOLITION PLAN**

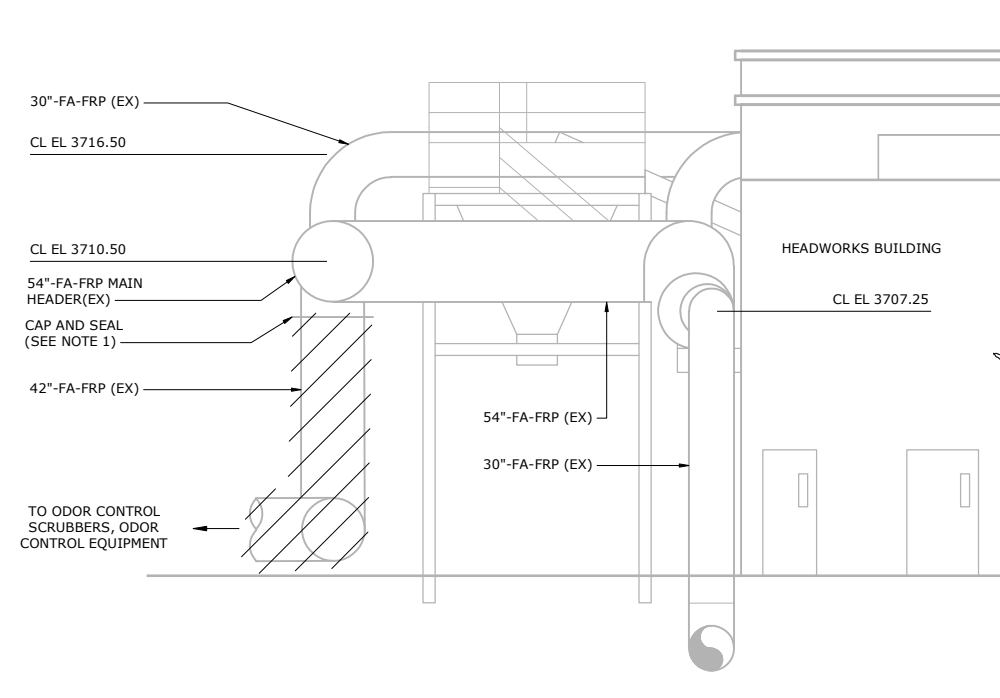
DATE:	MARCH 2018
HAZEN NO.:	60701-011
CONTRACT NO.:	01
DRAWING NUMBER:	M-01

**NOTES:**

1. CAP AND SEAL PER SPEC 15892 - FRP PIPING SYSTEMS.
2. REMOVE PIPING AND PIPE SUPPORTS.



**SECTION A**  
3/16" = 1'-0" M-01



**SECTION B**  
3/16" = 1'-0" M-01

FILE: HAZEN\DRAWINGS\COMMERCE\PROJECTS\60701-011\ODOR\MCH\MECH\02 - 3/20/18 4:17 PM  
 DRAWN BY: SCHAEFER, BENJAMIN  
 PLOT DATE: 3/20/18 4:17 PM BY: SCHAEFER

REV	ISSUED FOR	DATE	BY

PROJECT ENGINEER:	A. CHACON
DESIGNED BY:	A. CHACON
DRAWN BY:	C. WITT
CHECKED BY:	K. SMEBY
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*Anthony L. Chacon*  
 ANTHONY L. CHACON  
 110810  
 LICENSED PROFESSIONAL ENGINEER

LICENSE NO.: 110810 DATE: 03/09/18



**Hazen**  
 HAZEN AND SAWYER  
 444 EXECUTIVE CENTER BOULEVARD,  
 SUITE 200  
 EL PASO, TX 79902

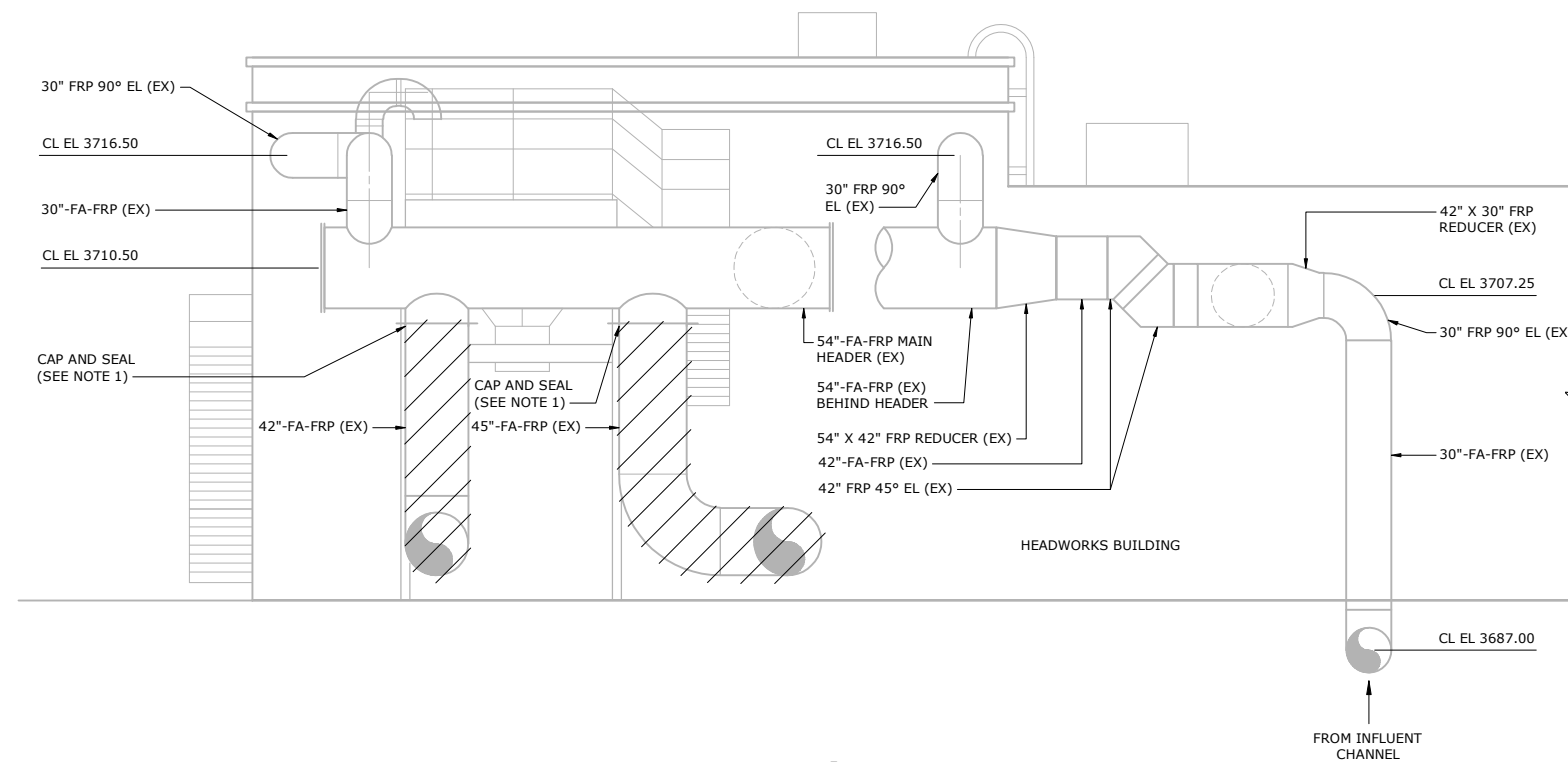
  
**el paso WATER**  
 HASKELL R. STREET WASTEWATER TREATMENT  
 PLANT ODOR CONTROL - HEADWORKS

MECHANICAL  
 ODOR CONTROL  
 DEMOLITION SECTIONS - I

DATE:	MARCH 2018
HAZEN NO.:	60701-011
CONTRACT NO.:	01
DRAWING NUMBER:	M-02

**NOTES:**

1. CAP AND SEAL PER SPEC 15892 - FRP PIPING SYSTEMS.
2. REMOVE PIPING AND PIPE SUPPORTS.



**SECTION C**  
3/16" = 1'-0" M-01

FILE: HAZEN AND SAWYER COMPANY PROJECT: 60701-011 (M-03) DATE: 03/09/18 BY: SCHAEZ  
 PLOT DATE: 3/9/2018 11:18 AM BY: SCHAEZ

PROJECT ENGINEER:	A. CHACON
DESIGNED BY:	A. CHACON
DRAWN BY:	C. WITT
CHECKED BY:	K. SMEBY
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	

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*Anthony L. Chacon*

**ANTHONY L. CHACON**  
110810  
LICENSED PROFESSIONAL ENGINEER

LICENSE NO.: 110810 DATE: 03/09/18

**Hazen**

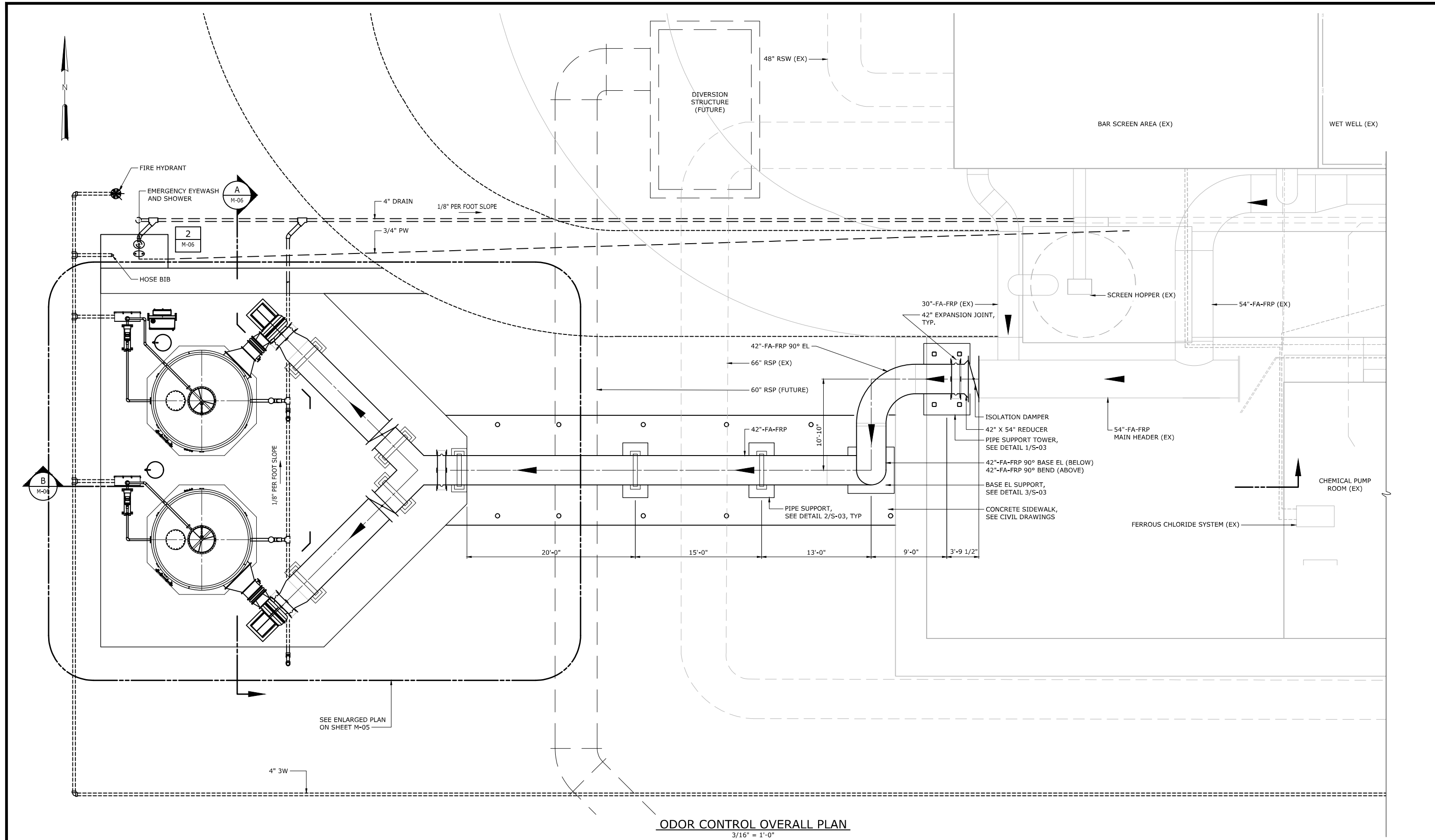
HAZEN AND SAWYER  
444 EXECUTIVE CENTER BOULEVARD,  
SUITE 200  
EL PASO, TX 79902

**el paso WATER**

HASKELL R. STREET WASTEWATER TREATMENT  
PLANT ODOR CONTROL - HEADWORKS

MECHANICAL  
ODOR CONTROL  
DEMOLITION SECTIONS - II

DATE:	MARCH 2018
HAZEN NO.:	60701-011
CONTRACT NO.:	01
DRAWING NUMBER:	M-03




**ODOR CONTROL OVERALL PLAN**  
3/16" = 1'-0"

SEE ENLARGED PLAN ON SHEET M-05

P:\HAZENANDSAWYER\COMMENTS\PROJECTS\60701-011\DRAWINGS\Mechanical\Drawn by SCHAVEZ, Shaw.dwg, 3/12/2018 2:24 PM  
 PLOT DATE: 3/12/2018 3:34 PM BY: SCHAVEZ

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PROJECT ENGINEER: A. CHACON  
 DESIGNED BY: A. CHACON  
 DRAWN BY: C. WITT  
 CHECKED BY: K. SMEBY  
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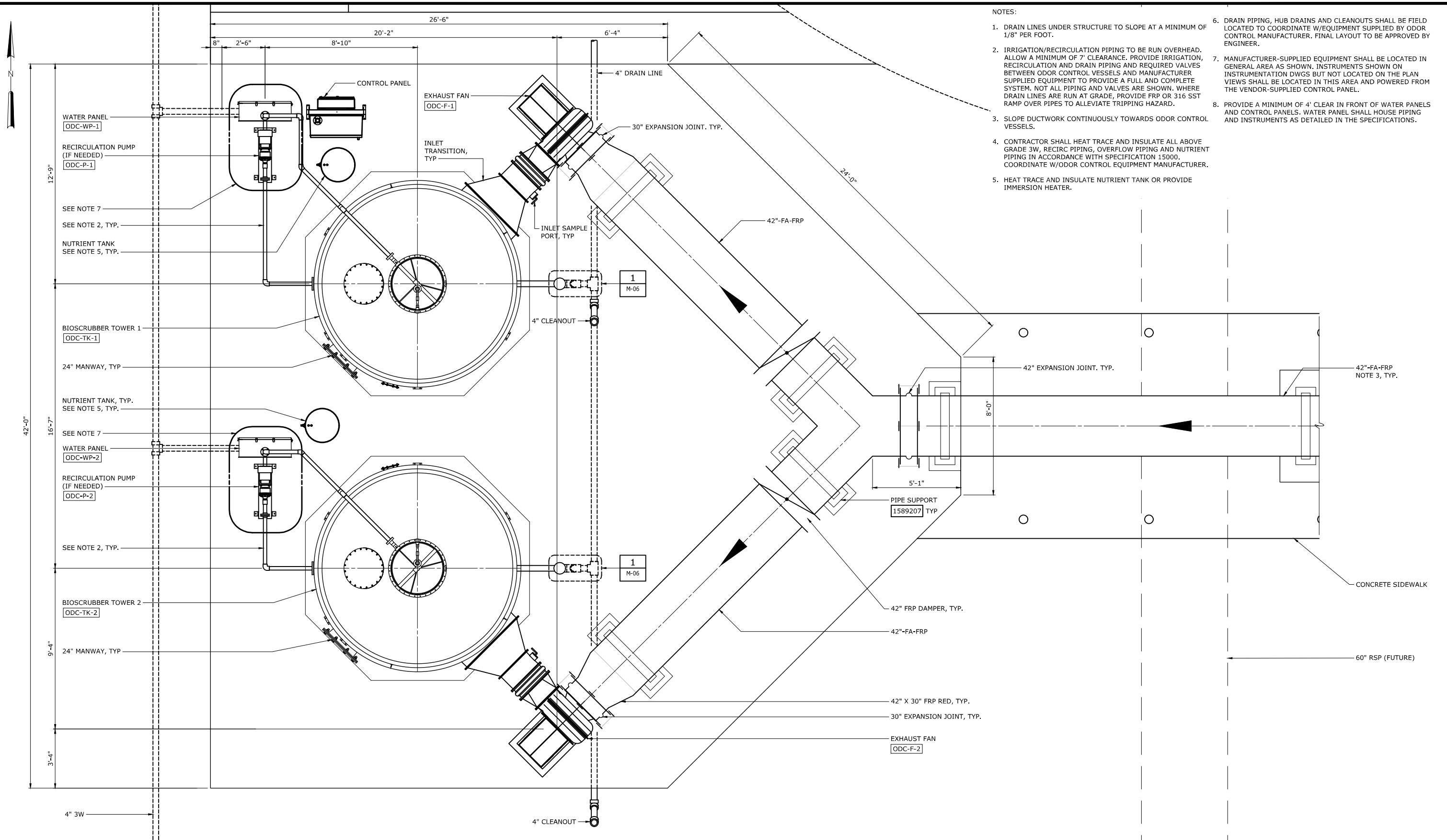
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 LICENSE NO.: 110810 DATE: 03/09/18

  
 HAZEN AND SAWYER  
 444 EXECUTIVE CENTER BOULEVARD,  
 SUITE 200  
 EL PASO, TX 79902

  
 HASKELL R. STREET WASTEWATER TREATMENT  
 PLANT ODOR CONTROL - HEADWORKS

**MECHANICAL  
 ODOR CONTROL OVERALL PLAN**

DATE: MARCH 2018  
 HAZEN NO.: 60701-011  
 CONTRACT NO.: 01  
 DRAWING NUMBER:  
**M-04**



- NOTES:
1. DRAIN LINES UNDER STRUCTURE TO SLOPE AT A MINIMUM OF 1/8" PER FOOT.
  2. IRRIGATION/RECIRCULATION PIPING TO BE RUN OVERHEAD. ALLOW A MINIMUM OF 7' CLEARANCE. PROVIDE IRRIGATION, RECIRCULATION AND DRAIN PIPING AND REQUIRED VALVES BETWEEN ODOR CONTROL VESSELS AND MANUFACTURER SUPPLIED EQUIPMENT TO PROVIDE A FULL AND COMPLETE SYSTEM. NOT ALL PIPING AND VALVES ARE SHOWN. WHERE DRAIN LINES ARE RUN AT GRADE, PROVIDE FRP OR 316 SST RAMP OVER PIPES TO ALLEVIATE TRIPPING HAZARD.
  3. SLOPE DUCTWORK CONTINUOUSLY TOWARDS ODOR CONTROL VESSELS.
  4. CONTRACTOR SHALL HEAT TRACE AND INSULATE ALL ABOVE GRADE 3W, RECIRC PIPING, OVERFLOW PIPING AND NUTRIENT PIPING IN ACCORDANCE WITH SPECIFICATION 15000. COORDINATE W/ODOR CONTROL EQUIPMENT MANUFACTURER.
  5. HEAT TRACE AND INSULATE NUTRIENT TANK OR PROVIDE IMMERSION HEATER.
  6. DRAIN PIPING, HUB DRAINS AND CLEANOUTS SHALL BE FIELD LOCATED TO COORDINATE W/EQUIPMENT SUPPLIED BY ODOR CONTROL MANUFACTURER. FINAL LAYOUT TO BE APPROVED BY ENGINEER.
  7. MANUFACTURER-SUPPLIED EQUIPMENT SHALL BE LOCATED IN GENERAL AREA AS SHOWN. INSTRUMENTS SHOWN ON INSTRUMENTATION DWGS BUT NOT LOCATED ON THE PLAN VIEWS SHALL BE LOCATED IN THIS AREA AND POWERED FROM THE VENDOR-SUPPLIED CONTROL PANEL.
  8. PROVIDE A MINIMUM OF 4' CLEAR IN FRONT OF WATER PANELS AND CONTROL PANELS. WATER PANEL SHALL HOUSE PIPING AND INSTRUMENTS AS DETAILED IN THE SPECIFICATIONS.


ODOR CONTROL ENLARGED PLAN  
3/8" = 1'-0"

P:\HAZEN\DRAWING\COMMENTS\PROJECTS\60701-011\ODOR\MECHANICAL\ODC-ENLARGED.PLT  
 PLOT DATE: 3/12/2018 3:43 PM BY: SCHAVEZ  
 FILE: \HAZEN\DRAWING\COMMENTS\PROJECTS\60701-011\ODOR\MECHANICAL\ODC-ENLARGED.SW6  
 PLOT DATE: 3/12/2018 3:43 PM BY: SCHAVEZ

REV	ISSUED FOR	DATE	BY

PROJECT ENGINEER:	A. CHACON
DESIGNED BY:	A. CHACON
DRAWN BY:	C. WITT
CHECKED BY:	K. SMEBY
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	

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 ANTHONY L. CHACON  
 110810  
 LICENSED MECHANICAL ENGINEER

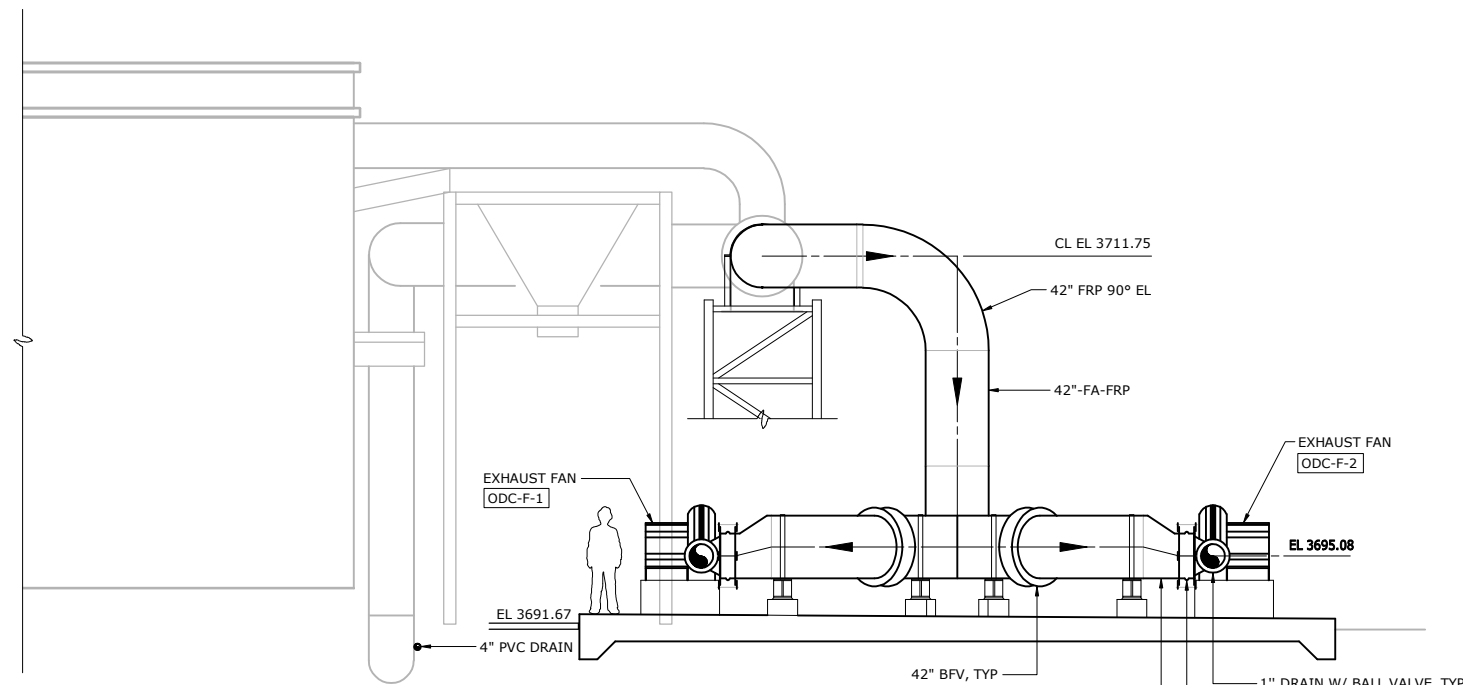
LICENSE NO.: 110810 DATE: 03/09/18

  
**Hazen**  
 HAZEN AND SAWYER  
 444 EXECUTIVE CENTER BOULEVARD,  
 SUITE 200  
 EL PASO, TX 79902

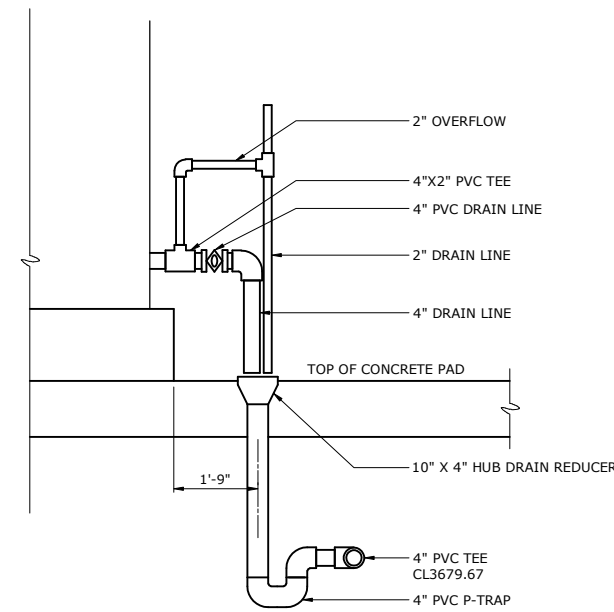
  
**el paso WATER**  
 HASKELL R. STREET WASTEWATER TREATMENT  
 PLANT ODOR CONTROL - HEADWORKS

MECHANICAL  
 ODOR CONTROL  
 ENLARGED PLAN

DATE:	MARCH 2018
HAZEN NO.:	60701-011
CONTRACT NO.:	01
DRAWING NUMBER:	M-05

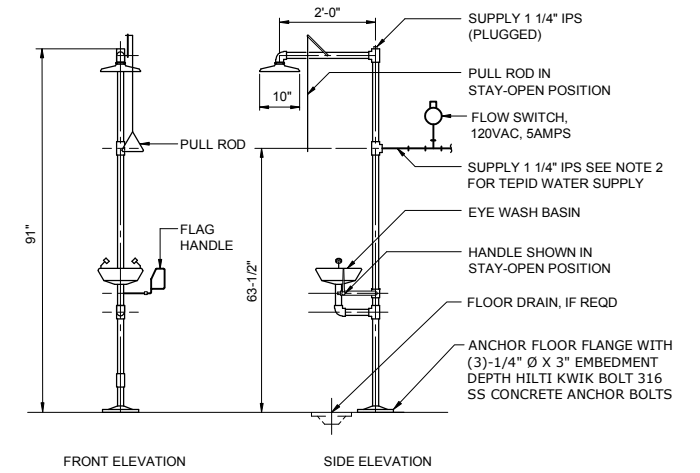


**SECTION A**  
3/16" = 1'-0"  
M-04



**OVERFLOW ASSEMBLY**

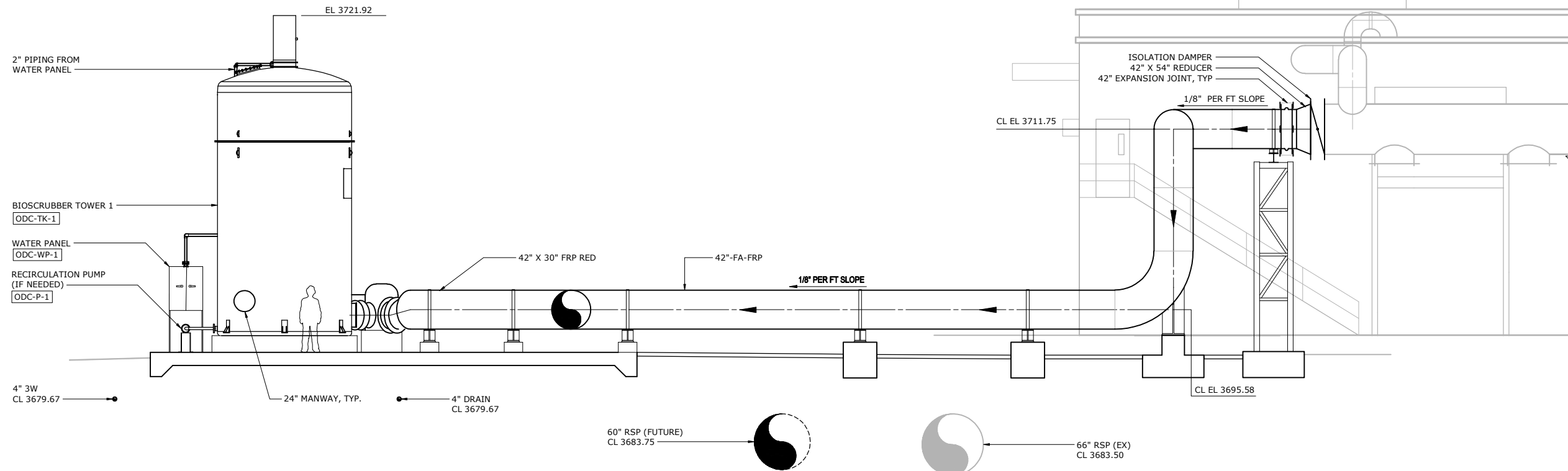
**DETAIL 1**  
1/2" = 1'-0"  
M-05



**EMERGENCY EYEWASH**

**DETAIL 2**  
NTS  
M-04

NOTES:  
1. REFERENCE SPECIFICATION 10524



**SECTION B**  
3/16" = 1'-0"  
M-04

FILE: HAZEN AND SAWYER COMPANY PROJECT: 60701 EL PASO WASTEWATER TREATMENT PLANT DATE: 3/20/18 2:17 PM  
DRAWN BY: SCHAEFER  
CHECKED BY: SCHAEFER

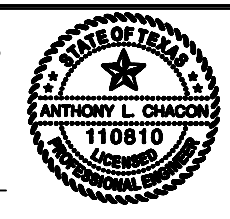
REV	ISSUED FOR	DATE	BY

PROJECT ENGINEER:	A. CHACON
DESIGNED BY:	A. CHACON
DRAWN BY:	C. WITT
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110810  
LICENSED PROFESSIONAL ENGINEER

LICENSE NO.: 110810 DATE: 03/09/18



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444 EXECUTIVE CENTER BOULEVARD,  
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HASKELL R. STREET WASTEWATER TREATMENT  
PLANT ODOR CONTROL - HEADWORKS

MECHANICAL  
ODOR CONTROL  
SECTIONS

DATE:	MARCH 2018
HAZEN NO.:	60701-011
CONTRACT NO.:	01
DRAWING NUMBER:	M-06



**GENERAL STRUCTURAL NOTES**

- G-1 THESE NOTES ARE GENERAL AND SUPPLEMENT THE SPECIFICATIONS. THESE NOTES APPLY TO THE ENTIRE PROJECT UNLESS MODIFIED OR NOTED OTHERWISE IN THE CONTRACT DOCUMENTS.
- G-2 STANDARD DETAILS SHALL BE USED WHEN REFERRED TO OR WHEN NO MORE RESTRICTIVE OR DIFFERENT DETAILS ARE SHOWN ON THE DRAWINGS.
- G-3 DESIGN IS IN ACCORDANCE WITH AND CONSTRUCTION SHALL COMPLY WITH THE PROVISIONS OF THE STATE OF TEXAS BUILDING CODE WHICH IS THE 2015 INTERNATIONAL BUILDING CODE WITH STATE AND LOCAL AMENDMENTS. THE DESIGN LOADS AND OTHER DESIGN VALUES GIVEN IN NOTES G-4 AND G-5 WERE USED FOR DESIGN OF STRUCTURES UNLESS NOTED OTHERWISE ON THE DRAWINGS.
- G-4 LIVE LOADS:  
STAIRWAYS, LANDINGS AND PLATFORMS = 150 PSF, UNLESS NOTED OTHERWISE.  
TOP SLABS (NEW) = 300 PSF  
HANDRAILS AND TOP RAILING = 200 LB CONCENTRATED LOAD ACTING ANY DIRECTION AT ANY POINT AND 20 PLF UNIFORM LOADING ACTING ANY DIRECTION. CONCENTRATED LOAD AND UNIFORM LOADING ARE NON-CONCURRENT.
- G-5 WIND DESIGN CRITERIA:  
BASIC WIND SPEED = 120 MPH (ULTIMATE)  
RISK CATEGORY = III  
WIND IMPORTANCE FACTOR ( $I_w$ ) = 1.25  
WIND EXPOSURE = D
- G-6 SEISMIC LOAD:  
RISK CATEGORY = III  
SEISMIC IMPORTANCE FACTOR ( $I_e$ ) = 1.25  
SITE CLASS = D  
MAPPED SPECTRAL RESPONSE ACCELERATIONS ( $S_s/s1$ ) = 0.364/0.111  
SPECTRAL RESPONSE ACCELERATIONS ( $S_M/S_M1$ ) = 0.549/0.262  
SPECTRAL RESPONSE COEFFICIENTS ( $S_D/S_D1$ ) = 0.366/0.175  
SEISMIC DESIGN CATEGORY = C
- G-7 ALL DIMENSIONS INDICATED (\*) SHALL BE VERIFIED EITHER BY FIELD MEASUREMENTS FOR EXISTING STRUCTURES OR BY SHOP DRAWINGS FOR EQUIPMENT FURNISHED. STRUCTURAL DIMENSIONS NOT SHOWN BUT CONTROLLED BY OR RELATED TO EQUIPMENT SHALL BE VERIFIED BY THE CONTRACTOR WITH THE MANUFACTURER PRIOR TO CONSTRUCTION.
- G-8 THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL EXISTING INFORMATION IN THE FIELD AS REQUIRED FOR NEW WORK.
- G-9 IF A CONFLICT IS FOUND BETWEEN DIFFERENT PORTIONS OF THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY. CONTINUED CONSTRUCTION OF THE AREA IN CONFLICT SHALL BE AT THE CONTRACTOR'S OWN RISK UNTIL THE CONFLICT IS RESOLVED.
- G-10 EQUIPMENT ANCHOR BOLT SIZES, TYPES, EMBEDMENT AND PATTERNS SHALL BE VERIFIED WITH THE MANUFACTURER. ALL BOLT PATTERNS SHALL BE TEMPLATED TO INSURE ACCURACY OF PLACEMENT.
- G-11 STRUCTURAL DRAWINGS SHALL BE USED IN COORDINATION WITH THE DRAWINGS OF ALL OTHER DISCIPLINES AND MANUFACTURER'S SHOP DRAWINGS.
- G-12 STRUCTURES HAVE BEEN DESIGNED FOR OPERATIONAL LOADS ON THE COMPLETED STRUCTURE. DURING CONSTRUCTION, THE STRUCTURES SHALL BE PROTECTED BY BRACING AND TEMPORARY SUPPORTS WHEREVER EXCESSIVE CONSTRUCTION LOADS MAY OCCUR. OVERSTRESSING OF ANY STRUCTURAL ELEMENT IS PROHIBITED.

**FOUNDATIONS**

- F-1 CONCRETE (CAST-IN-PLACE) NOTES APPLY TO FOUNDATIONS.
- F-2 ALLOWABLE SOIL CONTACT PRESSURE = 2,000 PSF. THE SUBGRADE SHALL BE VERIFIED BY THE ENGINEER PRIOR TO PLACEMENT OF CONCRETE.
- F-3 SOFT OR LOOSE SOILS MAY BE ENCOUNTERED DURING EARTHWORK OPERATIONS, REQUIRING ADDITIONAL UNDERCUTTING AND FILL.
- F-4 MINIMUM DEPTH FROM ADJACENT FINISHED GRADE TO BOTTOM OF FOUNDATION = 6 INCHES.

**EXISTING INFORMATION**

- X-1 ALL EXISTING INFORMATION SHOWN ON THESE DRAWINGS INCLUDING LOCATION, DIMENSIONS, ELEVATIONS, AND CONFIGURATIONS IS DERIVED FROM THE 1992 CONTRACT DRAWINGS AND IS NOT GUARANTEED TO BE COMPLETE OR CORRECT.
- X-2 THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL EXISTING INFORMATION IN THE FIELD AS REQUIRED FOR DEMOLITION AND MODIFICATIONS.

**CONCRETE**

- C-1 DESIGN OF CONCRETE ELEMENTS INCLUDING WALLS, FORMED SLABS, BEAMS, AND COLUMNS IS IN ACCORDANCE WITH ACI 318 (CODE REQUIREMENTS FOR STRUCTURAL CONCRETE) AND 350 (CODE REQUIREMENTS FOR ENVIRONMENTAL ENGINEERING CONCRETE STRUCTURES).
- C-2 FOR CONCRETE MIX DESIGN SEE SPECIFICATION SECTION 03300.
- C-3 CONCRETE STRENGTH CLASSES (28-DAY COMPRESSIVE STRENGTH):  
A) CLASS A CONCRETE (4,000 PSI): NORMAL WEIGHT CONCRETE SHALL BE USED IN ALL STRUCTURES, SIDEWALKS, PAVEMENTS, EXCEPT WHERE NOTED OTHERWISE IN CONTRACT DOCUMENTS. ALL CONCRETE SHALL BE CLASS A1 CONCRETE UNLESS ANOTHER CLASS IS SPECIFICALLY CALLED FOR ON CONTRACT DOCUMENTS OR SPECIFIED HEREIN.  
B) CLASS B CONCRETE (3,000 PSI): NORMAL WEIGHT STRUCTURAL CONCRETE USED FOR DUCT BANK ENCASUREMENTS, CATCH BASINS, FENCE AND GUARD POST EMBEDMENT, CONCRETE FILL AND OTHER AREAS WHERE SPECIFICALLY NOTED ON CONTRACT DRAWINGS.
- C-4 ALL BAR REINFORCING SHALL CONFORM TO ASTM A615, GRADE 60. WHERE REINFORCEMENT IS TO BE WELDED IN ACCORDANCE WITH AWS D1.4, ASTM A706 GRADE 60 SHALL BE USED. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185.
- C-5 CONCRETE COVER FOR REINFORCING (UNLESS NOTED OTHERWISE ON THE DRAWINGS):  
A) CONCRETE DEPOSITED DIRECTLY AGAINST SOIL: 3"  
B) CONCRETE EXPOSED TO WEATHER (#5 OR SMALLER): 1 1/2"  
CONCRETE EXPOSED TO WEATHER (#6 OR LARGER): 2"  
C) SLABS: 1 1/2"  
AT SURFACES CONTACTING FLUID: 2"  
D) BEAMS AND COLUMNS (TO MAIN REINFORCEMENT): 2"  
BEAMS AND COLUMNS (TO COLUMN TIES OR STIRRUPS): 1 1/2"  
E) WALLS 12" OR MORE: 2"  
WALLS LESS THAN 12" (#5 OR SMALLER): 1 1/2"  
WALLS LESS THAN 12" (#6 OR LARGER): 2"  
F) FOR SURFACES EXPOSED TO FLUID IN BEAMS, COLUMNS AND WALLS: ADD 1/2" TO ABOVE VALUES
- C-6 SPLICES SHALL BE CLASS "B" CONFORMING TO THE PROVISIONS OF ACI 318 UNLESS NOTED OTHERWISE. SPLICE LENGTH FOR TWO DIFFERENT SIZED BARS TO BE LAP SPLICED TOGETHER SHALL BE THE LENGTH OF THE LARGER BAR UNLESS NOTED OTHERWISE.
- C-7 WHERE HORIZONTAL CONSTRUCTION JOINTS, LOCATED ABOVE THE FOUNDATION SLAB, EXTEND BEYOND WHERE NEEDED, THEY SHALL BE TERMINATED AT A VERTICAL CONSTRUCTION JOINT APPROVED BY THE ENGINEER.
- C-8 ALL JOINTS WHICH ARE IN MEMBERS IN CONTACT WITH LIQUID OR BELOW GRADE SHALL HAVE A WATERSTOP. CONSTRUCTION JOINTS SHALL HAVE A 6" PVC RIBBED WATERSTOP. EXPANSION JOINTS SHALL HAVE A 9" PVC CENTER BULB RIBBED WATERSTOP. IN VERTICAL JOINTS, WATERSTOPS SHALL TERMINATE NO LESS THAN 18" ABOVE THE MAXIMUM WATER SURFACE OR 18" ABOVE GRADE, WHICHEVER IS HIGHER.
- C-9 SLABS WITH SLOPING SURFACES SHALL HAVE THE INDICATED SLAB THICKNESS MAINTAINED AS THE MINIMUM. SLAB BOTTOMS CAN EITHER SLOPE WITH THE TOP SURFACE OR BE LEVEL. REINFORCEMENT IN SLABS WITH SLOPING SURFACES SHALL BE PLACED AT THE REQUIRED CLEARANCE FROM THE SLAB SURFACE.
- C-10 ALL EXPOSED CORNERS SHALL HAVE A 3/4" CHAMFER OR A 1/2" RADIUS TOOLED CORNER.
- C-11 EQUIPMENT SUPPORTS, ANCHORAGES, OPENINGS, RECESSES AND REVEALS NOT SHOWN ON THE STRUCTURAL DRAWINGS BUT REQUIRED BY OTHER CONTRACT DOCUMENTS, SHALL BE PROVIDED PRIOR TO PLACING CONCRETE.
- C-12 REINFORCING BARS AND ACCESSORIES SHALL NOT BE IN CONTACT WITH ANY METAL PIPE, PIPE FLANGE, METAL CONDUIT, OR OTHER METAL PARTS EMBEDDED IN CONCRETE. A MINIMUM CLEARANCE OF 2" SHALL BE PROVIDED.
- C-13 DOWELS, ANCHOR BOLTS, PIPES, WATERSTOPS AND OTHER EMBEDDED ITEMS SHALL BE HELD SECURELY IN POSITION WHILE CONCRETE IS BEING PLACED.
- C-14 CONDUITS AND OTHER SIMILAR ITEMS EMBEDDED IN OR PENETRATING THROUGH CONCRETE SHALL BE SPACED ON CENTER NOT LESS THAN 3 TIMES THEIR OUTSIDE DIMENSION, BUT NOT LESS THAN 2 1/2" CLEAR. WHEN SUCH ITEMS ARE EMBEDDED IN WALLS OR SLABS, THEY SHALL NOT OCCUPY MORE THAN 1/3 OF THE MEMBER THICKNESS.
- C-15 AT ALL TYPICAL CURBS, EQUIPMENT PADS, AND PIPE SUPPORT PIERS, REINFORCING DOWELS SHOWN MAY BE REPLACED WITH MATCHING DOWELS SET IN EPOXY IN DRILLED HOLES AS SPECIFIED. DOWELS LOCATED CLOSER THAN 3" FROM ANY EDGE OF CONCRETE SHALL NOT BE REPLACED WITH DRILLED DOWELS.
- C-16 DRILLED ADHESIVE DOWELS (WHERE DOWELS ARE SHOWN TO BE PLACED INTO HARDENED CONCRETE):  
A) THE HOLE DIAMETER SHALL BE NO LARGER THAN 1/8" GREATER THAN THE DIAMETER OF THE REINFORCING BAR AT THE DEFORMATIONS.  
B) THE DEPTH OF EMBEDMENT SHALL BE 12 BAR DIAMETERS, UNLESS NOTED OTHERWISE.  
C) ADJUST THE DOWEL LOCATIONS AS NEEDED TO AVOID DRILLING THROUGH ANY REINFORCING BARS. IF THE LOCATION NEEDS TO BE MODIFIED, CONTACT THE ENGINEER. CONTRACTOR SHALL USE NON-DESTRUCTIVE MEANS TO FIELD LOCATE REINFORCEMENT PRIOR TO DRILLING HOLES FOR DOWELS.
- C-17 CLEAR DISTANCE FROM ANCHOR BOLTS TO ANY CONCRETE EDGE SHALL BE 4" MINIMUM UNLESS NOTED OTHERWISE.
- C-18 CONCRETE COMPRESSIVE STRENGTH TESTS SHALL BE AVAILABLE ON THE JOB SITE FOR REVIEW BY THE ENGINEER.

**DEMOLITION**

- D-1 FOR DEMOLITION REQUIREMENTS, REFER TO SPECIFICATION 02050 - DEMOLITION.
- D-2 CONCRETE DEMOLITION WITHIN STRUCTURES BEING MODIFIED SHALL BE SELECTIVE DEMOLITION BY CORE DRILLING OR SAWCUTTING AND CAREFUL REMOVAL OF CONCRETE SHOWN TO BE REMOVED. NO OVER CUTTING OF AREAS TO BE DEMOLISHED SHALL BE PERMITTED. CONTRACTOR SHALL CORE DRILL CORNERS OF OPENING PRIOR TO SAWCUTTING. EXPLOSIVES AND VIBRATORY HAMMERS SHALL NOT BE USED FOR DEMOLITION WORK.
- D-3 UNLESS ANCHORING DEVICES AND/OR REINFORCEMENT IS NOTED TO REMAIN FOLLOWING DEMOLITION, REMOVE AND/OR BURN BACK ANCHORS AND REINFORCEMENT STEEL 1/2" MIN BELOW SURFACE AND VOIDS CREATED SHALL BE FILLED WITH NON-SHRINK GROUT.
- D-4 EMBEDDED CONDUIT ENCOUNTERED DURING DEMOLITION WORK LIMITS SHALL BE PERMANENTLY REROUTED AS NECESSARY. CONTRACTOR SHALL SUBMIT PROPOSED MEANS OF REROUTING ANY INTERFERING CONDUIT.
- D-5 WHERE DRAWINGS INDICATE A CONCRETE EQUIPMENT PAD TO BE DEMOLISHED, THE FLOOR SLAB SURFACE SHALL BE REPAIRED AS APPROVED BY ENGINEER. FOLLOWING SELECT DEMOLITION AND REMOVAL OF THE EQUIPMENT PAD REMOVAL THE REPAIR SHALL BE:  
A. SAWCUT THE FLOOR AROUND THE EQUIPMENT PAD PERIMETER TO A DEPTH OF 1/4".  
B. SCARIFY AND REMOVE SLAB CONCRETE WITHIN THE PERIMETER TO A NOMINAL 1/4" DEPTH CLEAN AND REMOVE ALL CONCRETE LAITANCE.  
C. RESURFACE THE AREA BY APPLYING A POLYMER MODIFIED OR SILICA FUME ENHANCED CEMENTITIOUS REPAIR MORTAR, APPROVED BY THE ENGINEER, FOLLOWING THE MANUFACTURER'S SURFACE PREPARATION AND APPLICATION RECOMMENDATIONS. LEVEL AND FINISH THE SURFACE TO MATCH THE FLOOR SLAB SURROUNDING AREA.
- D-6 PRIOR TO DEMOLITION OF SMALL OPENINGS (LESS THAN 6 INCHES IN SIZE) FOR PENETRATIONS, ETC., CONTRACTOR SHALL USE NON-DESTRUCTIVE MEANS TO FIELD LOCATE REINFORCEMENT. OPENINGS SHALL BE LOCATED TO AVOID CUTTING THROUGH EXISTING REINFORCEMENT, IF POSSIBLE. EXISTING REINFORCEMENT SHALL NOT BE CUT WITHOUT APPROVAL OF ENGINEER.
- D-7 CONCRETE SURFACES LEFT EXPOSED FOLLOWING DEMOLITION SHALL BE SEALED WITH EPOXY RESIN COATING SUCH AS "SIKAGARD" BY SIKA CORPORATION, "DURACOTE 240" BY TAMMS INDUSTRIES, OR APPROVED EQUAL. EPOXY RESIN COATING SHALL NOT BE USED IN OZONE CONTRACTOR CHAMBERS.
- D-8 A DETAILED CONSTRUCTION AND DEMOLITION PLAN SHALL BE SUBMITTED TO THE ENGINEER AND APPROVED BY THE ENGINEER AND OWNER PRIOR TO BEGINNING CONSTRUCTION. ANY SHUTDOWNS SHALL BE SUBMITTED TO, COORDINATED WITH, AND APPROVED BY THE OWNER. ONCE APPROVED, CONTRACTOR SHALL PROVIDE A MINIMUM OF THREE (3) WEEKS NOTICE TO OWNER PRIOR TO SHUTDOWN.

**STRUCTURAL METALS**

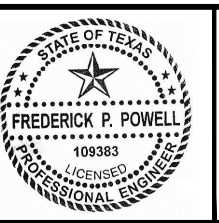
- M-1 DETAIL, FABRICATE, AND ERECT STRUCTURAL STEEL IN ACCORDANCE WITH AISC SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS, ALLOWABLE STRESS DESIGN AND PLASTIC DESIGN, LATEST EDITION.
- M-2 STEEL MATERIAL:  
A) STRUCTURAL TUBING: ASTM A500, GRADE B OR A501 (42 KSI)  
B) STRUCTURAL PIPE: ASTM A53, TYPE E OR S, GRADE B (35 KSI)  
C) PLATES AND ANGLES: ASTM A36 UNO (36 KSI)  
D) STRUCTURAL W SHAPES: ASTM A992 (50 KSI)  
E) STRUCTURAL S, M, C & H SHAPES: ASTM A572 GRADE 50 (50 KSI)
- M-3 PROVIDE MINIMUM 3/4" DIAMETER ASTM A325 HIGH STRENGTH BOLTS WITH SNUG TIGHTENED TYPE N CONNECTIONS FOR STRUCTURAL STEEL UNLESS NOTED OTHERWISE. HOLES FOR BOLTS SHALL BE STANDARD SIZE UNLESS NOTED OTHERWISE.
- M-4 PROVIDE TYPICAL STEEL BEAM CONNECTIONS FOR A CAPACITY OF NOT LESS THAN THE TOTAL UNIFORM LOAD CAPACITY TABULATED IN THE AISC TABLES FOR ALLOWABLE LOADS OF BEAMS UNLESS NOTED OTHERWISE. FIELD CONNECTIONS SHALL BE BOLTED, UNLESS NOTED OTHERWISE.
- M-5 DO NOT PAINT STEEL SURFACES WHICH ARE TO BE WELDED OR ARE TO BE ENCASED IN CONCRETE.
- M-6 ALL STAINLESS STEEL FABRICATIONS EXPOSED TO UNDERWATER SERVICE SHALL BE TYPE 316. ALL OTHER STAINLESS STEEL FABRICATIONS SHALL BE TYPE 304 UNLESS NOTED OTHERWISE.
- M-7 ALUMINUM SHALL BE ALLOY 6061-T6 UNLESS NOTED OTHERWISE.
- M-8 ALL BOLTS, ANCHOR BOLTS, AND CONCRETE ANCHORS CONNECTING ALUMINUM SHALL BE STAINLESS STEEL TYPE 316 FOR UNDERWATER APPLICATIONS AND TYPE 304 FOR ALL OTHER APPLICATIONS. ALL EQUIPMENT ANCHOR BOLTS DIMENSIONS AND LOCATIONS SHALL BE VERIFIED FROM CERTIFIED VENDOR DRAWINGS PRIOR TO CONSTRUCTION.
- M-9 DETAIL, FABRICATE, AND ERECT ALUMINUM IN ACCORDANCE WITH THE LATEST EDITION OF THE ALUMINUM ASSOCIATION ALUMINUM DESIGN MANUAL.
- M-10 ALUMINUM SHALL BE ISOLATED FROM CONTACT WITH CONCRETE AND DISSIMILAR METALS.
- M-11 ALL GROOVE AND BUTT WELDS SHALL BE FULL PENETRATION.
- M-12 FILLET WELD SIZES SHALL NOT BE LESS THAN THE MINIMUM SIZE REQUIRED BY AISC CODE FOR PLATE SIZES TO BE CONNECTED AND SHALL BE APPLIED TO THE ENTIRE JOINT CONTACT LENGTH, AND NOT LESS THAN 3/16".
- M-13 BOTTOM SURFACES OF BASE PLATES SHALL BE GROUTED TO ENSURE FULL BEARING CONTACT WITH CONCRETE SLAB.
- M-14 WHENEVER ONE MEMBER IS FASTENED TO ANOTHER WITH FASTENINGS (BOLTS, WELDS, ETC.) SET AT A UNIFORM SPACING, THERE SHALL BE A MINIMUM OF TWO FASTENINGS PER PIECE CONNECTED AND THE FIRST AND LAST FASTENINGS SHALL BE LOCATED NOT TO EXCEED 0.25 OF FASTENER SPACING FROM EACH END.
- M-15 BOLTED CONNECTIONS FOR STRUCTURAL STEEL SHALL BE ASSEMBLED AND INSPECTED IN ACCORDANCE WITH RCSC 2009 (SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH-STRENGTH BOLTS).
- M-16 STRUCTURAL WELDED JOINTS SHALL CONFORM TO THE PROVISIONS OF AWS D1.1-10, AWS E70 ELECTRODE, STRUCTURAL WELDING CODE BY AMERICAN WELDING SOCIETY. PROOF OF WELDER CERTIFICATION SHALL BE AVAILABLE AT THE JOB SITE DURING TIMES OF INSPECTION.
- M-17 ELEVATIONS OF BEAMS SHOWN ON FRAMING PLANS REFER TO TOP OF FLANGE, UNLESS NOTED OTHERWISE.

FILED BY: G. JOHNSON; DATE: 03/09/18; TIME: 11:12 AM; LOCATION: 3000 E. 14TH ST., SUITE 1100, EL PASO, TX 79902

				PROJECT ENGINEER: A. CHACON
				DESIGNED BY: G. JOHNSON/F. POWELL
				DRAWN BY: G. JOHNSON
				CHECKED BY: C. PHILLIPS
				IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE
REV	ISSUED FOR	DATE	BY	

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*Frederick P. Powell*  
FREDERICK P. POWELL  
109383  
LICENSED PROFESSIONAL ENGINEER  
LICENSE NO.: 110810 DATE: 03/09/18



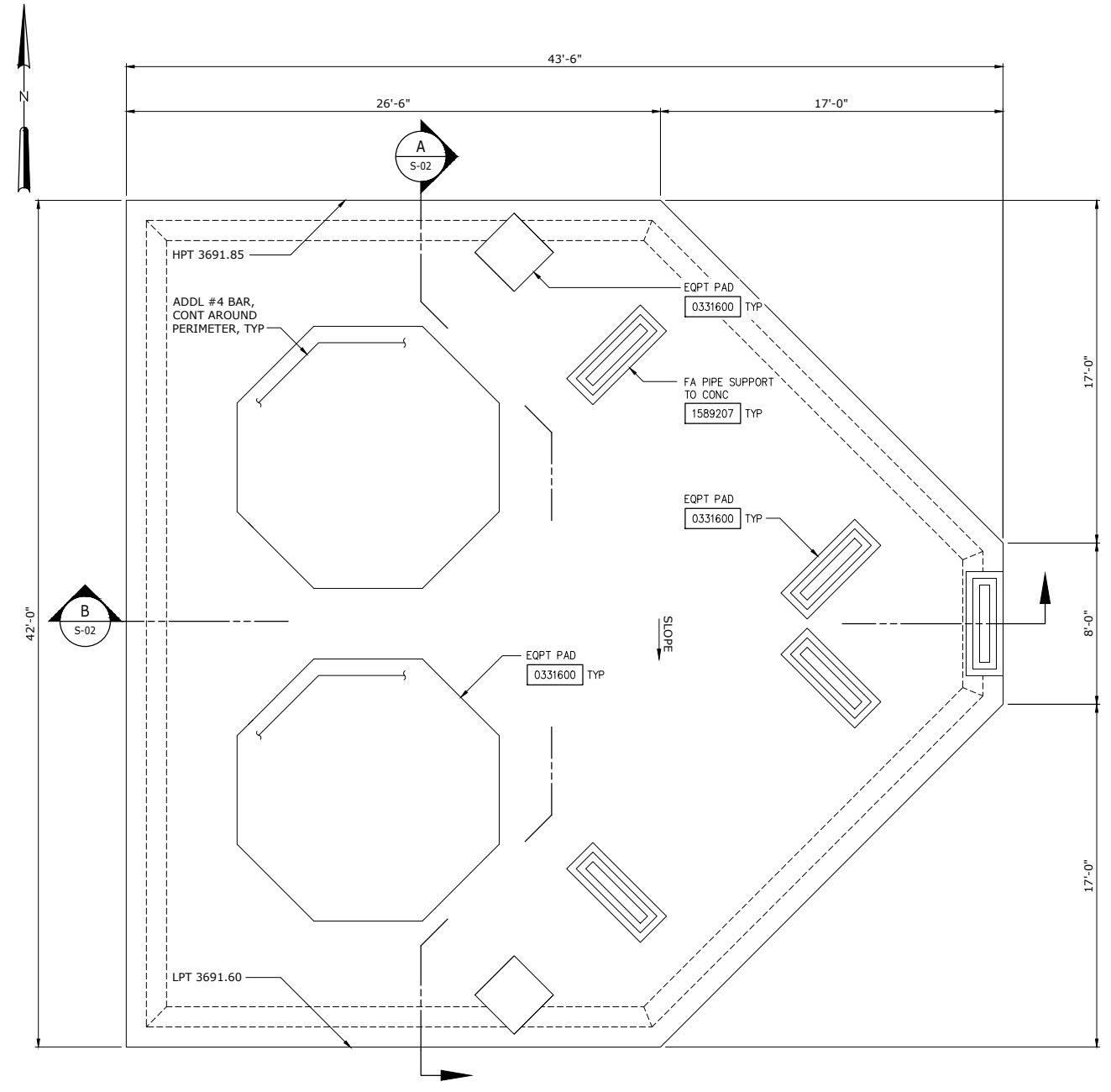
**Hazen**  
HAZEN AND SAWYER  
444 EXECUTIVE CENTER BOULEVARD,  
SUITE 200  
EL PASO, TX 79902

**el paso WATER**  
HASKELL R. STREET WASTEWATER TREATMENT  
PLANT ODOR CONTROL - HEADWORKS

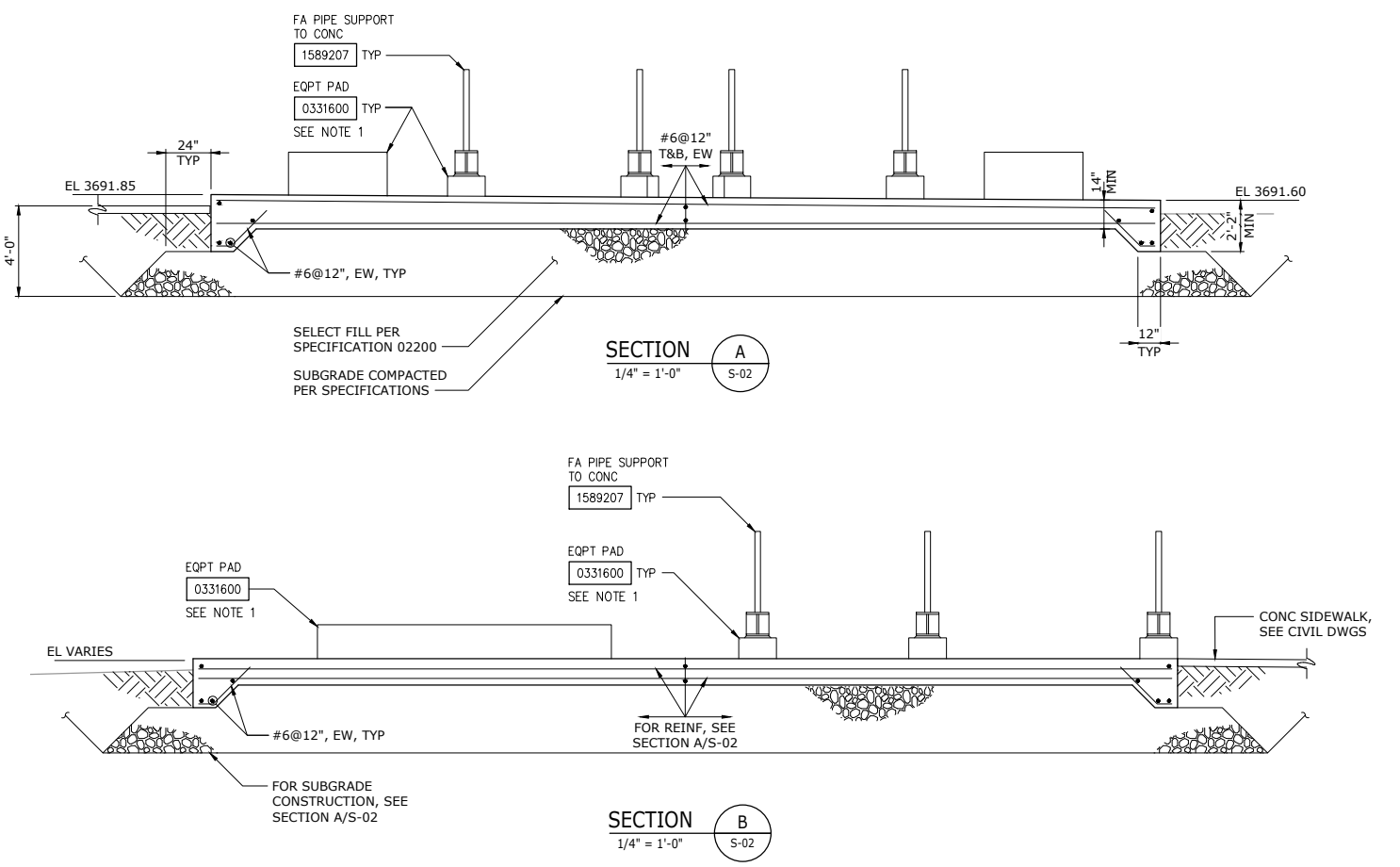
STRUCTURAL  
GENERAL NOTES

DATE:	MARCH 2018
HAZEN NO.:	60701-011
CONTRACT NO.:	01
DRAWING NUMBER:	S-01

**NOTES:**  
 1. ELEVATIONS TO BE COORDINATED BY CONTRACTOR BASED ON EQUIPMENT REQUIRED.



**BOTTOM PLAN**  
 1/4" = 1'-0"



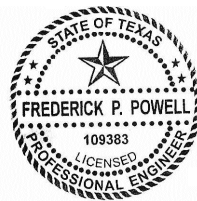
**SECTION A**  
 1/4" = 1'-0"

**SECTION B**  
 1/4" = 1'-0"

File: HASKELL R. STREET WASTEWATER TREATMENT PLANT ODOR CONTROL HEADWORKS.dwg, Date: 3/20/2018, 1:12 PM  
 PLOT DATE: 3/20/2018 1:12 PM BY: GJOHNSON

REV	ISSUED FOR	DATE	BY

PROJECT ENGINEER: **A. CHACON**  
 DESIGNED BY: **G. JOHNSON/F. POWELL**  
 DRAWN BY: **G. JOHNSON**  
 CHECKED BY: **C. PHILLIPS**  
 IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

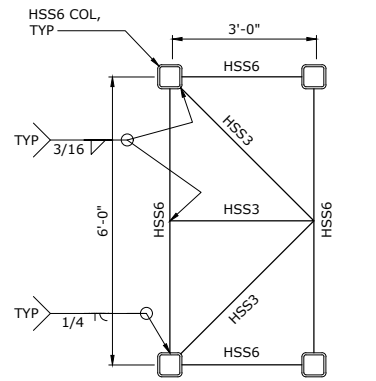
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 LICENSE NO.: 110810 DATE: 03/09/18

  
**Hazen**  
 HAZEN AND SAWYER  
 444 EXECUTIVE CENTER BOULEVARD,  
 SUITE 200  
 EL PASO, TX 79902

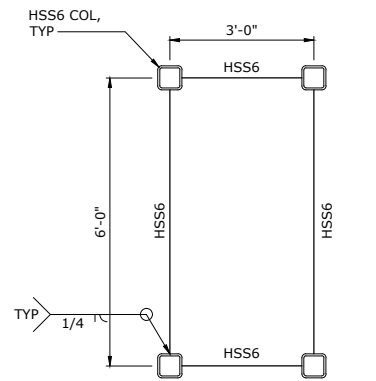
  
**el paso WATER**  
 HASKELL R. STREET WASTEWATER TREATMENT  
 PLANT ODOR CONTROL - HEADWORKS

STRUCTURAL  
 ODOR CONTROL PLAN

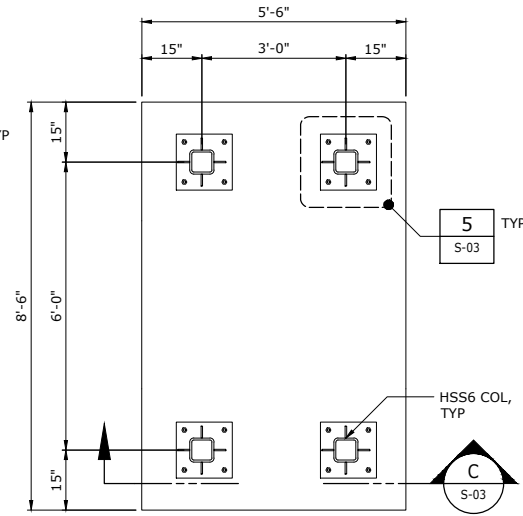
DATE: MARCH 2018  
 HAZEN NO.: 60701-011  
 CONTRACT NO.: 01  
 DRAWING NUMBER:  
**S-02**



FRAMING PLAN EL 3708.50

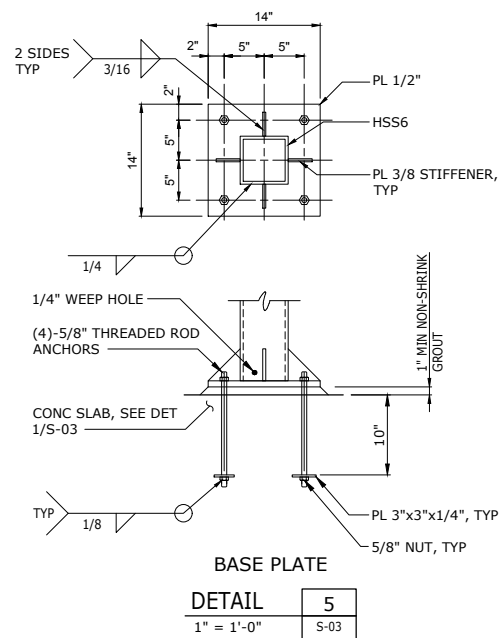


FRAMING PLAN EL 3704.50, 3700.50 & 3696.50

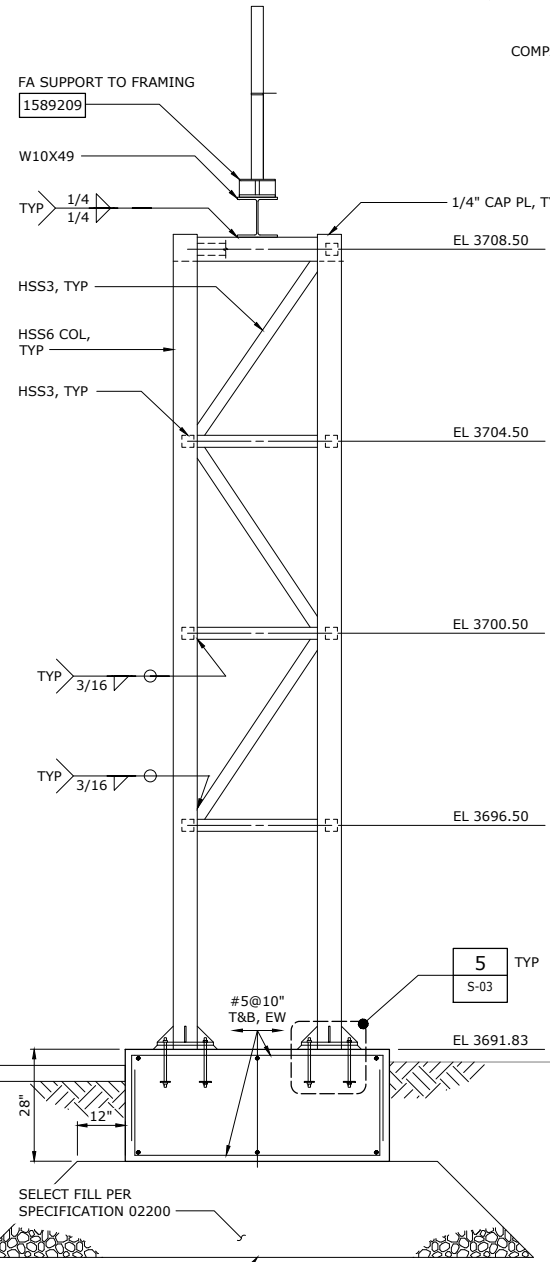


BOTTOM PLAN EL 3691.83

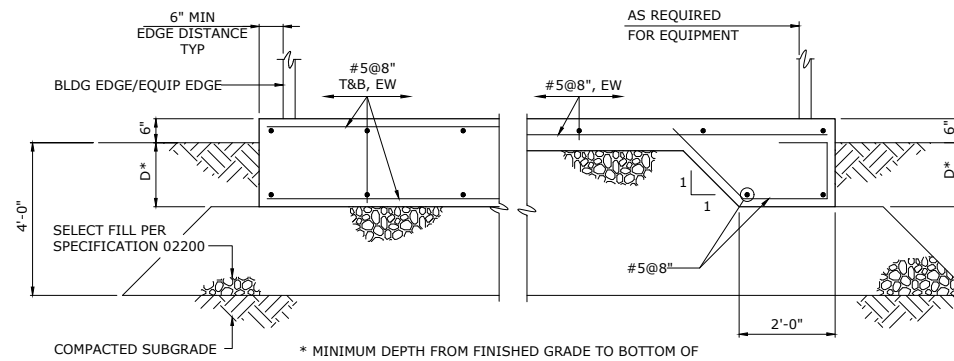
DETAIL 1  
1/2" = 1'-0" M-04



BASE PLATE  
DETAIL 5  
1" = 1'-0" S-03

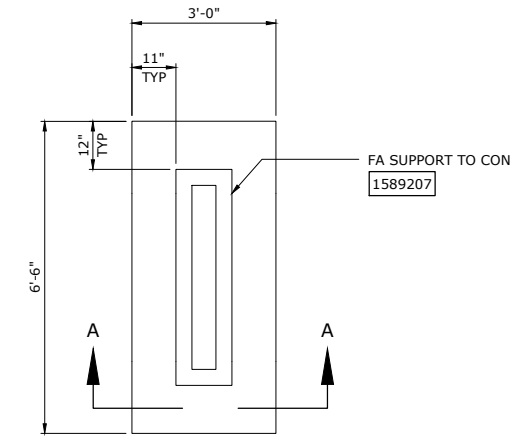


SECTION C  
1/2" = 1'-0" S-03

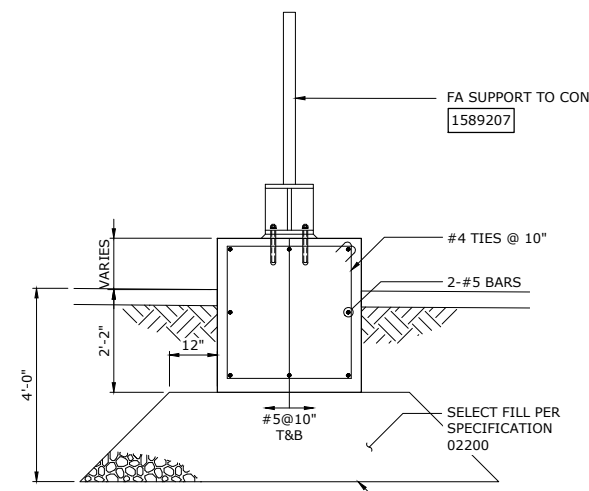


NOTES:  
1. UNLESS NOTED OTHERWISE, CONTRACTOR SHALL HAVE THE OPTION OF PLACING EQUIPMENT FOUNDATION WITH A CONSTANT THICKNESS OF D + 6" OR AS AN 8" SLAB WITH THICKENED EDGE AROUND THE FOUNDATION PERIMETER.

EXTERIOR EQUIPMENT FOUNDATION  
0331607

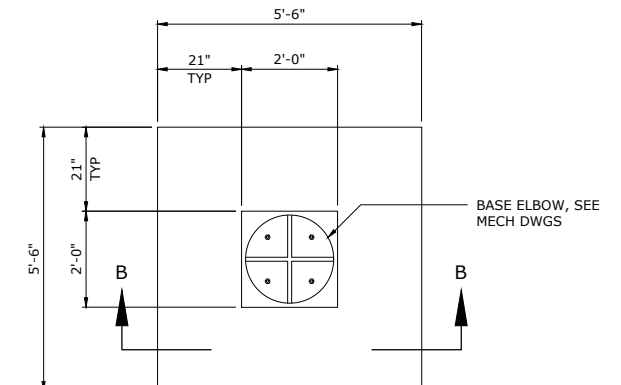


PLAN

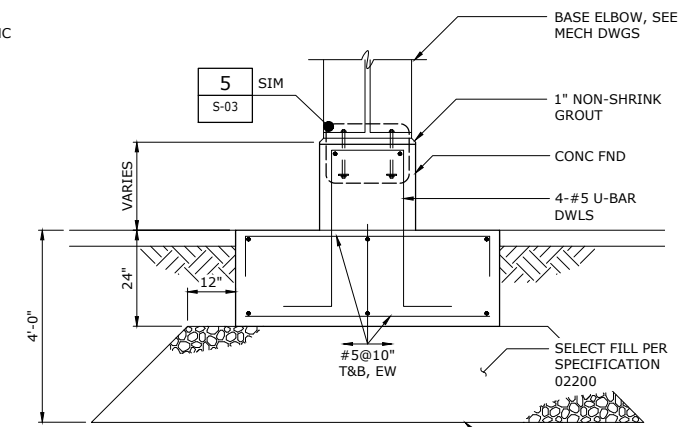


SECTION A-A

DETAIL 2  
1/2" = 1'-0" M-04



PLAN



SECTION B-B

DETAIL 3  
1/2" = 1'-0" M-04

NOTES:

- ALL STRUCTURAL FRAMING MEMBERS AND CONNECTING ELEMENTS SHALL BE GALVANIZED STRUCTURAL STEEL PER SPECIFICATION SECTION 05035.
- HSS6 DENOTES HSS6x6x3/8  
HSS3 DENOTES HSS3x3x1/4
- PROVIDE 1/4"Ø WEEP HOLES IN HSS MEMBERS FOR DRAINAGE.

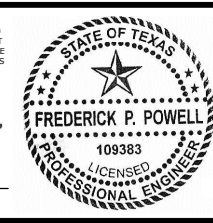
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REV	ISSUED FOR	DATE	BY

PROJECT ENGINEER:	A. CHACON
DESIGNED BY:	G. JOHNSON/F. POWELL
DRAWN BY:	G. JOHNSON
CHECKED BY:	C. PHILLIPS
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	

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*Frederick P. Powell*  
**FREDERICK P. POWELL**  
 109383  
 LICENSED PROFESSIONAL ENGINEER  
 LICENSE NO.: 110810 DATE: 03/09/18



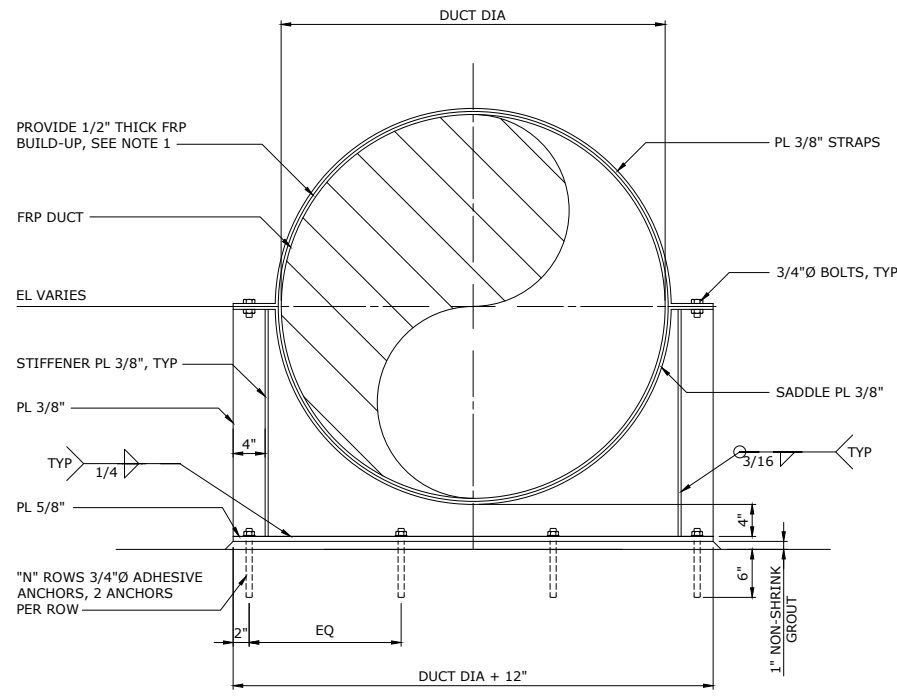
**Hazen**  
 HAZEN AND SAWYER  
 444 EXECUTIVE CENTER BOULEVARD,  
 SUITE 200  
 EL PASO, TX 79902



HASKELL R. STREET WASTEWATER TREATMENT  
 PLANT ODOR CONTROL - HEADWORKS

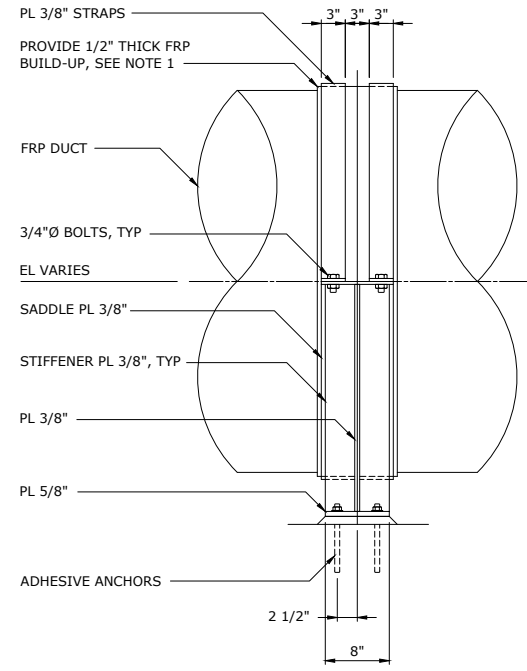
STRUCTURAL  
 SECTIONS AND DETAILS

DATE:	MARCH 2018
HAZEN NO.:	60701-011
CONTRACT NO.:	01
DRAWING NUMBER:	S-03

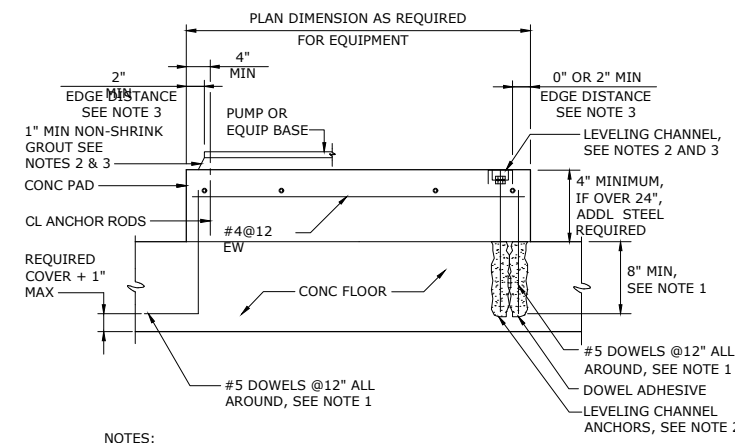


DUCT DIA	"N"
42" - 60"	5
72" - 84"	6

SUPPORT FOR 42" TO 84" FA  
DUCT ON CONCRETE  
1589207

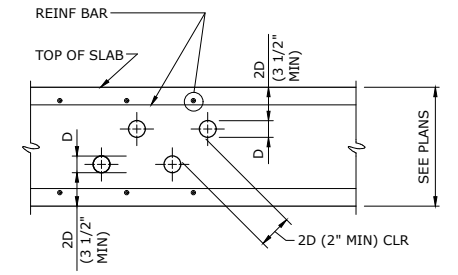


- NOTES:
- PROVIDE 1/4" NEOPRENE PAD (DUROMETER 50) CONTINUOUS BETWEEN FRP BUILD-UP & STRAPS/SADDLE PLATE.
  - PIPE SUPPORT STRUCTURAL MEMBERS, CONNECTING ELEMENTS AND SADDLE ASSEMBLY SHALL BE GALVANIZED STRUCTURAL STEEL.



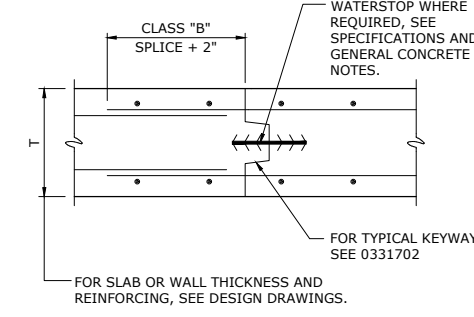
- NOTES:
- DOWELS MAY BE CAST IN WITH 90° HOOK OR ANCHORED WITH DOWEL ADHESIVE AT CONTRACTOR'S OPTION. WHERE FLOOR IS 8" THICK OR LESS, USE #4 DOWELS EMBEDDED TO WITHIN 2" OF BOTTOM OF FLOOR SLAB.
  - THE CONTRACTOR SHALL PROVIDE LEVELING CHANNELS AND LEVELING CHANNEL ANCHORS FOR SWITCHGEAR, SWITCHBOARDS, MOTOR CONTROL CENTERS, AND SIMILAR EQUIPMENT WHEN REQUIRED TO MEET EQUIPMENT MANUFACTURER'S LEVELING TOLERANCES. THE CONTRACTOR SHALL PROVIDE 1" MINIMUM NON-SHRINK GROUT FOR PUMPS AND SIMILAR EQUIPMENT WHEN REQUIRED TO MEET EQUIPMENT MANUFACTURER'S UNIFORM BEARING AND LEVELING REQUIREMENTS.
  - PRIOR TO PLACING CONCRETE PAD, LEVELING CHANNEL SIZE AND MEANS OF INSTALLATION, ANCHORAGE, GROUT, CONCRETE EDGE DISTANCE, AND CONCRETE BLOCKOUTS REQUIREMENTS SHALL BE COORDINATED WITH EQUIPMENT MANUFACTURER.
  - COAT DISSIMILAR MATERIALS PER THE CONTRACT DOCUMENTS.
  - STAGGER CHANNEL ANCHORS AND PAD DOWELS.

TYP EQUIP PAD  
0331600

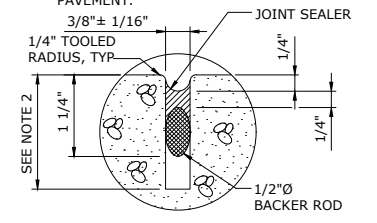


NOTE:  
D DENOTES PIPE OR CONDUIT OD  
PIPE OR CONDUIT EMBEDDED IN SLAB  
0331604

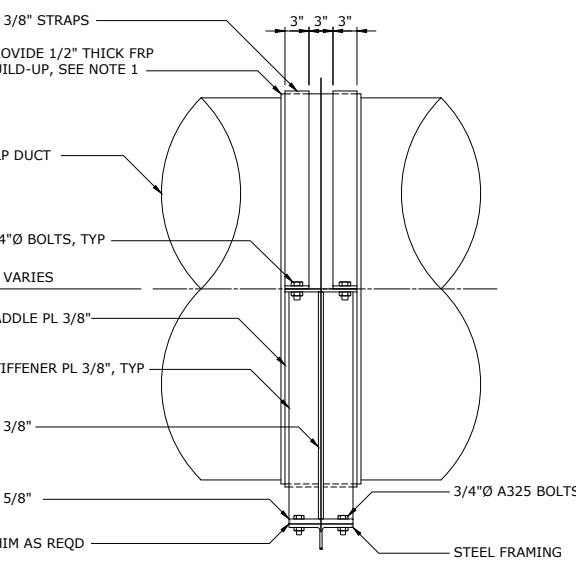
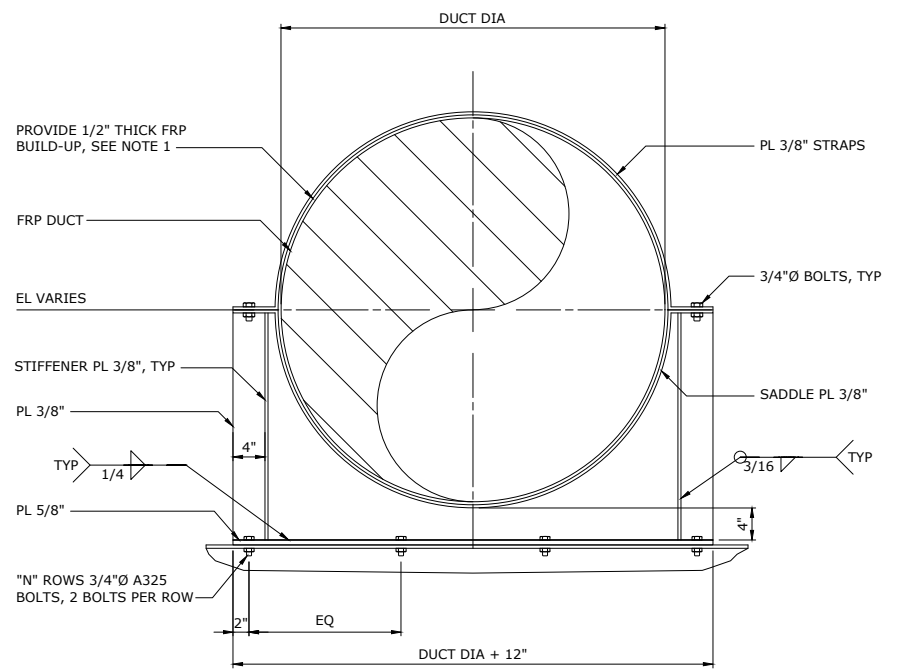
- NOTES:
- VERTICAL JOINTS SHALL BE FORMED BY AN APPROVED JOINT INSERT. HORIZONTAL JOINTS SHALL BE FORMED BY AN APPROVED JOINT INSERT OR SAWCUTTING PERFORMED PER SPECIFICATION.
  - DEPTH SHALL BE 1 1/2" IN REINF CONC. DEPTH SHALL BE 1/3 OF CONCRETE THICKNESS IN UNREINFORCED CONCRETE PAVEMENT.



TYPICAL CONSTRUCTION JOINT  
0331701



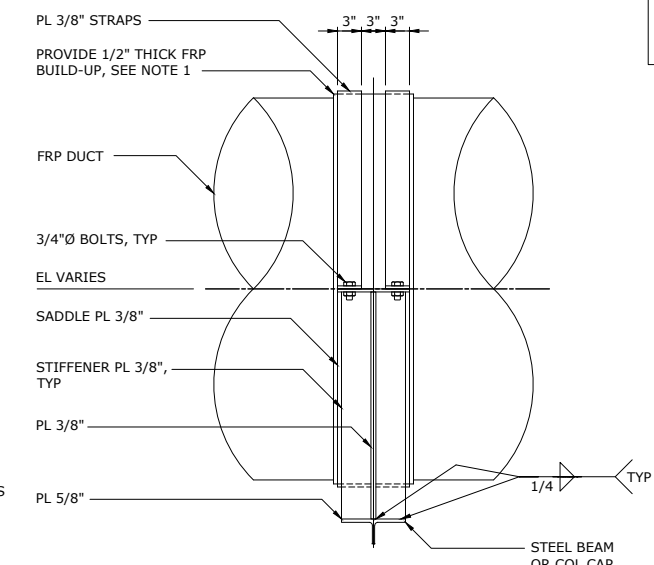
TYPICAL SEALED JOINT  
0325101



DUCT DIA	"N"
42" - 60"	5
72" - 84"	6

SUPPORT FOR 42" TO 84" FA  
DUCT ON STEEL, BOLTED  
1589209

- NOTES:
- PROVIDE 1/4" NEOPRENE PAD (DUROMETER 50) CONTINUOUS BETWEEN FRP BUILD-UP & STRAPS/SADDLE PLATE.
  - PIPE SUPPORT STRUCTURAL MEMBERS, CONNECTING ELEMENTS AND SADDLE ASSEMBLY SHALL BE GALVANIZED STRUCTURAL STEEL.



WELDED CONNECTION

BASIC DEVELOPMENT LENGTH AND SPLICE LENGTH FOR UNCOATED BARS IN TENSION									
** BASED ON MATERIALS AND CONDITIONS AS FOLLOWS: fy = 60,000 psi CLEAR COVER ≥ 1.5 INCHES fc' = 4000 psi OR GREATER NORMAL WEIGHT CONCRETE									
BASIC DEVELOPMENT LENGTH 1.3 d				BAR SIZE	CLASS B SPLICE LENGTH 1.3 d				
CLEAR SPACING ≥ 3"		CLEAR SPACING < 3"			CLEAR SPACING ≥ 3"		CLEAR SPACING < 3"		
BASIC	TOP *	BASIC	TOP *	BASIC	TOP *	BASIC	TOP *		
1'-0"	1'-0"	1'-0"	1'-4"	# 3	1'-0"	1'-3"	1'-4"	1'-8"	
1'-0"	1'-3"	1'-7"	2'-1"	# 4	1'-3"	1'-8"	2'-1"	2'-9"	
1'-3"	1'-7"	2'-4"	3'-0"	# 5	1'-7"	2'-0"	3'-0"	3'-11"	
1'-6"	1'-11"	3'-1"	4'-0"	# 6	1'-11"	2'-5"	4'-0"	5'-2"	
2'-5"	3'-1"	4'-11"	6'-4"	# 7	3'-1"	4'-0"	6'-4"	8'-3"	
3'-0"	3'-11"	6'-0"	7'-9"	# 8	3'-11"	5'-1"	7'-9"	10'-1"	
3'-8"	4'-9"	6'-9"	8'-9"	# 9	4'-9"	6'-3"	8'-9"	11'-4"	
4'-6"	5'-10"	7'-7"	9'-10"	# 10	5'-10"	7'-7"	9'-10"	12'-9"	
5'-5"	7'-0"	8'-5"	10'-11"	# 11	7'-0"	9'-1"	10'-11"	14'-2"	

\* TOP REINFORCEMENT IS ANY HORIZONTAL REINFORCEMENT SO PLACED THAT MORE THAN 12 INCHES OF FRESH CONCRETE IS CAST IN THE MEMBER BELOW THE REINFORCEMENT.  
\*\*FOR MATERIALS OR CONDITIONS DIFFERENT FROM THOSE STATED, LENGTHS SHOWN IN CHART SHALL BE MODIFIED TO CONFORM TO THE PROVISIONS OF ACI 318, SECTION 12.2.

0321004

FILE: H:\PROJECTS\1589209\1589209.dwg Date: 3/20/18 3:21 PM PLOT DATE: 3/20/18 1:17 PM BY: GJOHNSON

PROJECT ENGINEER:	A. CHACON
DESIGNED BY:	G. JOHNSON/F. POWELL
DRAWN BY:	G. JOHNSON
CHECKED BY:	C. PHILLIPS
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	0 1/2" 1"

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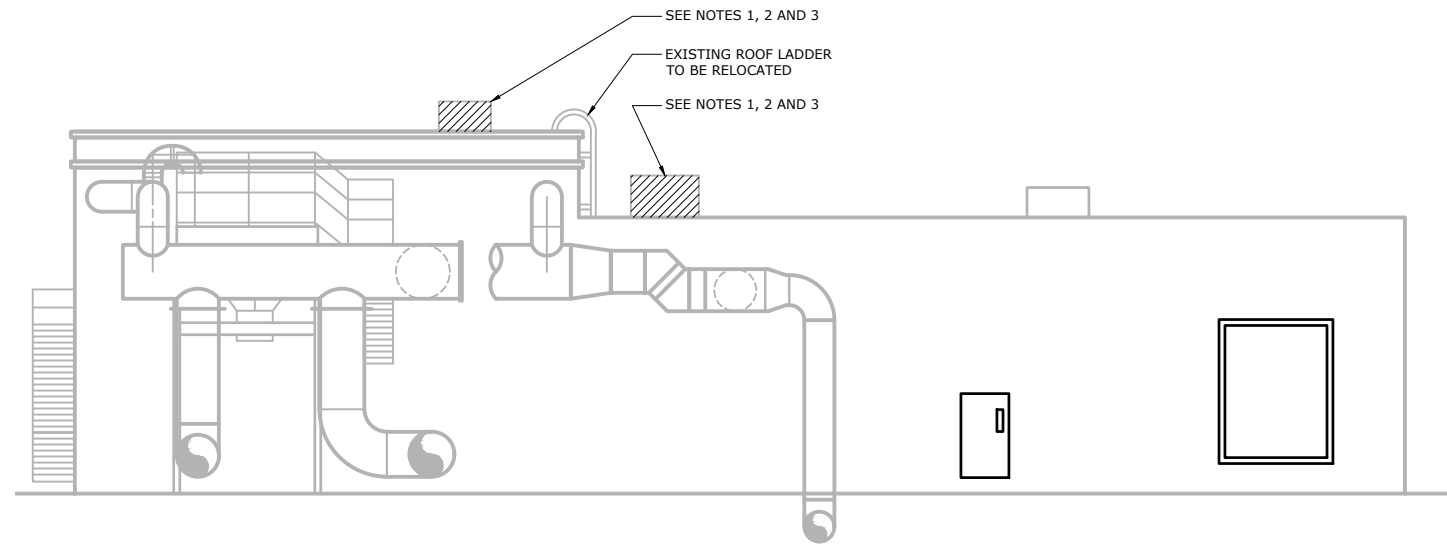
*Frederick P. Powell*  
FREDERICK P. POWELL  
109383  
LICENSED PROFESSIONAL ENGINEER  
LICENSE NO.: 110810 DATE: 03/09/18

**Hazen**  
HAZEN AND SAWYER  
444 EXECUTIVE CENTER BOULEVARD,  
SUITE 200  
EL PASO, TX 79902

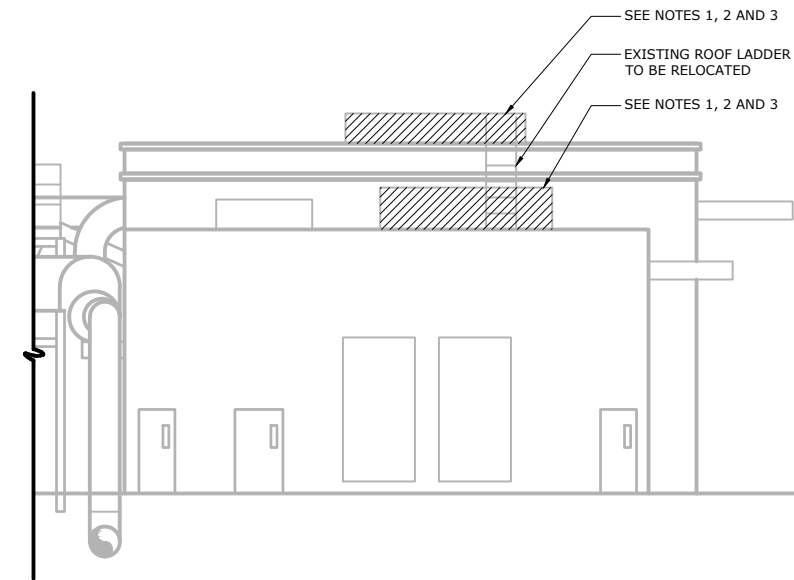
**el paso WATER**  
HASKELL R. STREET WASTEWATER TREATMENT  
PLANT ODOR CONTROL - HEADWORKS

STRUCTURAL  
TYPICAL DETAILS

DATE:	MARCH 2018
HAZEN NO.:	60701-011
CONTRACT NO.:	01
DRAWING NUMBER:	S-04



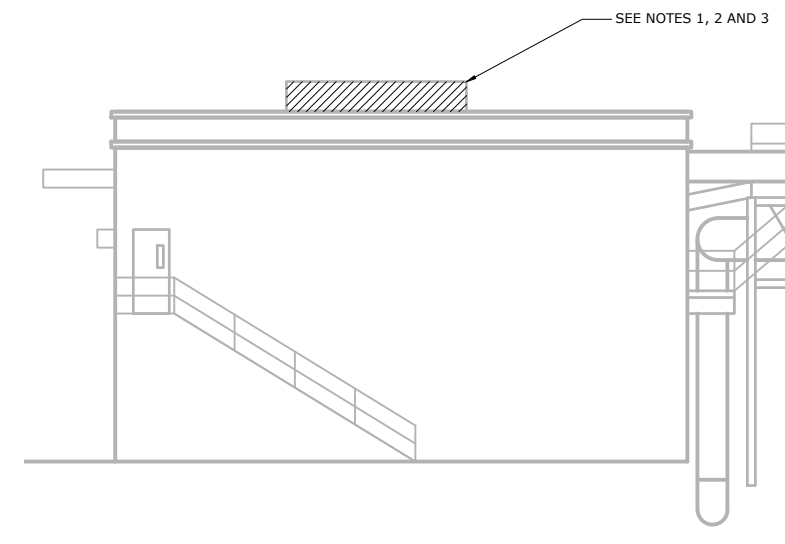
**SOUTH ELEVATION - DEMOLITION**  
1/8" = 1'-0"



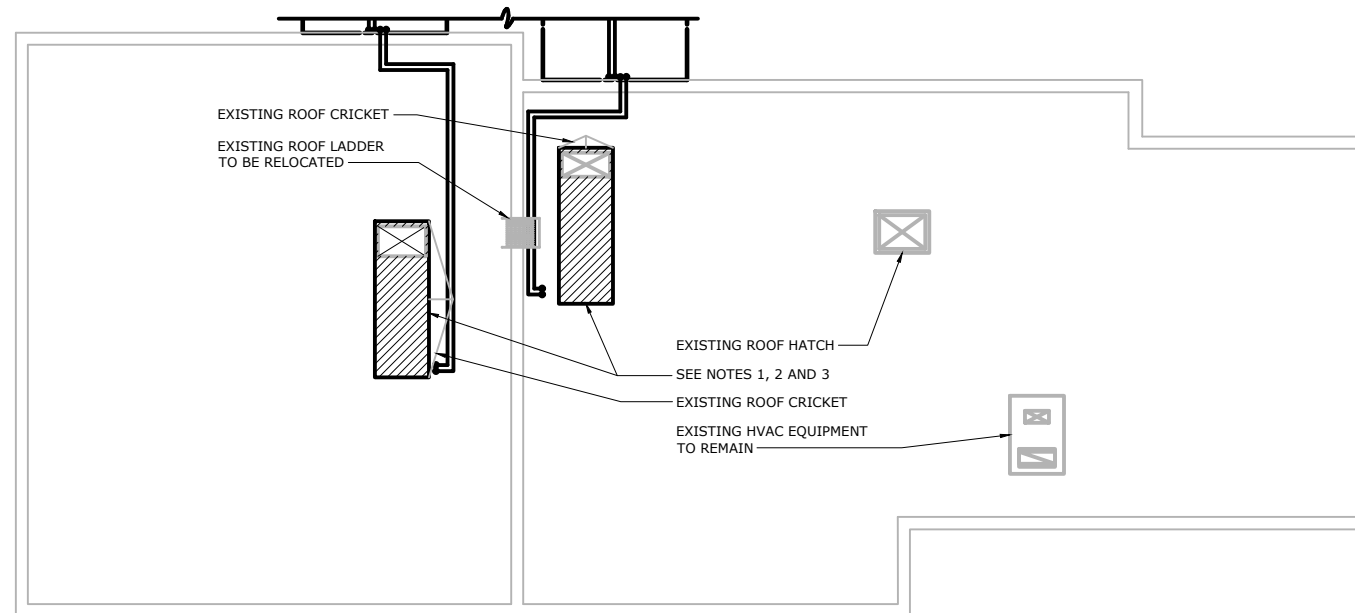
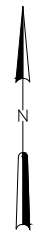
**EAST ELEVATION - DEMOLITION**  
1/8" = 1'-0"

**NOTES:**

1. REMOVE HVAC SYSTEM. SEE HVAC DWGS.
2. REMOVE ADDITIONAL ROOF SYSTEM AS REQUIRED TO INSTALL CURBS, PIPE PENETRATIONS, CONDUITS, ETC. PROTECT ADJACENT ROOF SURFACES FROM DAMAGE.
3. REPAIR DAMAGED AREAS IN ACCORDANCE WITH WARRANTY REQUIREMENTS OF EXISTING BUILT-UP ROOF SYSTEM.



**WEST ELEVATION - DEMOLITION**  
1/8" = 1'-0"



**ROOF PLAN - DEMOLITION**  
1/8" = 1'-0"

File: C:\60701-ELP\60701-01\DRAWINGS\MARCH\40-A-01-ROOF PLAN\_DEMO.dwg, 3/20/18 4:40 PM, PLOT DATE: 3/12/2018 1:51 PM, BY: LMOLINA

REV	ISSUED FOR	DATE	BY

PROJECT ENGINEER:	A. CHACON
DESIGNED BY:	W.H. RUSSELL
DRAWN BY:	L. MOLINA
CHECKED BY:	W.H. RUSSELL
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	

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W.H. Russell  
3/9/18

LICENSE: 23360 DATE: 03/09/18

**Hazen**

HAZEN AND SAWYER  
444 EXECUTIVE CENTER BOULEVARD,  
SUITE 200  
EL PASO, TX 79902

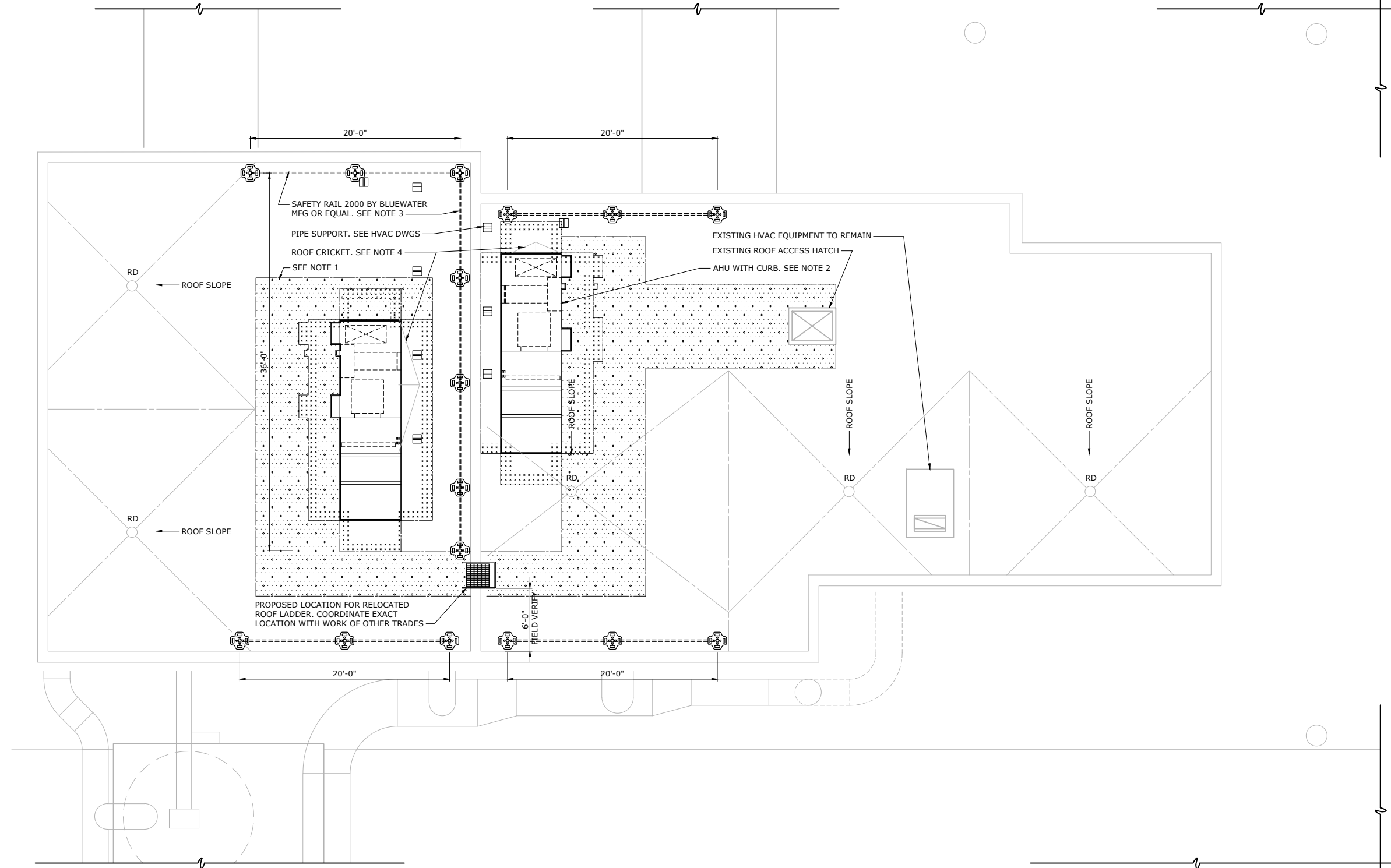
**el paso WATER**

HASKELL R. STREET WASTEWATER TREATMENT  
PLANT ODOR CONTROL - HEADWORKS

ARCHITECTURAL  
HEADWORKS BLDG  
DEMOLITION DRAWINGS

DATE:	MARCH 2018
HAZEN NO.:	60701-011
CONTRACT NO.:	01
DRAWING NUMBER:	A-01

- NOTES:
1. ASPHALT WALKWAY PADS MOP TO EXISTING BUILT-UP ROOF SYSTEM
  2. CUT EXISTING ROOF SYSTEM BACK AS REQUIRED TO INSTALL ROOF CURB AND PITCH POCKET. SEE DETAILS ON SHEET A-03
  3. OSHA COMPLIANT NO PENETRATING. RAILING SHALL BE PROVIDED TO OSHA COMPLIANT FALL PROTECTION. PROVE ALL ACCESSORIES FOR A COMPLETE AND COMPLIANT INSTALLATION
  4. MODIFY INSULATION AND ROOFING AS REQUIRED TO CREATE DRAINAGE TO ROOF DRAIN



LEGEND

- INDICATES EQUIPMENT CLEARANCE AREA
- INDICATES ASPHALT WALKWAY PADS AREA
- RD ROOF DRAIN

ROOF PLAN  
3/16" = 1'-0"

File: C:\60701-ELP\60701-01\DRAWINGS\ARCH\140A-01\_ROOF PLAN\_NEW.dwg, Saved by: L.MOLINA, Sheet date: 3/22/18 4:41 PM, PLOT DATE: 3/12/2018 1:54 PM, BY: L.MOLINA

REV	ISSUED FOR	DATE	BY

PROJECT ENGINEER:	A. CHACON
DESIGNED BY:	W. H. RUSSELL
DRAWN BY:	L. MOLINA
CHECKED BY:	W.H. RUSSELL
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	

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W. H. RUSSELL  
3/9/18

LICENSE: 23360 DATE: 03/09/18

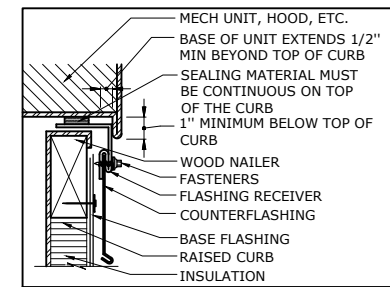
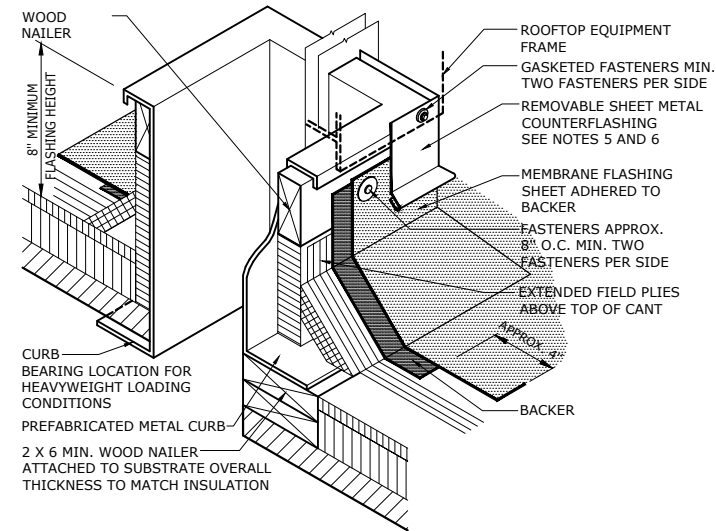
**Hazen**

HAZEN AND SAWYER  
444 EXECUTIVE CENTER BOULEVARD,  
SUITE 200  
EL PASO, TX 79902

HASKELL R. STREET WASTEWATER TREATMENT  
PLANT ODOR CONTROL - HEADWORKS

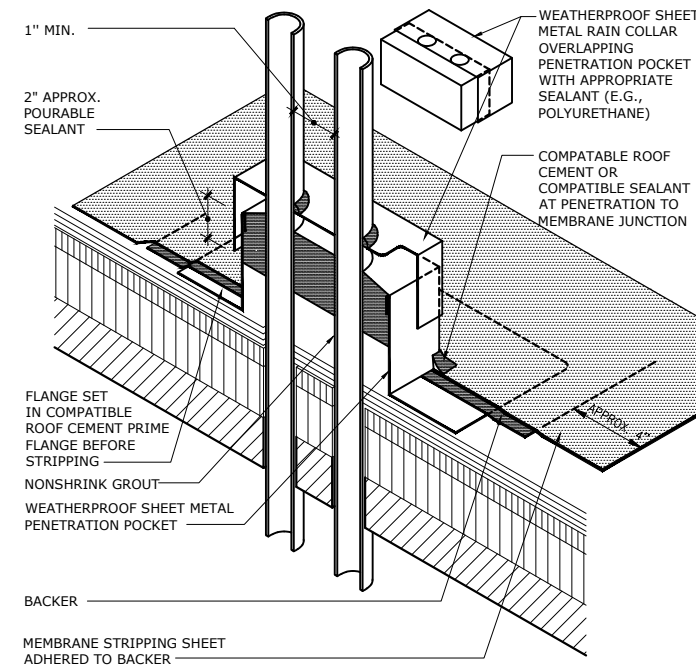
ARCHITECTURAL  
HEADWORKS BLDG  
ROOF PLAN

DATE:	MARCH 2018
HAZEN NO.:	60701-011
CONTRACT NO.:	01
DRAWING NUMBER:	A-02



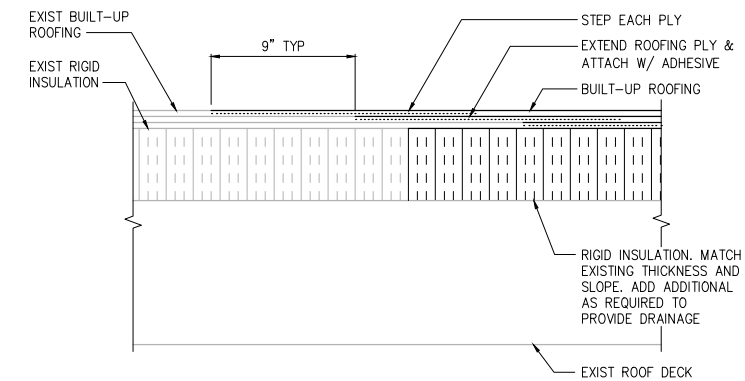
METAL CURB FLASHING @ BUILT-UP ROOFING

DETAIL	1
1/8"=1'-0"	A03



PITCH POCKET @ BUILT-UP ROOFING

DETAIL	2
1"=1'-0"	A03



BUILT-UP ROOF TIE-IN

DETAIL	3
1"=1'-0"	A03

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PROJECT ENGINEER:	A. CHACON
DESIGNED BY:	W. H. RUSSELL
DRAWN BY:	L. MOLINA
CHECKED BY:	W. H. RUSSELL
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	

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W. H. RUSSELL  
3/9/18

LICENSE: 23360 DATE: 03/09/18

**Hazen**

HAZEN AND SAWYER  
444 EXECUTIVE CENTER BOULEVARD,  
SUITE 200  
EL PASO, TX 79902

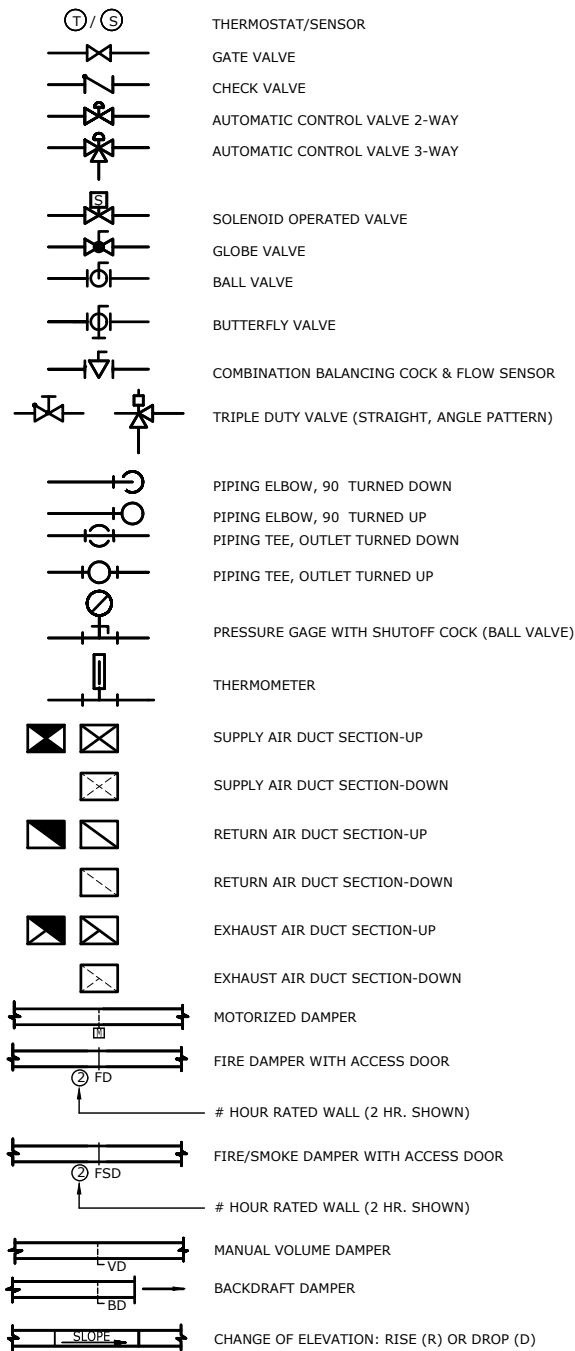
**el paso WATER**

HASKELL R. STREET WASTEWATER TREATMENT  
PLANT ODOR CONTROL - HEADWORKS

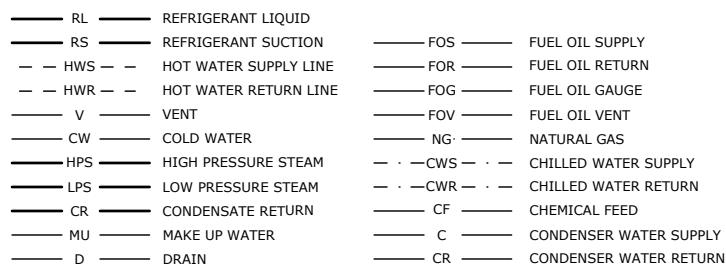
ARCHITECTURAL  
HEADWORKS BLDG  
DETAILS

DATE:	MARCH 2018
HAZEN NO.:	60701-011
CONTRACT NO.:	01
DRAWING NUMBER:	A-03

**SYMBOLS**

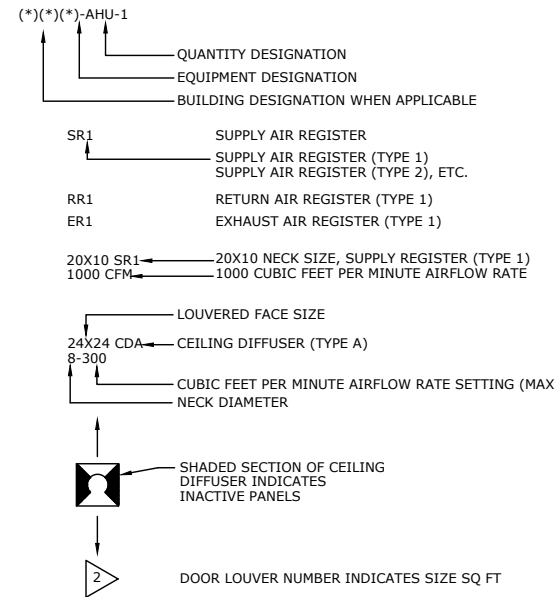


**LINETYPES**



**ABBREVIATIONS**

A AMBER	L1 LOUVER (TYPE 1) L1
AC AIR CONDITIONING, AIR CONDITIONING UNIT	LAT LEAVING AIR TEMPERATURE
ACCU AIR COOLED CONDENSING UNIT	LD1 LINEAR DIFFUSER (TYPE 1)
ACC AIR COOLED CONDENSER	LF LINEAR FEET
AD ACCESS DOOR	LR LINEAR RETURN
AFF ABOVE FINISHED FLOOR	LWT LEAVING WATER TEMPERATURE
AFUE ANNUAL FUEL UTILIZATION EFFICIENCY	MAU MAKEUP AIR UNIT
AFS AIRFLOW SWITCH	MBH 1,000 BTU PER HOUR
AHU AIR HANDLING UNIT	MC MECHANICAL CONTRACTOR
AI ANALOG INPUT	MCA MINIMUM CIRCUIT AMPACITY
AO ANALOG OUTPUT	MCD MOISTURE CONDENSATE DRAIN
APD AIR PRESSURE DROP	MD MOTORIZED DAMPER
ATC AUTOMATIC TEMPERATURE CONTROL	MTD MOUNTED
ATU AIR TERMINAL UNIT	NC NORMALLY CLOSED, NOISE CRITERIA
B BOILER	NK NECK
BD GRAVITY BACKDRAFT DAMPER	NO NORMALLY OPEN
BFP BACKFLOW PREVENTER	NTS NOT TO SCALE
BHP BRAKE HORSEPOWER	OA OUTSIDE AIR
BOD BOTTOM OF DUCT	OAI OUTSIDE AIR INTAKE
BOR BOTTOM OF REGISTER	ORP OXYGEN REDUCTION POTENTIAL
BOT BOTTOM	P PUMP
C COOLING	PC PLUMBING CONTRACTOR
CB CIRCUIT BREAKER	PD PRESSURE DROP
CFM CUBIC FEET OF STANDARD AIR PER MINUTE	PF PROPELLER FAN
CH CABINET UNIT HEATER	PH, Ø PHASE
CLG CEILING	PPU POSITIVE PRESSURIZATION UNIT
CONN CONNECTION	PROP PROPELLER
CWS CHILLED WATER SUPPLY	PRV PRESSURE REGULATING VALVE
CWR CHILLED WATER RETURN	PTAC PACKAGED TERMINAL AIR CONDITIONING UNIT
DB DRY BULB	PS PRESSURE SENSOR
DDC DIRECT DIGITAL CONTROL	PW POTABLE WATER
DX DIRECT EXPANSION REFRIGERANT	R RED
DI DIGITAL INPUT	RA RETURN AIR
DIA., Ø DIAMETER	RH RELATIVE HUMIDITY
DM DAMPER MOTOR	RL REFRIGERANT LIQUID
DN DOWN	RLA RATED LINE AMPS
DO DIGITAL OUTPUT	RS REFRIGERANT SUCTION
DX DIRECT EXPANSION	RPM REVOLUTIONS PER MINUTE
EA EXHAUST AIR	SA SUPPLY AIR
EC ELECTRICAL CONTRACTOR	SD SMOKE DETECTOR
EAT ENTERING AIR TEMPERATURE	SF SUPPLY AIR FAN
EDH ELECTRIC DUCT HEATER	SHR SENSIBLE HEAT RATIO
EUH ELECTRIC UNIT HEATER	SP STATIC PRESSURE
EF EXHAUST FAN	SPEC SPECIFICATION
EL/E/EV ELEVATION	SS STAINLESS STEEL
ES ENTHALPY SENSOR	SV SOLENOID VALVE
ESP EXTERNAL STATIC PRESSURE	TEMP TEMPERATURE
ET EXPANSION TANK	TF TRANSFER FAN
EWT ENTERING WATER TEMPERATURE	TH TOTAL HEAT
FA FREE AREA	TOD TOP OF DUCT
FC FORWARD CURVED OR FAN COIL	TOU TOP OF UNIT
FD FIRE DAMPER WITH ACCESS DOOR	TOR TOP OF REGISTER
FLA FULL LOAD AMPS	TSP TOTAL STATIC PRESSURE
FOR FUEL OIL RETURN	TS TEMPERATURE SENSOR
FOS FUEL OIL SUPPLY	TYP TYPICAL
FOV FUEL OIL VENT	UH UNIT HEATER
FPM FEET PER MINUTE	V VOLTS
FS FLOW SWITCH	VAV VARIABLE AIR VOLUME
FTR FINNED TUBE RADIATION	VD VOLUME DAMPER
GC GENERAL CONTRACTOR	VEL VELOCITY
GPM GALLONS PER MINUTE	VH HEATING CONTROL VALVE
H HEATING	VC COOLING CONTROL VALVE
HG HOT GAS	VFD VARIABLE FREQUENCY DRIVE
HP HORSEPOWER OR HEAT PUMP	VVT VARIABLE VOLUME AND VARIABLE TEMPERATURE
HV HEATING AND VENTILATING UNIT	W WHITE
HWS HOT WATER SUPPLY	WPD WATER PRESSURE DROP
HWR HOT WATER RETURN	W/ WITH
IDEC INDIRECT EVAPORATIVE COOLING	WB WET BULB
IN. WG INCHES OF WATER GAGE	WC WATER COLUMN
KW KILOWATT (1,000 WATTS)	



**GENERAL NOTES**

- THE SYMBOLS AND ABBREVIATIONS LIST ON THIS SHEET IS A COMPREHENSIVE STANDARD GUIDE INTENDED FOR GENERAL USE ON ALL PROJECTS. THEREFORE NOT ALL THE SYMBOLS AND ABBREVIATIONS CONTAINED IN THIS LIST ARE NECESSARILY USED ON THIS PARTICULAR PROJECT AND SHOULD BE USED FOR CLARIFICATION ONLY.
- ALL DUCT DIMENSIONS ARE CLEAR DIMENSIONS TO INSIDE OF DUCT. DIMENSIONS TO DUCTS FROM FLOOR OR WALL SHALL BE TO THE OUTSIDE OF DUCT/INSULATION. WHERE INTERNAL INSULATION IS REQUIRED THE DUCT SIZE SHALL BE INCREASED TO GIVE CLEAR INSIDE DIMENSIONS AS NOTED ON THE DRAWINGS.
- EQUIPMENT SIZES AND LOCATIONS ARE APPROXIMATE. ACTUAL DIMENSIONS TO BE DETERMINED BY EQUIPMENT FURNISHED. COORDINATE HVAC WORK WITH THE WORK OF ALL OTHER TRADES.
- FINAL OPENING DIMENSIONS, CONCRETE PAD SIZES, AND LOCATIONS MUST BE COORDINATED DURING CONSTRUCTION WITH APPROVED EQUIPMENT.
- FINAL SIZES OF FLOOR OPENINGS, DUCT PLENUMS, TRANSITIONS AND PIPING CONNECTIONS TO ALL EQUIPMENT SHALL BE DETERMINED BY EQUIPMENT FURNISHED.
- THE DRAWINGS ARE SCHEMATIC IN NATURE AND SHOW INTENDED GENERAL LOCATION OF HVAC EQUIPMENT AND SYSTEMS. NOT ALL OFFSETS AND REQUIRED FITTINGS FOR ACTUAL FIELD INSTALLATION ARE INTENDED TO BE SHOWN FOR INSTALLATION OF SYSTEMS IN THE SPACE AVAILABLE IN CONSIDERATION OF WORK OF OTHER TRADES AND FIELD CONDITIONS. CONTRACTOR SHALL PROVIDE ADDITIONAL OFFSETS IN DUCTWORK AND PIPING AS REQUIRED TO AVOID SUCH INTERFERENCES OR FIELD CONDITIONS AT NO ADDITIONAL COST TO THE ORIGINAL CONTRACT AMOUNT.
- FIRST FIGURE OF DUCT SIZE INDICATES DIMENSION OF FACE SHOWN OR INDICATED OR WIDTH OF DUCT IN PLAN VIEW.
- COORDINATE THE REQUIREMENTS FOR HVAC OPENINGS AND SLEEVES IN BUILDING ELEMENTS WITH THE GC.
- CONTRACTOR SHALL REFER TO SPECIFICATION SECTION 09900 FOR PAINTING REQUIREMENTS UNLESS OTHERWISE NOTED.
- REFER TO ELECTRICAL DRAWINGS OR SPECIFICATIONS FOR INTERLOCKING WIRING REQUIREMENTS.
- CONTRACTOR SHALL COORDINATE DUCTWORK INSTALLATION WITH OTHER TRADES SO THAT THE DUCTWORK IS INSTALLED BEFORE THE PIPING, LIGHTING AND ELECTRICAL CONDUIT.
- PROVIDE ADEQUATE SUPPORT, PER THE MANUFACTURER'S RECOMMENDATIONS, FOR ALL HVAC EQUIPMENT.
- CONTRACTOR SHALL BE RESPONSIBLE FOR CHECKING ELECTRICAL RATINGS FROM CERTIFIED DRAWINGS OF EQUIPMENT AND SHALL MAKE ANY BRANCH CIRCUIT DISTRIBUTION MODIFICATION REQUIREMENTS WITHOUT ANY ADDITIONAL COST TO OWNER. THE CONTRACTOR SHALL SUBMIT A SCHEDULE OF SUCH CHANGES FOR APPROVAL BY ENGINEER.
- WHEREVER THE REQUIREMENTS AND REGULATIONS OF STATE, FEDERAL AND LOCAL AUTHORITIES HAVING JURISDICTION DIFFER FROM THE DRAWINGS OR SPECIFICATIONS, THEY SHALL TAKE PRECEDENCE AND SHALL BE MADE PART OF THE CONTRACT (EXCEPT WHERE THE DRAWINGS OR SPECIFICATIONS ARE MORE STRINGENT).
- THE CONTRACTOR SHALL PROVIDE AND INSTALL FIRE AND SMOKE RATED DAMPERS IN HVAC DUCTS WHICH PENETRATE FIRE RATED BUILDING ASSEMBLIES AS IDENTIFIED ON ARCHITECTURAL DRAWINGS.
- DUCTWORK AND PLENUM TO LOUVERS SHALL BE CONNECTED TO FRAMED OPENINGS AND SEALED AIRTIGHT AND WEATHER RESISTANT.
- THERMOSTATS, SENSORS, AND/OR CONTROL PANEL LOCATIONS SHOWN ARE APPROXIMATE AND SHALL BE COORDINATED TO SUIT FIELD CONDITIONS.
- INSTALL WALL MTD SENSORS, CONTROLS AND THERMOSTATS 5'-0" AFF UNLESS OTHERWISE NOTED. ALIGN WITH OTHER NEARBY ITEMS SUCH AS LIGHT SWITCHES. DO NOT INSTALL CLOSER THAN 6-INCHES FROM EDGE OF DOOR FRAME OR CORNER OF WALL AS SHOWN ON ARCH PLANS. WHERE CONFLICTS MAY OCCUR WITH ITEMS SUCH AS LIGHT SWITCHES, MOUNT THE SENSOR OR CONTROL DEVICE 4'-6" AFF CENTERED ABOVE THE LIGHT SWITCH.
- PROVIDE ADEQUATE MEANS OF ACCESS CLEARANCE FOR ALL HVAC/MECHANICAL EQUIPMENT AND SYSTEMS THAT REQUIRE ACCESS FOR PROPER OPERATION, MAINTENANCE AND REPAIR PER RECOMMENDED MANUFACTURER CLEARANCES. PROVIDE ACCESS DOORS WHERE NECESSARY IN FINISHED WALLS OR DRYWALL CEILINGS FOR ACCESS TO VALVES, DAMPERS, OR CONTROL DEVICES.
- COORDINATE THE REQUIREMENTS OF HVAC HANGERS AND SUPPORTS W/ OTHER SUB CONTRACTORS PROVIDING STRUCTURAL AND/OR ARCHITECTURAL BUILDING ELEMENTS WHICH HVAC SUPPORTS SHALL INTERFACE.
- HVAC CONTRACTOR SHALL PROVIDE ALL FIRESTOPPING AND PIPE SLEEVES FOR ALL PIPE AND DUCT PENETRATIONS THRU FIRE RATED BUILDING ASSEMBLIES.
- CONTRACTOR SHALL OBTAIN AND PAY ALL FEES RELATED TO PERMITTING, AND INSPECTIONS.
- FOR ADDITIONAL REQUIREMENTS REFER TO SPECIFICATIONS.
- ALL INTERIOR DUCT HANGERS AND SUPPORT SYSTEMS SHALL BE DESIGN PROFESSIONAL ENGINEER REGISTERED IN TEXAS. DETAILED DRAWINGS AND CALCULATIONS FOR SUPPORT MEMBERS AND CONCRETE ANCHORAGE SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER CURRENTLY REGISTERED IN THE STATE OF TEXAS. SUPPORT SYSTEMS SHALL NOT ATTACH TO THE BOTTOM OF THE DOUBLE TEE WEB MEMBERS WHICH CONTAINS PRESTRESSING STRANDS. REINFORCEMENT AND PRESTRESSING STRANDS SHALL BE LOCATED BY NON-DESTRUCTIVE METHODS PRIOR TO ANCHOR INSTALLATION AND NOT CUT DURING DRILLING.

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 BY: MBAUTISTA

PROJECT ENGINEER:	A. CHACON		
DESIGNED BY:	R. VAN DYKE		
DRAWN BY:	R. VAN DYKE		
CHECKED BY:	N. BARTLEY		
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE			
REV	ISSUED FOR	DATE	BY

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 NORMAN BARTLEY  
 LICENSE NO.: 119731 DATE: 03/09/18

**Hazen**  
 HAZEN AND SAWYER  
 444 EXECUTIVE CENTER BOULEVARD,  
 SUITE 200  
 EL PASO, TX 79902

**el paso WATER**  
 HASKELL R. STREET WASTEWATER TREATMENT  
 PLANT ODOR CONTROL - HEADWORKS

<b>HVAC LEGEND &amp; GENERAL NOTES</b>	
DATE:	MARCH 2018
HAZEN NO.:	60701-011
CONTRACT NO.:	01
DRAWING NUMBER:	H-01



NFPA OUTSIDE AIR CALCULATIONS	
<b>INFLUENT PUMP ROOM</b>	<b>SCREEN ROOM</b>
VOLUME OF INFLUENT PUMP ROOM = 20,832 CUBIC FEET	VOLUME OF SCREEN ROOM = 24,104 CUBIC FEET
OA REQUIRED PER 2016 NFPA 820 = 12 AIR CHANGES PER HOUR FOR CLASS I, DIVISION II	OA REQUIRED PER 2016 NFPA 820 = 12 AIR CHANGES PER HOUR FOR CLASS I, DIVISION II
OA REQUIRED = 12 ACH X 20,832 CUBIC FEET / 60 MINUTES PER HOUR = 4,168 CFM	OA REQUIRED = 12 ACH X 24,104 CUBIC FEET / 60 MINUTES PER HOUR = 4,820 CFM
OA PROVIDED BY HW-MAU-4 = 5,210 CFM / EXHAUST PROVIDED BY ODOR CONTROL SYSTEM = 5,735 CFM	OA PROVIDED BY HW-MAU-3 = 8,050 CFM / EXHAUST PROVIDED BY ODOR CONTROL SYSTEM = 8,845 CFM
<b>WET WELL</b>	<b>INFLUENT METER ROOM</b>
VOLUME OF WET WELL = 22,050 CUBIC FEET	VOLUME OF INFLUENT METER ROOM = 15,840 CUBIC FEET
OA REQUIRED PER 2016 NFPA 820 = 12 AIR CHANGES PER HOUR FOR CLASS I, DIVISION II	OA REQUIRED PER 2016 NFPA 820 = 12 AIR CHANGES PER HOUR FOR CLASS I, DIVISION II
OA REQUIRED = 12 ACH X 22,050 CUBIC FEET / 60 MINUTES PER HOUR = 4,410 CFM	OA REQUIRED = 12 ACH X 15,840 CUBIC FEET / 60 MINUTES PER HOUR = 3,168 CFM
OA PROVIDED BY HW-MUA-4 = 4,410 CFM / EXHAUST PROVIDED BY ODOR CONTROL SYSTEM = 4,845 CFM	OA PROVIDED BY HW-MUA-5 = 4,000 CFM / EXHAUST PROVIDED BY ODOR CONTROL SYSTEM = 4,400 CFM

DESIGN TEMPERATURE CONDITIONS	
<b>OUTSIDE</b>	<b>ELECTRICAL ROOMS</b>
WINTER: 21° F DB	WINTER: 60° F
SUMMER: 101.0° F DB / 64.0° F WB	SUMMER: 78° F DB
<b>PROCESS AREAS</b>	
	WINTER: 50° F
	SUMMER: 85° F DB

**CUSTOM AIR HANDLING UNIT SCHEDULE**

UNIT No.	LOCATION	AREA SERVED	PERFORMANCE CRITERIA BASIS	TYPE	HEATING SECTION		UNIT WEIGHT (LBS)	FAN DATA					TSP	GAS HEAT MBH IN/OUT	TOTAL COOLING MBH	SENSIBLE COOLING MBH	FILTER		ELECTRICAL			NOTES
					TYPE	TEMP RISE		RPM/BHP	CFM	H.P.	E.S.P.	OA CFM					SQ FT	FPM	MCA	MOCP	VOLTS/Ø	
HW-MAU-3	HEADWORKS ROOF	SCREEN ROOM	INNOVENT CAHU-8600-DX-IF-460	CUSTOM-MAKE-UP-AIR	INDIRECT NG FIRED	43.1° F	4,300	1,702/6.2	8,050	10	1.5	8,050	3.0"	500/400	215.0	215.0	19.9	430	15.3	25	460 / 3	1,2,3,4,5,6
HW-MAU-4	HEADWORKS ROOF	INFLUENT PUMP, WET WELL	INNOVENT CAHU-9600-DX-IF-460	CUSTOM-MAKE-UP-AIR	INDIRECT NG FIRED	46.2 F	4,400	1,817/7.2	9,620	10	1.5	9,620	3.0"	600/480	229.1	229.1	20	481	15.3	25	460 / 3	1,2,3,4,5,6
HW-MAU-5	HEADWORKS	INFLUENT METER RM	INNOVENTCAHU-4000-AC-IF-460	CUSTOM-MAKE-UP-AIR	INDIRECT NG FIRED	46.3° F	4,200	1,919/2.7	4,000	5	1.5	4,000	2.75"	250/200	93.5	93.5	8	500	24.6	35	460 / 3	1,2,3,4,5,6

NOTES:  
1. FIELD MOUNTED CONTROLS BY SUPPLIER.  
2. SINGLE POINT POWER CONNECTION.  
3. INDIRECT-FIRED NATURAL GAS, 5:1 TURN-DOWN ON BURNER.  
4. SEE SPECIFICATION 15584.  
5. VENTILATION SYSTEM REQUIRED TO REDUCE AREA CLASSIFICATION PER NFPA 820.  
6. DOUBLE WALL STAINLESS STEEL UNIT.

REMARKS:  
1. GAS PRESSURE TO BURNER TO BE 11" W.C..

**AIR COOLED CONDENSING UNIT SCHEDULE**

UNIT No.	LOCATION	AREA SERVED	PERFORMANCE CRITERIA BASIS	NOMINAL TONNAGE	REFRIGERANT				AMBIENT TEMP. °F	UNIT WEIGHT (LBS)	CONDENSER FAN DATA					TOTAL COOLING MBH	SENSIBLE COOLING MBH	ELECTRICAL			NOTES
					TYPE	CHARGE	LIQUID	SUCTION			QTY	CFM	H.P.	RPM	FLA			MCA	MOCP	VOLTS/Ø	
HW-CU-3	HEADWORKS	SCREEN ROOM	TRANE RAUJC2 20	20	R-410a	43.0 LB	5/8"	1-5/8"	105	1,870	2	8,590	1	1,140	1.8	262.1	262.1	46.0	60	460 / 3	1,2,3,4,5,6
HW-CU-4	HEADWORKS	INFLUENT PUMP, WET WELL	TRANE RAUJC2 25	25	R-410a	43.0 LB	7/8"	1-5/8"	105	1,870	3	9,620	1	1,140	1.8	323.1	323.1	52.0	70	460 / 3	1,2,3,4,5,6



NOTES:  
1. FIELD MOUNTED CONTROLS BY SUPPLIER.  
2. SINGLE POINT POWER CONNECTION.  
3. HERESITE COATED COILS.  
4. SEE SPECIFICATION 15675.

**AIR DEVICE SCHEDULE**

MARK No.	LOCATION	AREA SERVED	MANUFACTURER & MODEL No.	MATERIAL	FACE SIZE (INCHES)	MAX. S.P. IN WG	MOUNTING	NOTES
RG1	VARIOUS	VARIOUS	TITUS 350RL-SS	STAINLESS STEEL	SEE PLANS	0.1	SEE PLANS	2
EG1	VARIOUS	VARIOUS	TITUS 350RL-SS	STAINLESS STEEL	SEE PLANS	0.1	SEE PLANS	2
SG1	VARIOUS	VARIOUS	TITUS 300RL-SS	STAINLESS STEEL	SEE PLANS	0.1	SEE PLANS	1

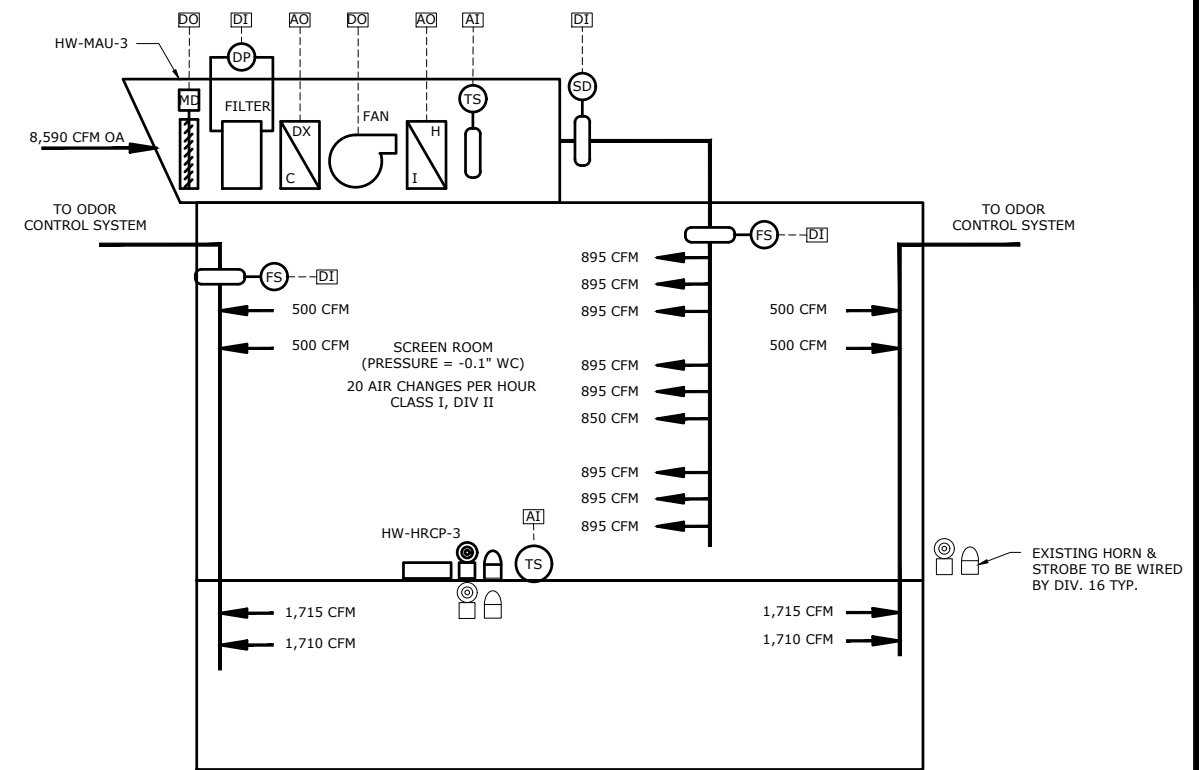
NOTES:  
1. WITH DOUBLE DEFLECTION, 3/4" BLADE SPACING AND OPPOSED BLADE DAMPER.  
2. DOUBLE DEFLECTION, 45 DEGREE DEFLECTION, 3/4" BLADE SPACING AND OPPOSED BLADE DAMPER.  
3. PROVIDE 1" X 1" X 0.08 GAGE, SS WIRE MESH SCREEN IN BOTTOM OF DUCT.

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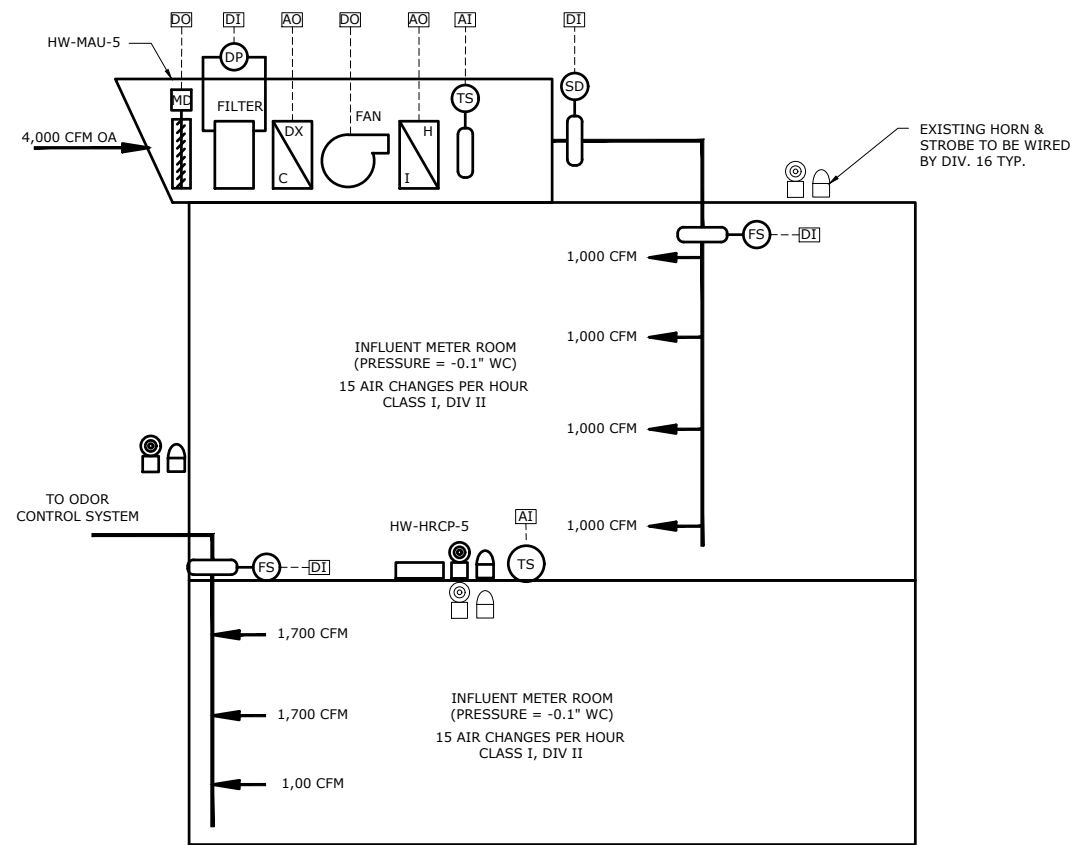
PROJECT ENGINEER: A. CHACON		 <p>HAZEN AND SAWYER  444 EXECUTIVE CENTER BOULEVARD,  SUITE 200  EL PASO, TX 79902</p>	 <p>HASKELL R. STREET WASTEWATER TREATMENT  PLANT ODOR CONTROL - HEADWORKS</p>	<p align="center"><b>HVAC SCHEDULES</b></p>	DATE: MARCH 2018
DESIGNED BY: R. VAN DYKE					HAZEN NO.: 60701-011
DRAWN BY: R. VAN DYKE					CONTRACT NO.: 01
CHECKED BY: N. BARTLEY					DRAWING NUMBER: H-02
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	LICENSE NO.: 119731 DATE: 03/09/18				
REV ISSUED FOR DATE BY					

**NOTES:**

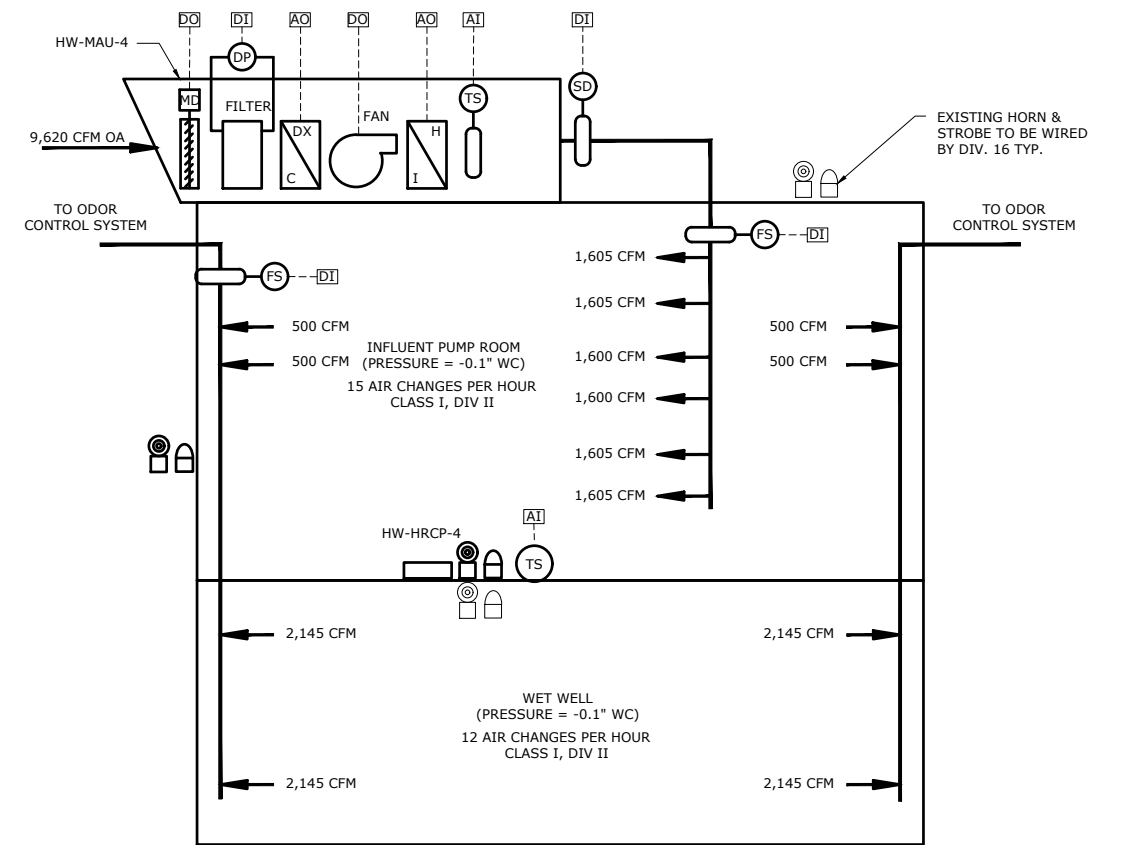
- COMPONENTS INDICATED WITHIN THE AIR HANDLING UNIT TO BE PROVIDED BY THE EQUIPMENT MANUFACTURER AND SHALL BE WIRED TO THE UNIT MOUNTED DDC CONTROLLER OF THE UNIT. FIELD MOUNTED THERMOSTAT SHALL BE WIRED TO UNIT MOUNTED DDC CONTROLLER.
- FIELD INSTALLED DEVICES IN THE DUCTWORK SHALL BE WIRED TO THE SCADA SYSTEM. REFER TO INSTRUMENTATION PLANS.



**SCREEN ROOM**



**INFLUENT METER ROOM**



**INFLUENT PUMP ROOM - WET WELL**

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REV	ISSUED FOR	DATE	BY

PROJECT ENGINEER:	A. CHACON
DESIGNED BY:	R. VAN DYKE
DRAWN BY:	R. VAN DYKE
CHECKED BY:	N. BARTLEY
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	

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**NORMAN BARTLEY**  
 LICENSE NO.: 119731 DATE: 03/09/18

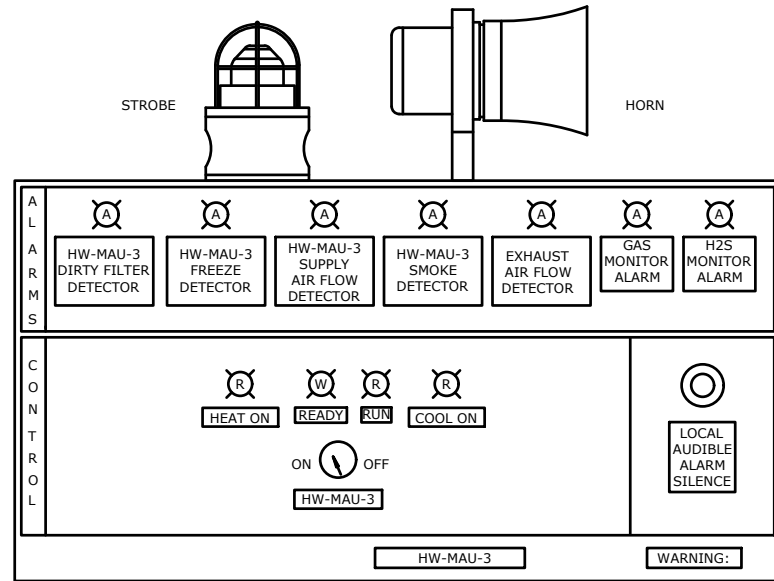


**Hazen**  
 HAZEN AND SAWYER  
 444 EXECUTIVE CENTER BOULEVARD,  
 SUITE 200  
 EL PASO, TX 79902

**HASKELL R. STREET WASTEWATER TREATMENT PLANT ODOR CONTROL - HEADWORKS**

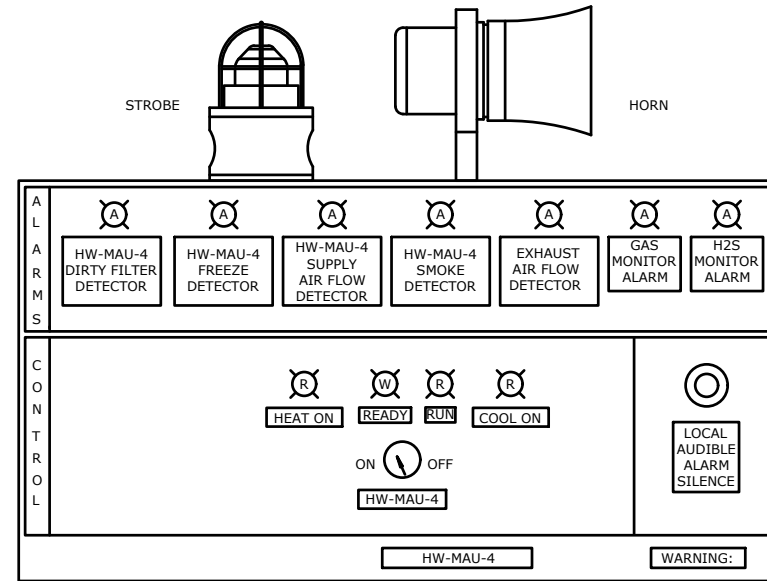
**HVAC AIRFLOW DIAGRAMS**

DATE:	MARCH 2018
HAZEN NO.:	60701-011
CONTRACT NO.:	01
DRAWING NUMBER:	H-03



HW-HRCP-3

DETAIL	1
N.T.S.	STD



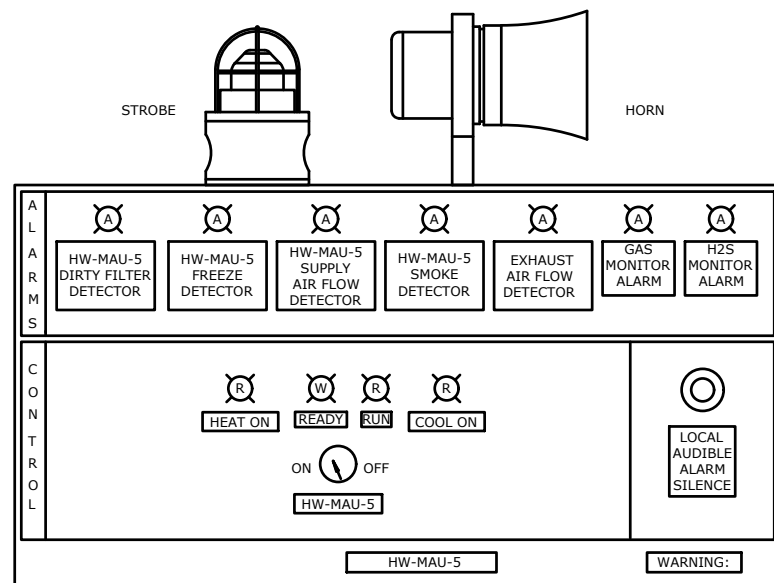
HW-HRCP-4

DETAIL	2
N.T.S.	STD

NOTES:

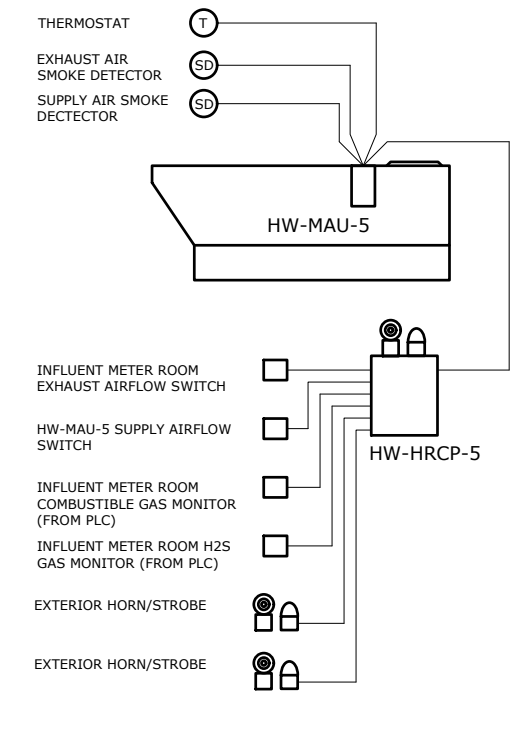
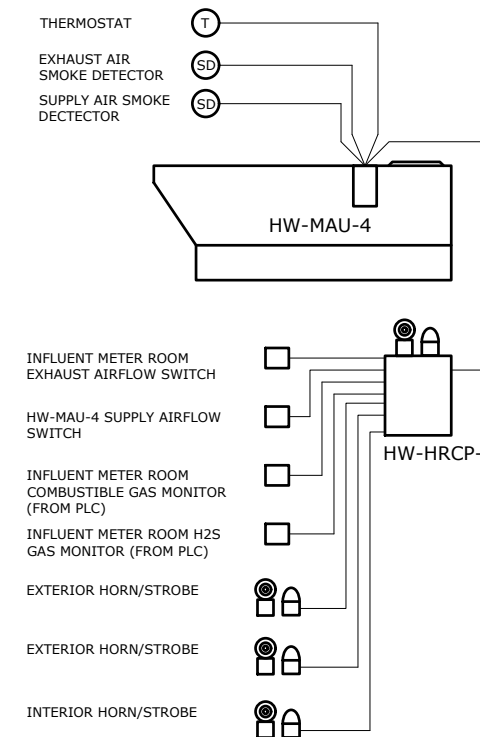
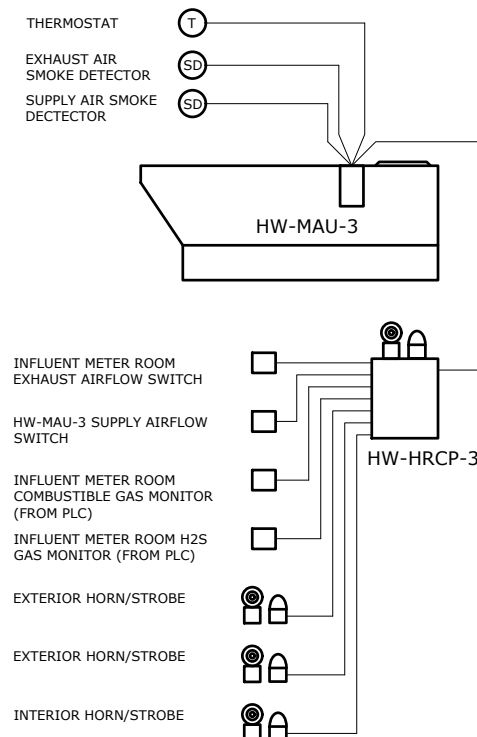
1. PLACE A RED WARNING SIGN CONSPICUOUSLY ON THE FACE OF EACH HVAC CONTROL PANEL WHICH READS AS FOLLOWS:  

WARNING THIS PANEL CONNECTED TO MULTIPLE SOURCES OF POWER
---
2. ALL ROOM PRESSURES ARE RELATIVE TO AMBIENT PRESSURE.
3. FOR SEQUENCE OF OPERATION SEE SPECIFICATION 15584.
4. MECHANICAL CONTRACTOR SHALL COORDINATE SMOKE DETECTOR WIRING INTERFACE WITH ELECTRICAL CONTRACTOR'S INSTALLATION OF THE BUILDING FIRE ALARM SYSTEM.
5. NOTE: CUSTOM AIR HANDLING UNITS, SPECIFICATION 15584: CUSTOM AIR HANDLER MANUFACTURER SHALL FURNISH ROOM TEMPERATURE SENSORS AND AIRFLOW SWITCHES (SHIPPED LOOSE) FOR FIELD MOUNTING BY CONTRACTOR.
6. PROVIDE BATTERY BACK-UP TO POWER PANEL FOR A SEVEN (7) DAY PERIOD MINIMUM.



HW-HRCP-5

DETAIL	3
N.T.S.	STD



TEMPERATURE CONTROL SCHEMATIC

DETAIL	4
N.T.S.	STD

File: 60701-ELP0701-011DRAWINGS\HWACR04.dwg, Saved by: RYANDYKE, Date: 3/12/2018 9:05 AM, Plot Date: 3/12/2018 2:07 PM, BY: MSAUTISTA

REV	ISSUED FOR	DATE	BY

PROJECT ENGINEER:	A. CHACON
DESIGNED BY:	R. VAN DYKE
DRAWN BY:	R. VAN DYKE
CHECKED BY:	N. BARTLEY
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY NORMAN E. BARTLEY, P.E. NO. 119731 ON 03-09-18. ALTERATION OF A SEALED DOCUMENT WITHOUT PROPER NOTIFICATION TO THE RESPONSIBLE ENGINEER IS AN OFFENSE UNDER THE TEXAS ENGINEERING PRACTICE ACT.

NORMAN BARTLEY

LICENSE NO.: 119731    DATE: 03/09/18



Hazen

HAZEN AND SAWYER  
444 EXECUTIVE CENTER BOULEVARD,  
SUITE 200  
EL PASO, TX 79902

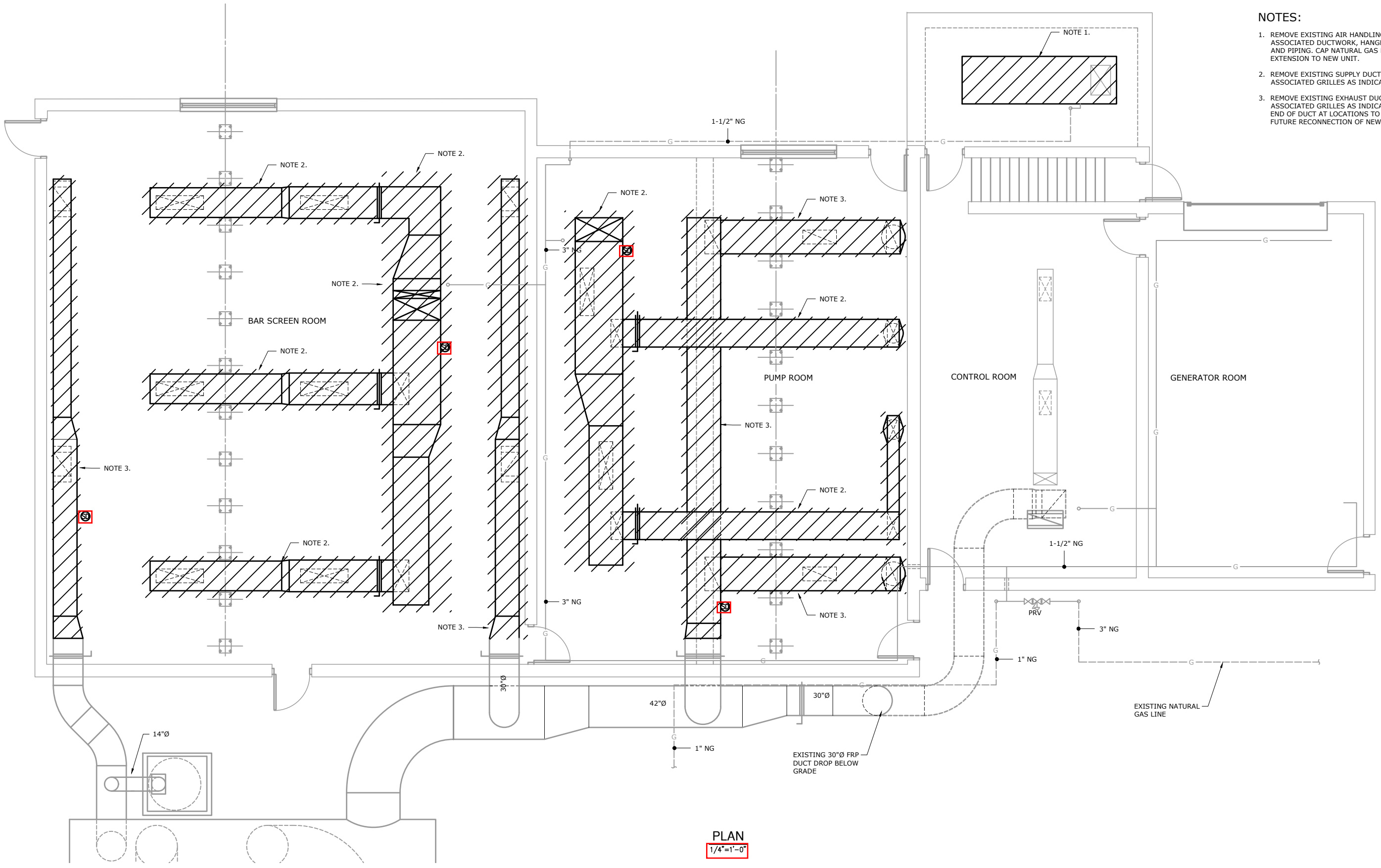
el paso WATER

HASKELL R. STREET WASTEWATER TREATMENT  
PLANT ODOR CONTROL - HEADWORKS

HVAC  
REMOTE CONTROL PANEL  
SCHEMATICS

DATE:	MARCH 2018
HAZEN NO.:	60701-011
CONTRACT NO.:	01
DRAWING NUMBER:	H-04

- NOTES:**
1. REMOVE EXISTING AIR HANDLING UNIT AND ASSOCIATED DUCTWORK, HANGERS, SUPPORTS AND PIPING. CAP NATURAL GAS LINE FOR EXTENSION TO NEW UNIT.
  2. REMOVE EXISTING SUPPLY DUCT, HANGERS AND ASSOCIATED GRILLES AS INDICATED.
  3. REMOVE EXISTING EXHAUST DUCT, HANGERS AND ASSOCIATED GRILLES AS INDICATED. MAINTAIN END OF DUCT AT LOCATIONS TO REMAIN FOR FUTURE RECONNECTION OF NEW DUCTS.



**PLAN**  
1/4"=1'-0"

File: C:\60701-ELP\60701-01\DRAWINGS\HW\AC\05 Saved by: M.BAUTISTA Date: 3/22/2018 2:28 PM  
 PLOT DATE: 3/22/2018 2:28 PM BY: M.BAUTISTA

REV	ISSUED FOR	DATE	BY

PROJECT ENGINEER:	A. CHACON
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DRAWN BY:	M. BAUTISTA
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**NORMAN BARTLEY**  
 LICENSE NO.: 119731 DATE: 03/09/18

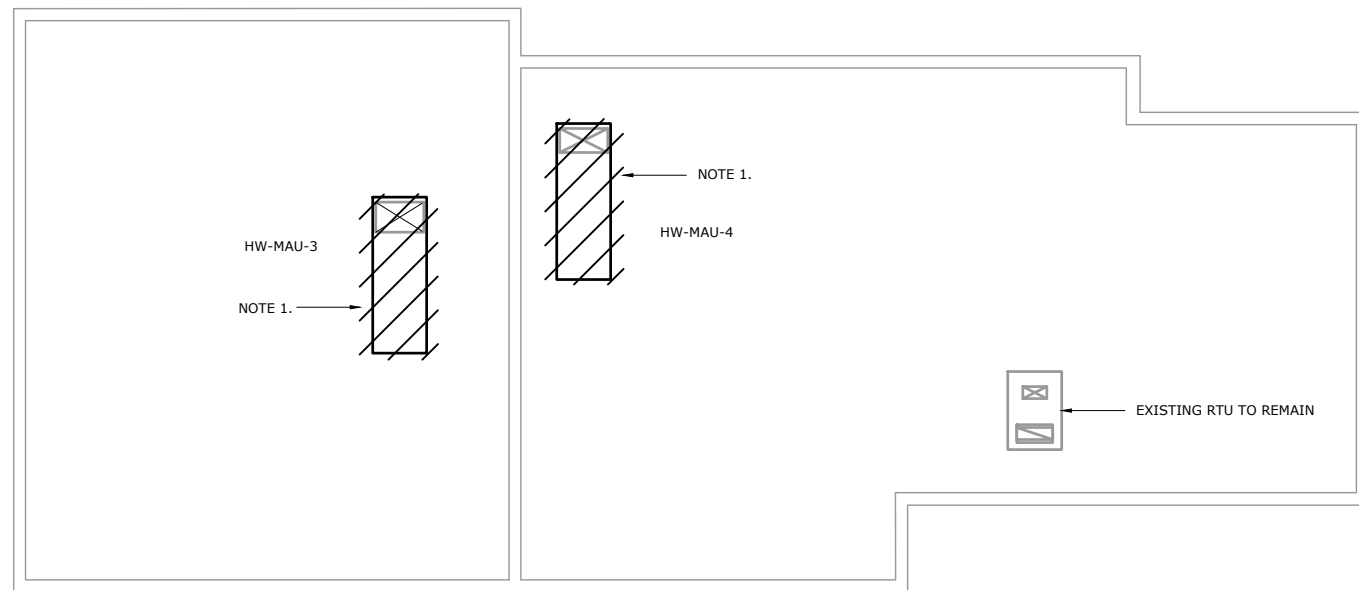


**Hazen**  
 HAZEN AND SAWYER  
 444 EXECUTIVE CENTER BOULEVARD,  
 SUITE 200  
 EL PASO, TX 79902

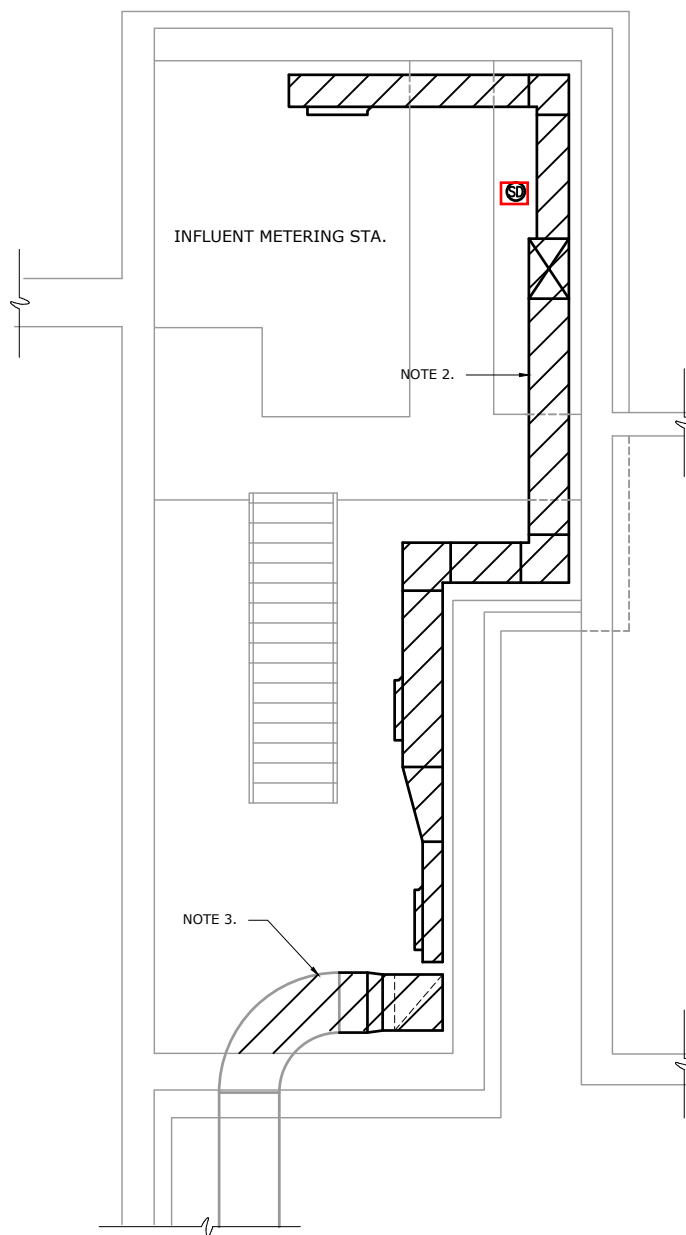
**HASKELL R. STREET WASTEWATER TREATMENT PLANT ODOR CONTROL - HEADWORKS**

**HVAC HEADWORKS BLDG DUCT DEMO PLAN-CEILING & GRADE**

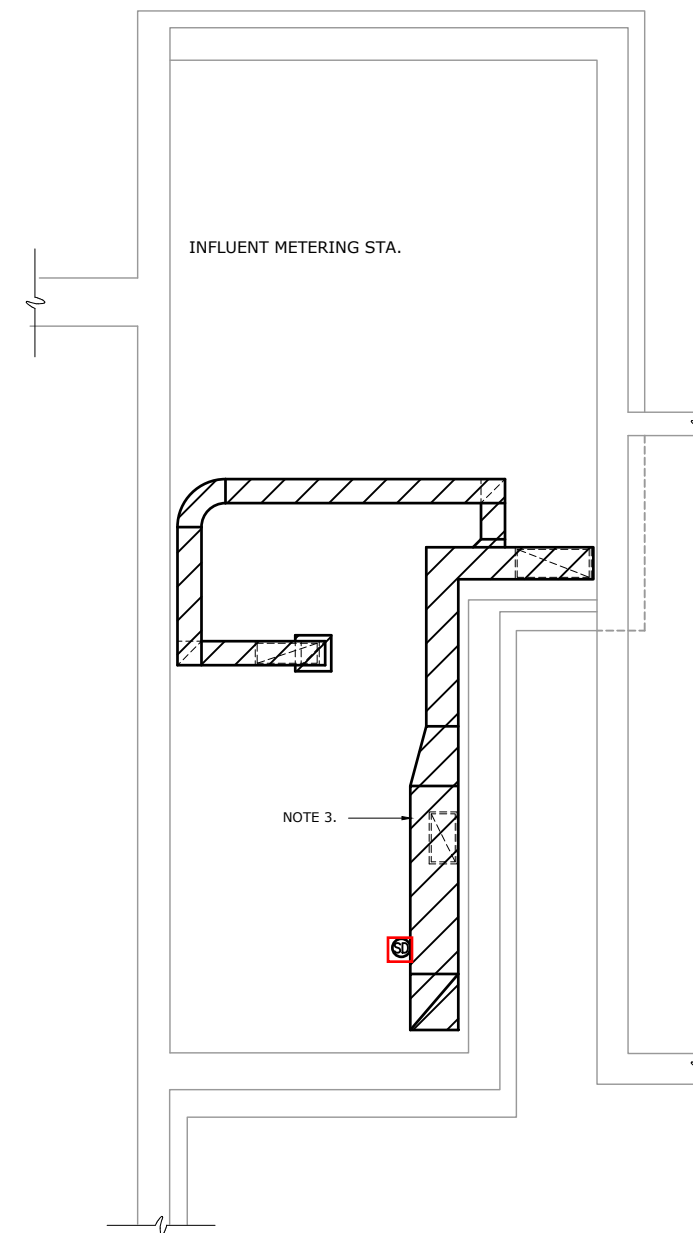
DATE:	MARCH 2018
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CONTRACT NO.:	01
DRAWING NUMBER:	H-05



ROOF PLAN  
1/8"=1'-0"



INFLUENT METER STATION INTERMEDIATE PLAN  
1/4"=1'-0"



INFLUENT METER STATION BOTTOM PLAN  
1/4"=1'-0"

NOTES:

1. REMOVE EXISTING AIR HANDLING UNIT AND ASSOCIATED PIPING, DUCTWORK, HANGER AND SUPPORTS. REMOVE GAS PIPING TO BELOW ROOF AND CAP PIPE FOR EXTENSION TO NEW UNIT. REMOVE WATER LINE TO BELOW ROOF AND CAP. PATCH AND SEAL ROOF PENETRATIONS.
2. REMOVE EXISTING SUPPLY DUCT, HANGERS AND ASSOCIATED GRILLES AS INDICATED.
3. REMOVE EXISTING EXHAUST DUCT, HANGERS AND ASSOCIATED GRILLES AS INDICATED.

File: C:\60701-ELP\60701-011\DRAWINGS\HWAC\H00.dwg 3/22/2018 12:44 PM  
PLOT DATE: 3/22/2018 2:58 PM BY: MSAUTISTA

REV	ISSUED FOR	DATE	BY

PROJECT ENGINEER:	A. CHACON
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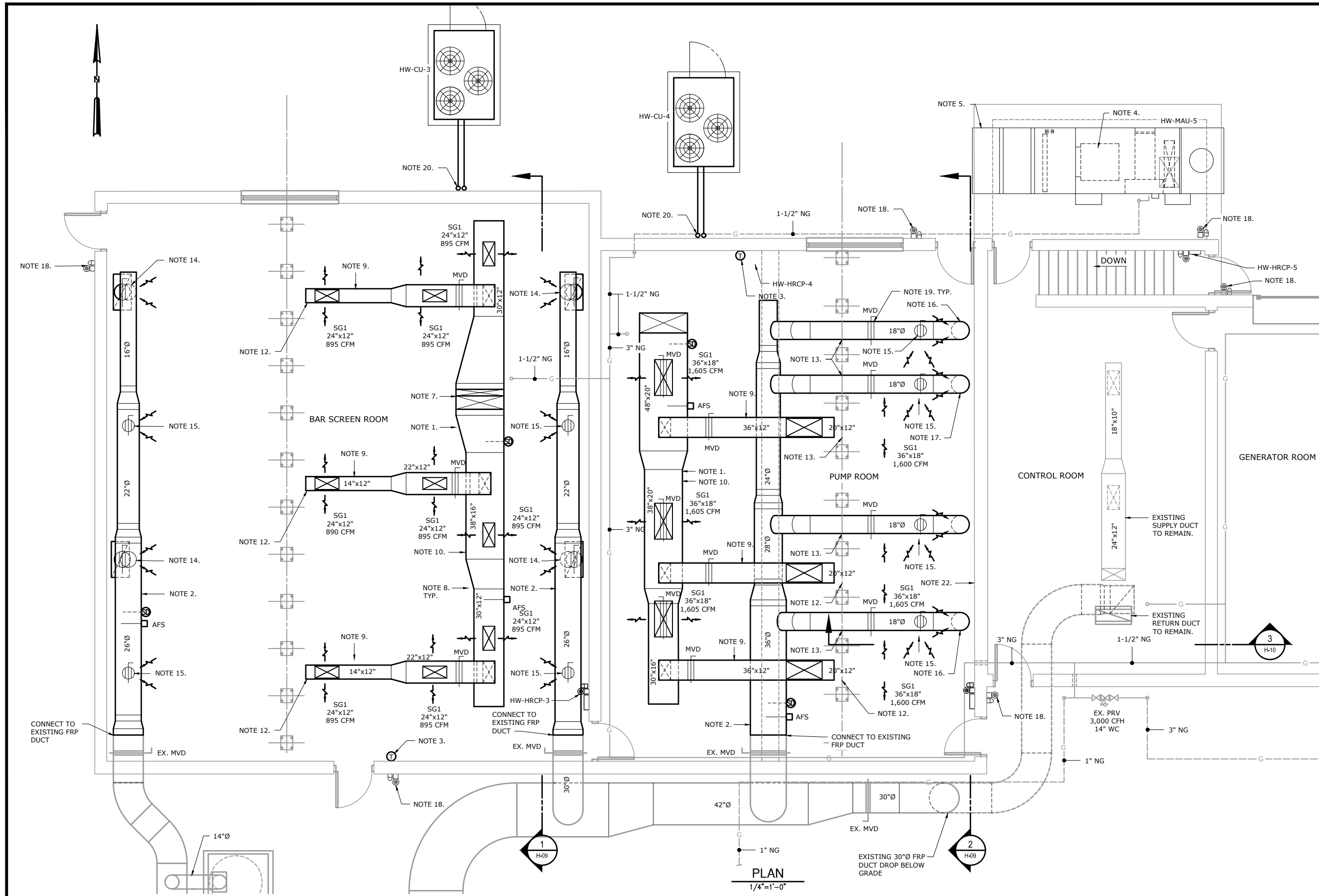


**Hazen**  
HAZEN AND SAWYER  
444 EXECUTIVE CENTER BOULEVARD,  
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EL PASO, TX 79902

**el paso WATER**  
HASKELL R. STREET WASTEWATER TREATMENT  
PLANT ODOR CONTROL - HEADWORKS

HVAC  
HEADWORKS BLDG DUCT  
DEMO PLAN-ROOF &  
BELOW GRADE

DATE:	MARCH 2018
HAZEN NO.:	60701-011
CONTRACT NO.:	01
DRAWING NUMBER:	H-06



- NOTES:
1. ALL SUPPLY DUCTWORK SHALL BE STAINLESS STEEL (S/S) UNLESS NOTED OTHERWISE.
  2. ALL FOUL AIR DUCTWORK SHALL BE FIBERGLASS REINFORCED PLASTIC (FRP) UNLESS NOTED OTHERWISE.
  3. MOUNT THERMOSTATS 48" A.F.F., COORDINATE LOCATION WITH OWNER, DOOR SWINGS, AND WALL MOUNTED DEVICES.
  4. FURNISH AND INSTALL SMOKE DETECTORS IN SUPPLY AND RETURN DUCTS OF EACH A/C UNIT. SMOKE DETECTORS SHALL SHUT DOWN THE UNIT UPON ACTIVATION. REFER TO ELECTRICAL DRAWINGS FOR ADDITIONAL REQUIREMENTS
  5. OUTSIDE AIR INTAKES SHALL BE A MIN. OF 10'-0" FROM PLUMBING VENTS, EXHAUST FAN DISCHARGES AND FLUE TERMINATIONS. CONTRACTOR SHALL FIELD VERIFY DIMENSIONS PRIOR TO INSTALLATION.
  6. FURNISH AND INSTALL 1" MCD TO NEAREST AREA DRAIN. INSULATE MCD PIPING FROM UNIT TO OUTLET AS SPECIFIED.
  7. FURNISH AND INSTALL PROPORTIONAL SPLIT WITH 48"x13-1/2" AND 48"x6-1/2" BRANCHES. PROVIDE MANUAL BALANCING DAMPER IN EACH MAIN BRANCH DUCT.
  8. DUCT AND PIPING LAYOUT IS SCHEMATIC. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF WORK WITH OTHER TRADES AND ENSURING CLEARANCE IS AVAILABLE PRIOR TO INSTALLATION.
  9. ROUTE SUPPLY DUCT IN BETWEEN STRUCTURAL MEMBERS.
  10. ROUTE SUPPLY DUCT UNDER STRUCTURAL MEMBERS.
  11. ROUTE EXHAUST DUCT UNDER STRUCTURAL MEMBERS.
  12. ROUTE SUPPLY DUCT ABOVE CRANE RAIL. FIELD VERIFY.
  13. ROUTE EXHAUST DUCT ABOVE CRANE RAIL. FIELD VERIFY.
  14. 16"Ø DOWN TO 36"x18" AT FLOOR GRATE. FIELD OFFSET 16" DUCT AS NEEDED TO ALIGN WITH EXISTING OPENING. VERIFY LOCATION AND SIZE OF FLOOR GRATE. PROVIDE MANUAL BALANCING DAMPER AT TAKE-OFF, BALANCE TO 1,715 CFM.
  15. 12"Ø BRANCH DOWN TO 12" BELOW DUCT. TERMINATE DUCT WITH 1/2"x1/2" STAINLESS STEEL WIRE MESH. PROVIDE MANUAL BALANCING DAMPER AT TAKE-OFF, BALANCE TO 500 CFM.
  16. 18"Ø DOWN TO FLOOR PENETRATION. FIELD OFFSET 18" DUCT AS NEEDED TO ALIGN WITH EXISTING OPENING. VERIFY LOCATION AND SIZE OF FLOOR OPENING. PROVIDE MANUAL BALANCING DAMPER AT TAKE-OFF, BALANCE TO 2,145 CFM.
  17. 18"Ø DOWN TO FLOOR PENETRATION. CORE DRILL NEW FLOOR OPENING, REFER TO STRUCTURAL. PROVIDE MANUAL BALANCING DAMPER AT TAKE-OFF, BALANCE TO 2,145 CFM.
  18. WIRING EXISTING AUDIBLE AND VISUAL ALARM FROM NEW REMOTE CONTROL PANEL TO INDICATE LOSS OF SUPPLY OR EXHAUST AIRFLOW WITHIN SPACE OR GAS MONITOR ALARM BY DIV. 16. GAS MONITOR ALARM WIRING FROM SCADA BY OTHERS.
  19. LOCATE POSITIONING DAMPER LEVEL TO BE ACCESSIBLE FROM BOTTOM OF DUCT FOR ALL DUCTS LOCATED WITHIN WEBBING OF ROOF STRUCTURE.
  20. ROUTE REFRIGERANT LINES UP FACE OF WALL TO ROOFTOP AIR HANDLING UNIT. FASTEN TO WALL WITH CHANNEL STRUT. REFER TO DETAIL 11 ON SHEET H-11. PROVIDE CORROSION PROTECTION COATING FOR PIPING, REFER TO SPECIFICATION 1553.
  21. CLEAN WALL SURFACE AND PAINT WALL FROM CORNER TO CORNER AND FLOOR TO CEILING.

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**NORMAN BARTLEY**

LICENSE NO.: 119731 DATE: 03/09/18



**Hazen**

HAZEN AND SAWYER  
444 EXECUTIVE CENTER BOULEVARD,  
SUITE 200  
EL PASO, TX 79902

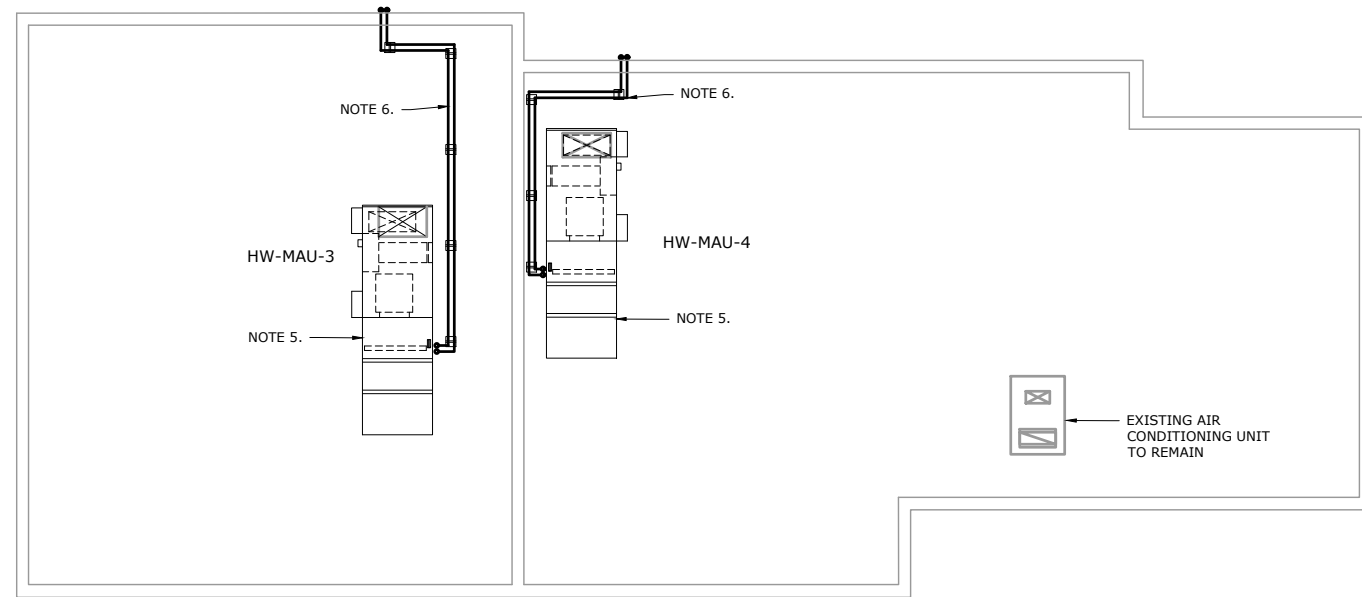
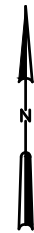
**el paso WATER**

HASKELL R. STREET WASTEWATER TREATMENT PLANT ODOR CONTROL - HEADWORKS

HVAC HEADWORKS BLDG DUCT PLAN-CEILING & GRADE

DATE:	MARCH 2018
HAZEN NO.:	60701-011
CONTRACT NO.:	01
DRAWING NUMBER:	H-07

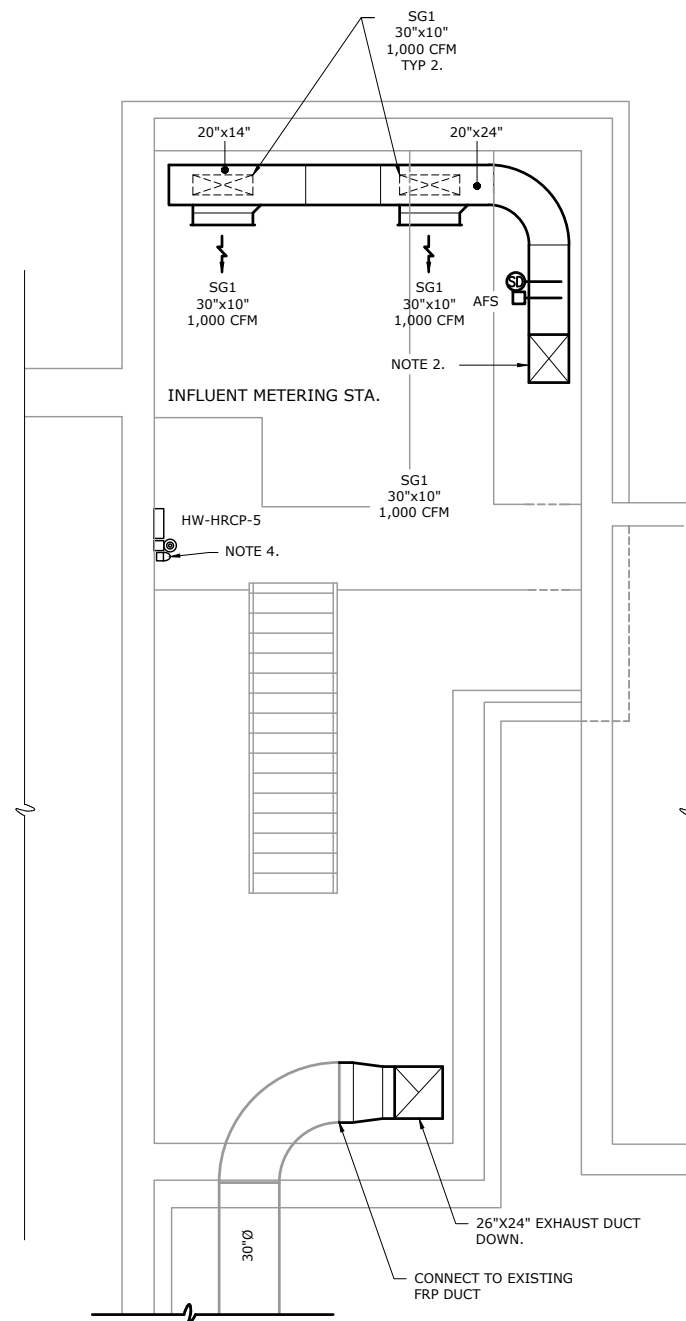
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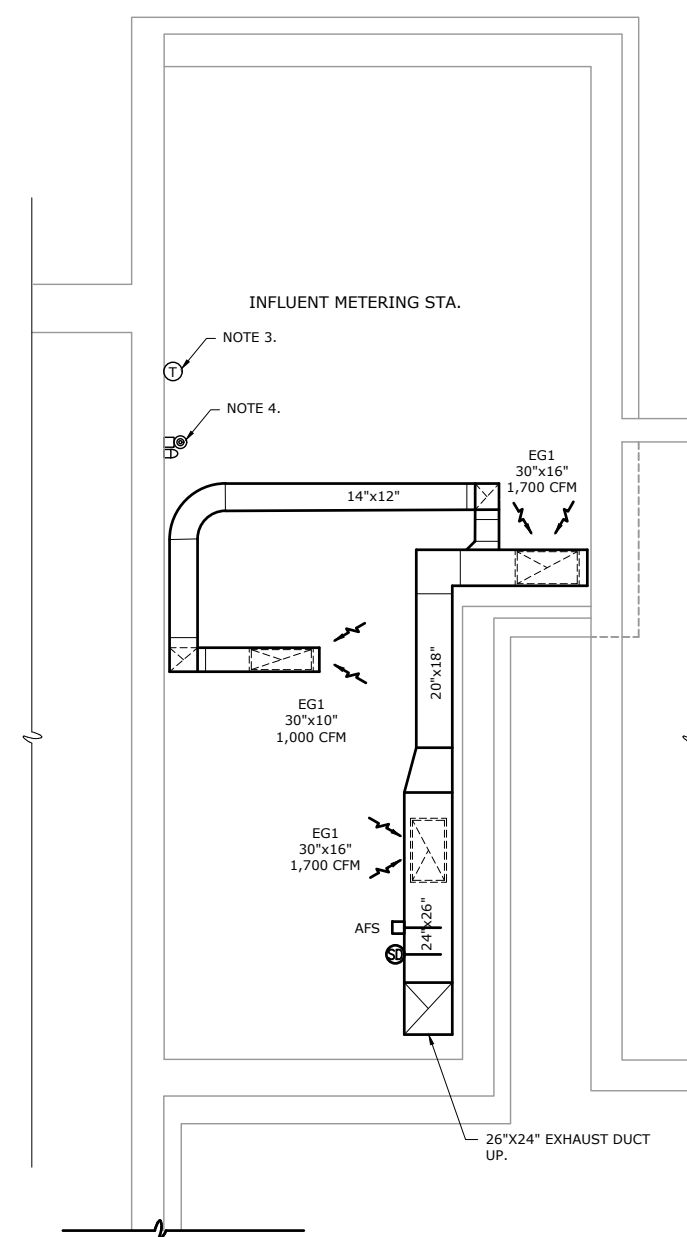
**ELEVATION ROOF**  
1/8"=1'-0"

NOTES:

1. ALL SUPPLY AIR DUCT AND FOUL AIR DUCT ON INTERMEDIATE LEVEL AND LOWER LEVEL TO BE ALUMINUM.
2. 20"x24" SUPPLY DUCT DOWN FROM, HW-MAU-5.
3. MOUNT THERMOSTATS 48" A.F.F. COORDINATE LOCATION WITH OWNER, DOOR SWINGS, AND WALL MOUNTED DEVICES.
4. AUDIBLE AND VISUAL ALARM TO INDICATE LOSS OF SUPPLY OR EXHAUST AIRFLOW WITHIN SPACE. MOUNT 8'-0" AFG.
5. MOUNT MAKE-UP AIR UNITS ON FULL PERIMETER INSULATED ROOF CURB.
6. ROUTE REFRIGERANT LINES ACROSS ROOF TO AIR HANDLING UNIT. PROVIDE SUPPORTS AS SPECIFIED.



**INFLUENT METERING STATION ELEVATION - INTERMEDIATE**  
1/4"=1'-0"



**INFLUENT METERING STATION ELEVATION - BOTTOM**  
1/4"=1'-0"

File: C:\6701-ELP\0701-01\DRAWINGS\HVAC\08.dwg 3/22/2018 12:11 PM  
PLOT DATE: 3/22/2018 2:58 PM BY: MSAUTISTA

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PROJECT ENGINEER:	A. CHACON
DESIGNED BY:	R. VAN DYKE
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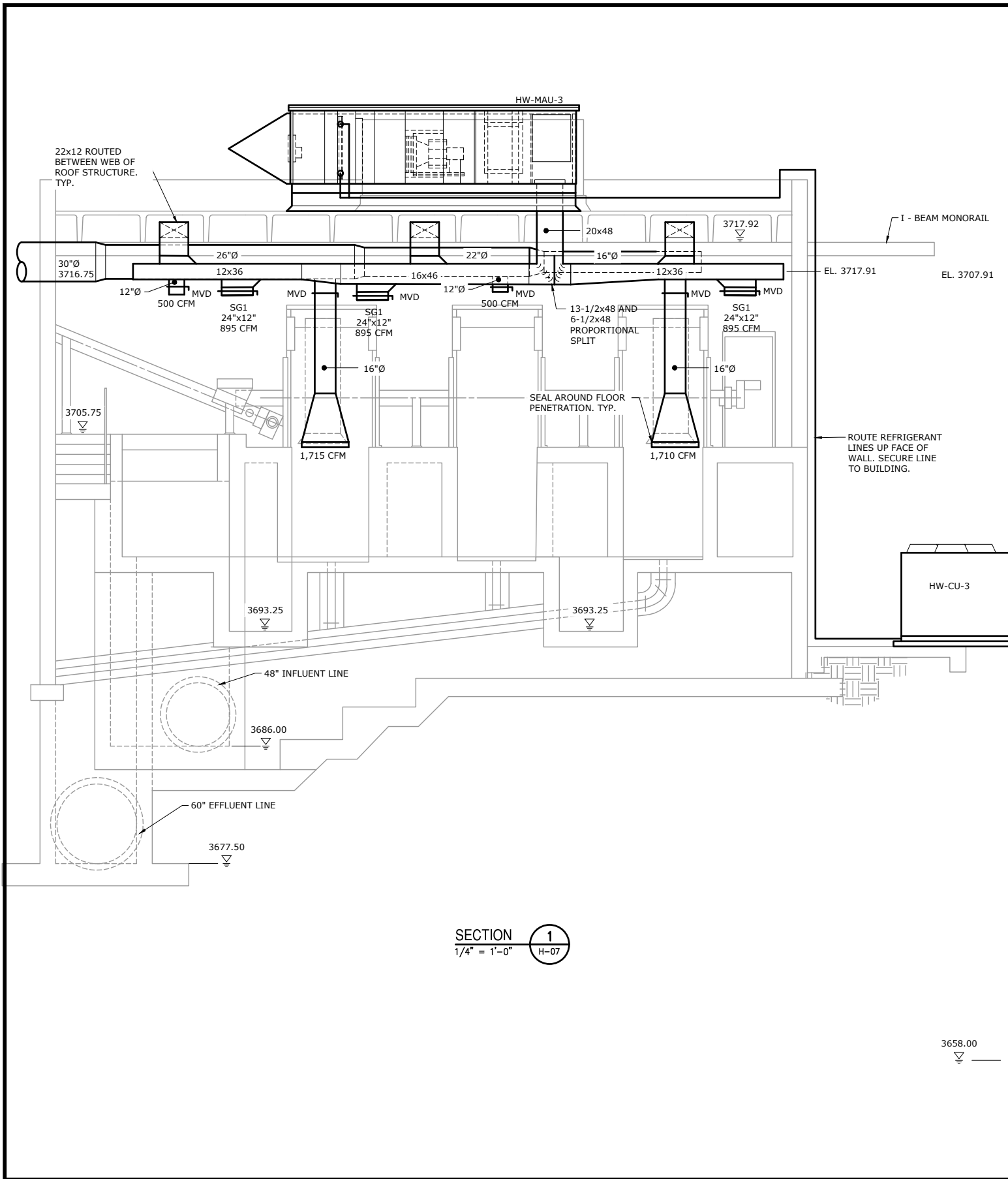
HAZEN AND SAWYER  
444 EXECUTIVE CENTER BOULEVARD,  
SUITE 200  
EL PASO, TX 79902

**el paso WATER**

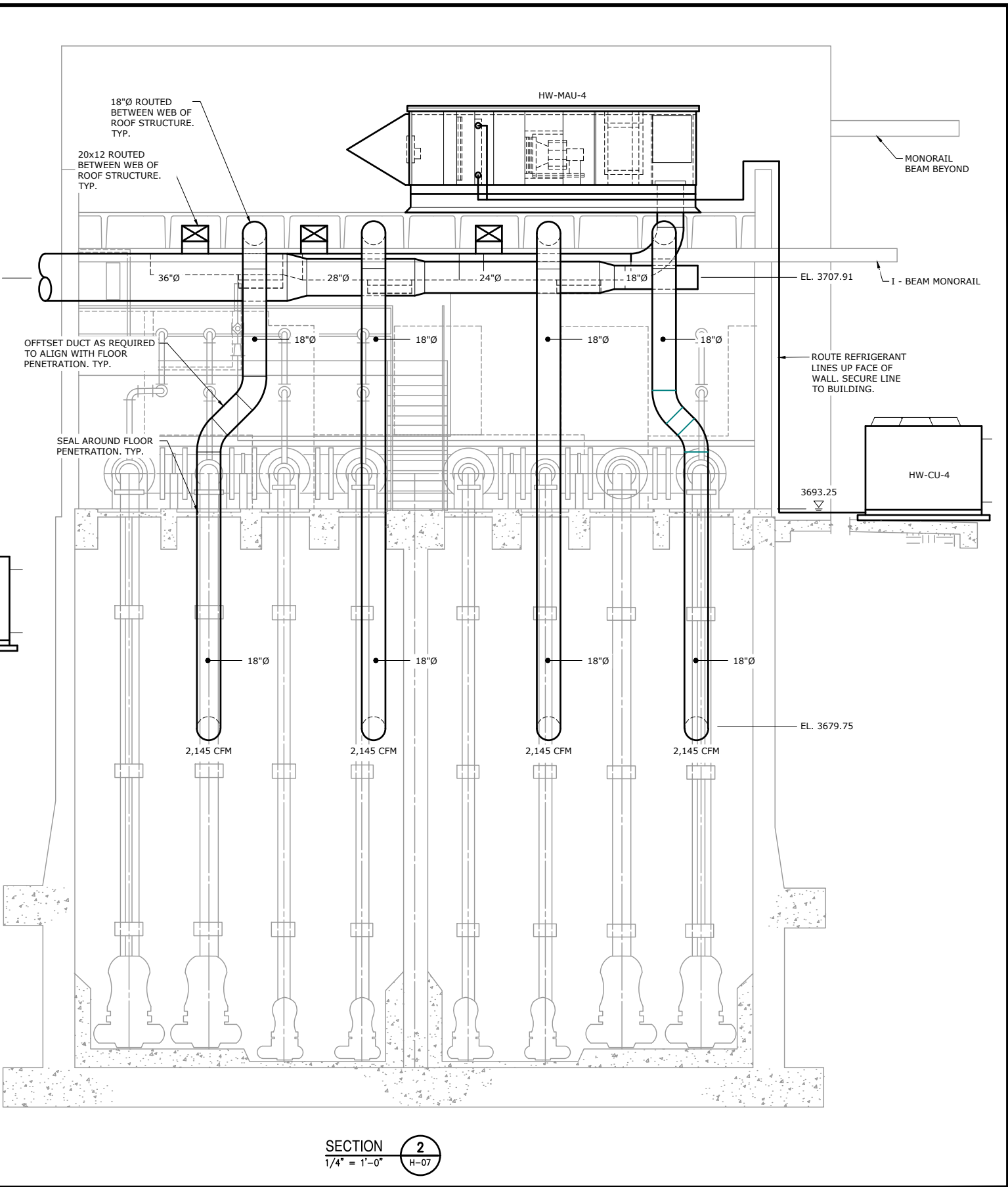
HASKELL R. STREET WASTEWATER TREATMENT PLANT ODOR CONTROL - HEADWORKS

HVAC HEADWORKS BLDG DUCT PLAN-ROOF & BELOW GRADE

DATE:	MARCH 2018
HAZEN NO.:	60701-011
CONTRACT NO.:	01
DRAWING NUMBER:	H-08



SECTION 1  
1/4" = 1'-0" H-07



SECTION 2  
1/4" = 1'-0" H-07

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PLOT DATE: 3/12/2018 2:05 PM BY: MBAUTISTA

REV	ISSUED FOR	DATE	BY

PROJECT ENGINEER:	A. CHACON
DESIGNED BY:	R. VAN DYKE
DRAWN BY:	M. BAUTISTA
CHECKED BY:	N. BARTLEY
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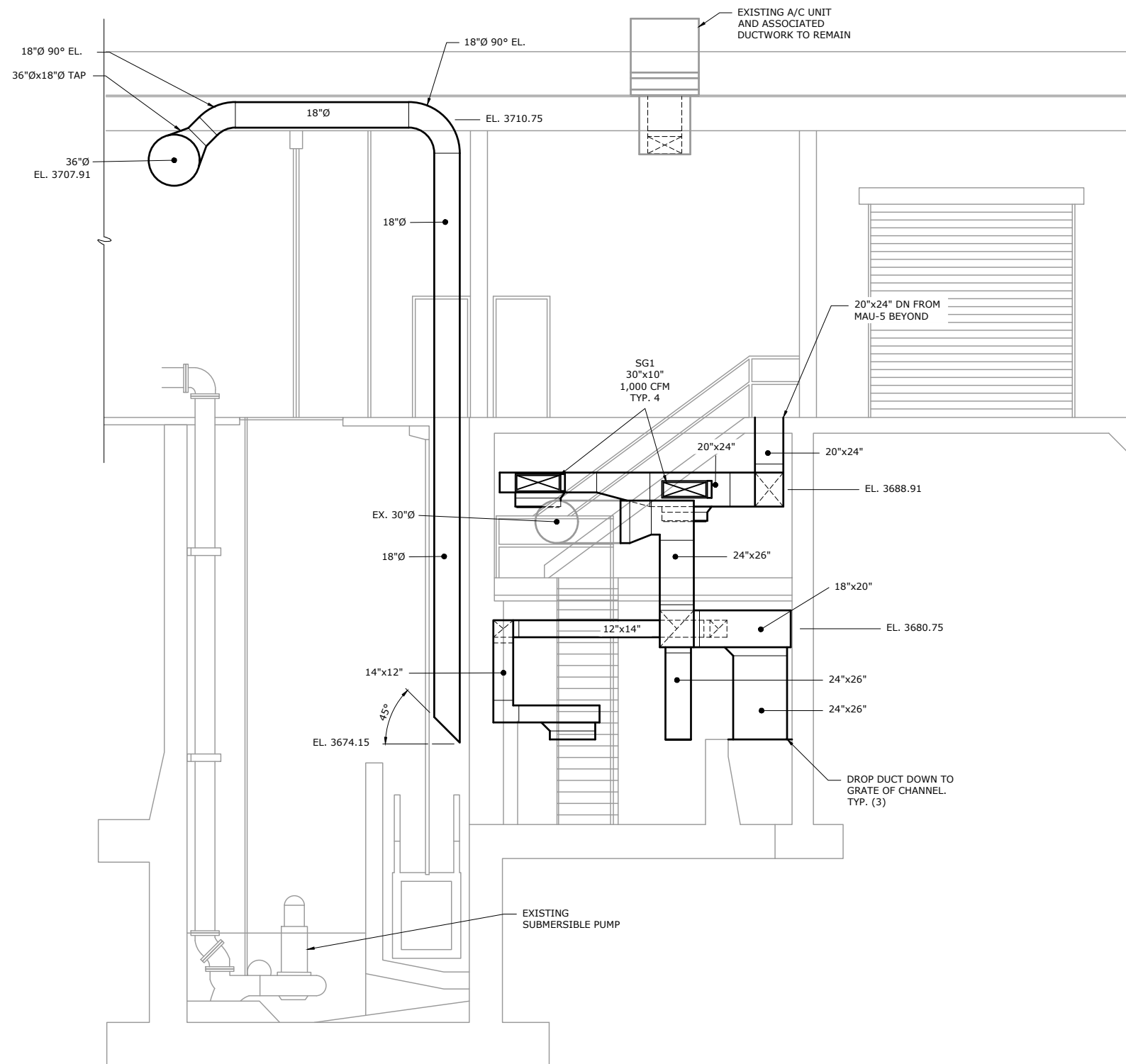
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HAZEN AND SAWYER  
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**el paso WATER**  
HASKELL R. STREET WASTEWATER TREATMENT  
PLANT ODOR CONTROL - HEADWORKS

HVAC  
HEADWORKS BLDG DUCT  
SECTIONS - I

DATE:	MARCH 2018
HAZEN NO.:	60701-011
CONTRACT NO.:	01
DRAWING NUMBER:	H-09





SECTION 3  
1/4" = 1'-0" H-07

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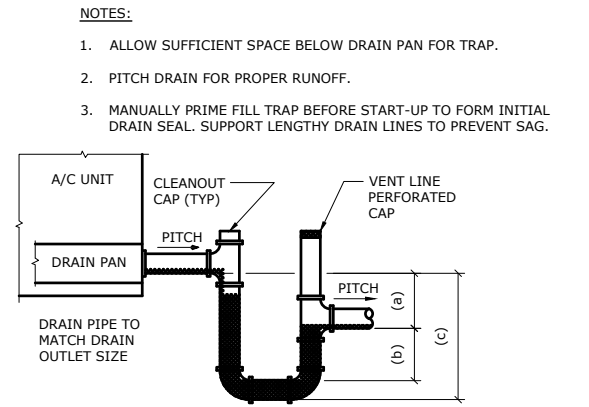
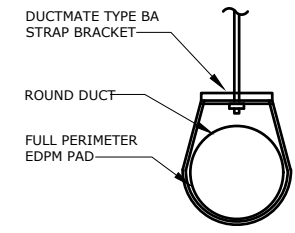
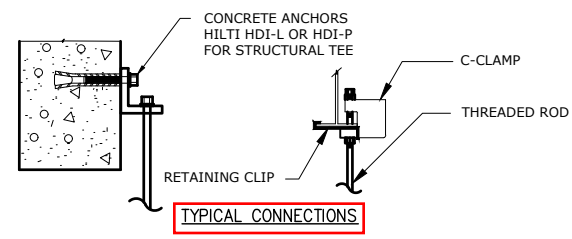
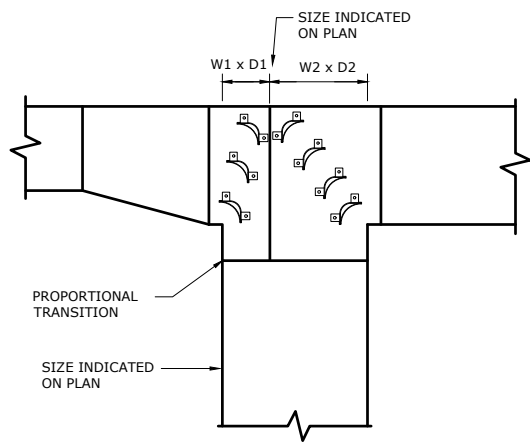
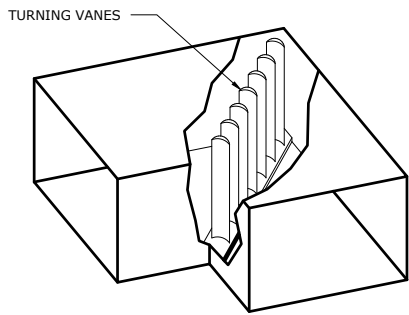
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**el paso WATER**

HASKELL R. STREET WASTEWATER TREATMENT PLANT ODOR CONTROL - HEADWORKS

HVAC HEADWORKS BLDG DUCT SECTIONS - II

DATE:	MARCH 2018
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DRAWING NUMBER:	H-10



NOTES:  
 1. ALLOW SUFFICIENT SPACE BELOW DRAIN PAN FOR TRAP.  
 2. PITCH DRAIN FOR PROPER RUNOFF.  
 3. MANUALLY PRIME FILL TRAP BEFORE START-UP TO FORM INITIAL DRAIN SEAL. SUPPORT LENGTHY DRAIN LINES TO PREVENT SAG.

DRAW THROUGH COIL (NEGATIVE PRESSURE):  
 (a) 1 INCH FOR EACH INCH OF NEGATIVE PRESSURE PLUS 1 INCH (NEGATIVE STATIC PRESSURE IN INCHES WG WITH DIRTY FILTERS, COILS, AND MAXIMUM AIR FLOW) THIS DIMENSION IN INCHES MUST BE EQUAL TO MIN. 1/2 OF THE (a) ABOVE  
 (b) THIS DIMENSION IN INCHES MUST BE EQUAL TO MIN. 1/2 OF THE (a) ABOVE  
 (c) EQUALS (a) + (b) + PIPE DIA. + INSULATION

**MITERED ELBOW**

DETAIL 01  
 NO SCALE H11

**PROPORTIONAL SPLIT**

DETAIL 02  
 NO SCALE H11

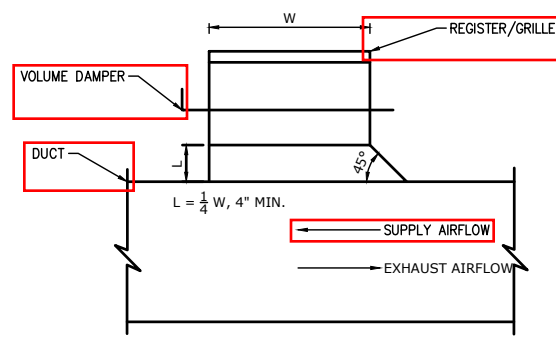
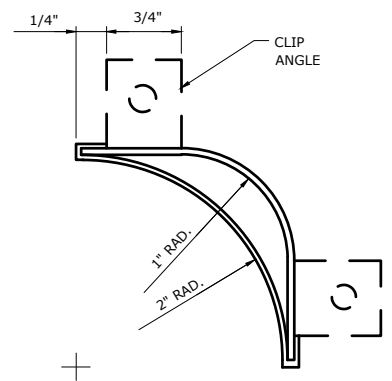
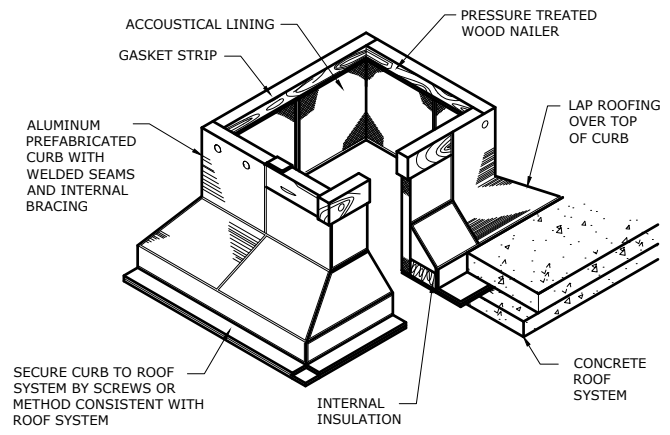
**ROUND DUCT SUPPORT**

DETAIL 07  
 NO SCALE H11

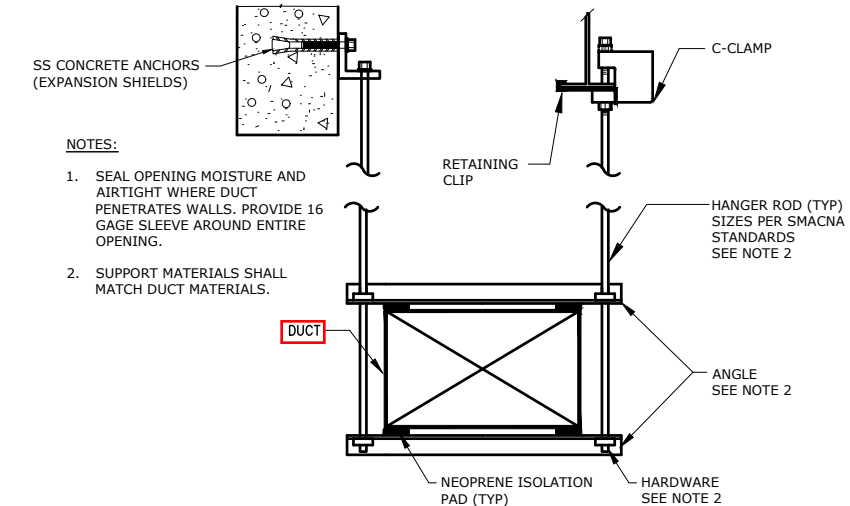
HANGER ROD (TYP.) SIZES PER SMACNA STANDARDS

**AIR CONDITIONER COIL TRAP**

DETAIL 04  
 NO SCALE H11



NOTES:  
 1. SEAL OPENING MOISTURE AND AIRTIGHT WHERE DUCT PENETRATES WALLS. PROVIDE 16 GAGE SLEEVE AROUND ENTIRE OPENING.  
 2. SUPPORT MATERIALS SHALL MATCH DUCT MATERIALS.



**CONCRETE ROOF CURB**

DETAIL 05  
 NO SCALE H11

**TYPICAL TURNING VANE**

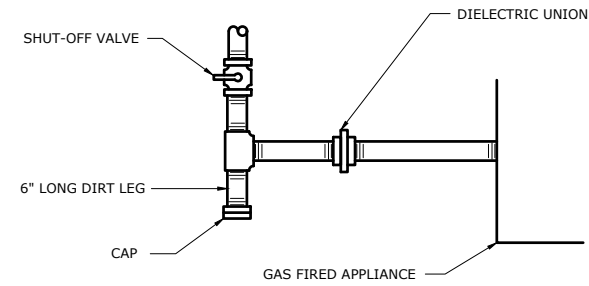
DETAIL 06  
 NO SCALE H11

**DUCT REGISTER/GRILLE**

DETAIL 07  
 NO SCALE H11

**DUCT HANGER**

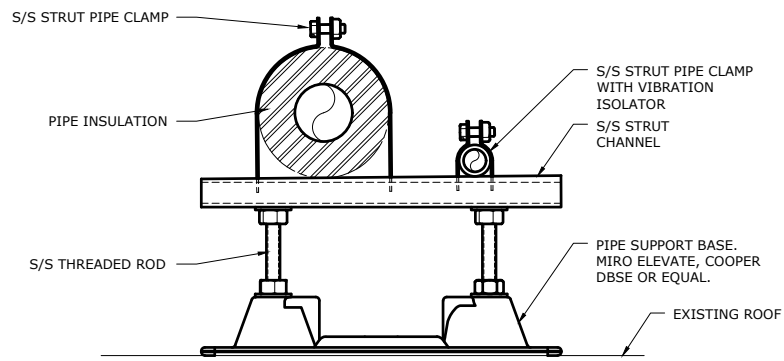
DETAIL 08  
 NO SCALE H11



NOTE: SEISMIC SHUT-OFF VALVES ARE OPTIONAL AND ARE NOT REQUIRED FOR NONESSENTIAL FACILITIES LOCATED WITHIN SEISMIC ZONES 1 OR 2.

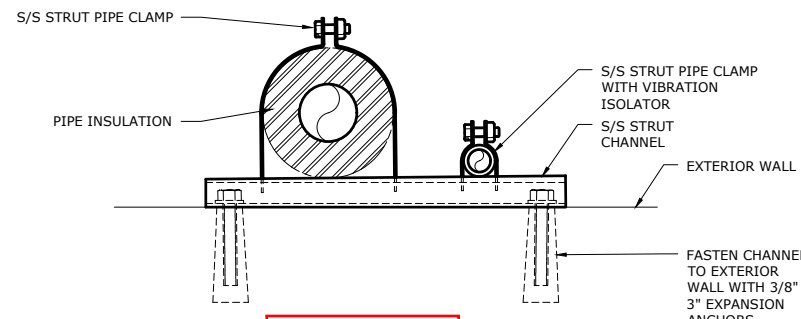
**GAS FIRED APPLIANCE CONNECTION**

DETAIL 09  
 NO SCALE H11



**ROOF PIPE SUPPORT**

DETAIL 10  
 NO SCALE H11



**WALL PIPE SUPPORT**

DETAIL 11  
 NO SCALE H11

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NORMAN BARTLEY  
 LICENSE NO.: 119731 DATE: 03/09/18



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**el paso WATER**  
 HASKELL R. STREET WASTEWATER TREATMENT PLANT ODOR CONTROL - HEADWORKS

HASKELL R. STREET  
 WWTP ODOR CONTROL  
 HVAC  
 DETAILS

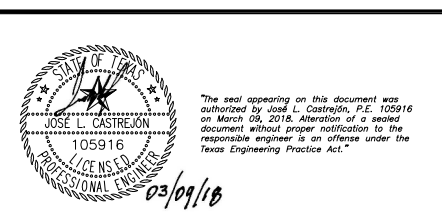
DATE:	MARCH 2018
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DRAWING NUMBER:	H-11

ELECTRICAL LEGEND

INSTRUMENTATION LEGEND		RACEWAY AND BRANCH CIRCUITING		EQUIPMENT AND DEVICES		GROUNDING SYSTEM	
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION AND/OR COMMENTS	SYMBOL	DESCRIPTION AND/OR COMMENTS	SYMBOL	DESCRIPTION AND/OR COMMENTS
	LEVEL INDICATING TRANSMITTER	LA-1	HOME RUN TO PANEL & CIRCUIT INDICATED. REFER TO PANEL SCHEDULES FOR CONDUIT AND WIRE SIZES UNLESS INDICATED OR NOTED OTHERWISE.		120/208V-3P-4W OR 120/240V-1P-3 PANEL BOARD. REFER TO PANEL SCHEDULES		CONNECTION TO EQUIPMENT
	ULTRASONIC LEVEL SENSOR		NEUTRAL, HOT, SWITCHED, GROUND, AND ISOLATED GROUND CONDUCTOR RESPECTIVELY		277/480V-3P-4W PANEL BOARD. REFER TO PANEL SCHEDULES		#4/0 AWG, BARE STRANDED COPPER WIRE
	CABLE SHIELD		CONCEALED BRANCH CIRCUITING, COMPLETE WITH CONDUIT SYSTEM AND WIRING AS REQUIRED PROVIDE SWITCH LEGS FOR CONTROL AS INDICATED.		T-STAT BY MECHANICAL. ROUGH-IN BY ELECTRICAL.		GROUND ELECTRODE
	FUSED TERMINAL BLOCK WITH FUSE SIZE AS INDICATED		CONDUIT/CABLE NUMBER WITH CONDUIT SIZE		ENCLOSED MOTOR STARTER		GROUND TAP
	FIELD INSTRUMENT		CONDUIT (SIZE AS NOTED) WITH PULL WIRE STUBBED WHERE INDICATED. PROVIDE BUSHING AT END OF CONDUIT.		HEAVY DUTY DISCONNECT SWITCH, 30/2P/4X DENOTES 30A., 2 POLE, IN NEMA 4X ENCLOSURE.	<b>GENERAL</b>	
	INPUT TO PLC AND ASSOCIATED LOGIC AS INDICATED		EL CONDUIT FITTING (CONDUIT TURNED DOWN) EL CONDUIT FITTING (CONDUIT TURNED UP)		ENCLOSED COMBINATION MOTOR STARTER-DISCONNECT	SYMBOL	DESCRIPTION AND/OR COMMENTS
	OUTPUT FROM PLC AND ASSOCIATED LOGIC AS INDICATED		EXISTING RACEWAY TO REMAIN. EXISTING RACEWAY TO BE DEMOLISHED.		HEAVY DUTY FUSED DISCONNECT 30/2P/30F DENOTES 30 AMP RATING, 2 POLE AND FUSED AT 30 AMPS.		KEYED NOTE SYMBOL
	MAN/MACHINE INTERFACE		NEW RACEWAY. SIZE AS INDICATED.		FLOW DETECTOR - DUCT MOUNTED.	DETAIL SYMBOL -USED WHEN DETAIL IS SHOWN ON ANOTHER SHEET	
	MOTOR VARIABLE FREQUENCY DRIVE OPERATOR		TEE CONDUIT FITTING (CONDUIT TURNED DOWN) TEE CONDUIT FITTING (CONDUIT TURNED UP)		SMOKE DETECTOR		SECTION OR DETAIL IDENTIFICATION LETTER FOR SECTION NUMBER FOR DETAIL
	PUMP MOTOR, HP INDICATED		"X" CONDUIT FITTING		J-BOX SIZED AS REQUIRED PER NEC. WP - WEATHERPROOF NEMA 3R J-BOX SIZED AS REQUIRED PER NEC		NUMBER OF SHEET ON WHICH THE CONDITION IS DRAWN
	PULSE SIGNAL		CONDUIT SEAL LISTED FOR 40 PERCENT AREA FILL.		WEATHERPROOF NEMA 3R		LINE TYPE INDICATES EXISTING TO REMAIN ELECTRICAL, DEVICES, EQUIPMENT, ETC.
	ELECTRICAL SIGNAL (ANALOG)		EL CONDUIT FITTING		G-GROUND MOUNTED		LINE TYPE INDICATES EXISTING TO BE DEMOLISHED ELECTRICAL EQUIPMENT, DEVICES, ETC.
	ELECTRICAL SIGNAL (DIGITAL)		TEE CONDUIT FITTING		MOTOR (NUMBER DENOTES HORSEPOWER RATING)		LINE TYPE INDICATES NEW ELECTRICAL DEVICES, EQUIPMENT, ETC.
	INDICATES PROCESS FLOW		FLEXIBLE CONDUIT		WALL MOUNTED LIGHT FIXTURE (SEE FIXTURE SCHEDULE)		
	TELEMETRY RADIO SIGNAL (BY OTHERS)	<b>SITE</b>			SURFACE MOUNTED LIGHT FIXTURE (SEE FIXTURE SCHEDULE)		
	SOFTWARE OR DATA LINK		EXISTING RACEWAY TO REMAIN. EXISTING RACEWAY TO BE DEMOLISHED.		SURFACE LED LIGHT FIXTURE (SEE FIXTURE SCHEDULE)		
	PRESENCE/STATE INDICATOR		NEW RACEWAY. SIZE AS INDICATED.		FLOOD LIGHT FIXTURE.		
	FLOW POSITION SWITCH		SECOND AND THIRD MODIFIER. DESIGNATES CIRCUIT TYPE. (SEE BELOW) FIRST MODIFIER, "O" DESIGNATES OVERHEAD, "U" DESIGNATES UNDERGROUND, "S" DESIGNATES SURFACE.		S SINGLE POLE TOGGLE SWITCH, 120/277V, 20A		
	INDICATING LIGHT		UNDERGROUND ELECTRICAL.		S <sub>3</sub> THREE-WAY TOGGLE SWITCH, 120/277V, 20A		
	ALARM		OVERHEAD ELECTRICAL.		S <sub>1M</sub> SINGLE POLE 60 MINUTE ROTARY TIME SWITCH, 120/277V, 20A RATED FOR HID LIGHTING LOADS.		
	FIELD DEVICE		UNDERGROUND INSTRUMENTATION.		S <sub>2M</sub> SINGLE POLE DOUBLE THROW 60 MINUTE ROTARY TIME SWITCH, 120/277V, 20A RATED FOR HID LIGHTING LOADS.		
	PANEL MOUNTED DEVICE		MAN HOLE		Ⓜ DUPLEX RECEPTACLE, 125VAC, 20A, NEMA 5-20R		
	HORN AND BEACON ALARM H -HAZARDOUS LOCATION CLASS I DIV II NH -NON HAZARDOUS LOCATION		HAND HOLE		Ⓜ <sub>G</sub> WEATHERPROOF GFCI DUPLEX RECEPTACLE, 125VAC-20A, NEMA 5-20R, WITH CAST ALUMINUM WHILE-IN-USE COVER. UNLESS INDICATED OTHERWISE. R-ROOF-MOUNTED G-GROUND-MOUNTED		
	UNIT RUNNING STATUS				PC PHOTOELECTRIC CELL		
	FAN RUNNING STATUS				Ⓜ SPECIALTY RECEPTACLE. VOLTAGE AND AMPERAGE AS NOTED. MOUNT AT 18" TO CENTER OF DEVICE UNLESS INDICATED OTHERWISE		
	SMOKE PRESENCE INDICATOR				TC TIME CLOCK AS NOTED OR SPECIFIED		
	FILTER INDICATOR				☐ LIGHT POLE. REFER TO LIGHT FIXTURE SCHEDULE FOR SPECIFICATION.		
	LOW TEMPERATURE INDICATOR						
	LEL GAS INDICATING TRANSMITTER						
	H2S INDICATING TRANSMITTER						

LIGHT FIXTURE SCHEDULE							
FIXTURES FROM LITHONIA, COOPER AND HUBBELL SHALL BE CONSIDERED "EQUAL" UNLESS NOTED OTHERWISE. PRIOR APPROVAL OF SUBSTITUTED FIXTURES IS NOT REQUIRED PROVIDED THE FIXTURES MEET THE PERFORMANCE, CONSTRUCTION AND AESTHETICS OF SCHEDULED ITEM.							
TYPE	DESCRIPTION	MANUFACTURER & CATALOG NUMBER	MOUNTING	LAMPS			REMARKS
				VOLTS	NO.	TYPE	
P	POLE LIGHTS	LSI: #XLCM5E-LED-HO-CW-UE-BRZ	POLE 25 HEIGHT HAPCO #RST-25-B-75-4-BM	120	1	LED	25 FEET POLE MOUNTED ON 30" CONCRETE BASE.

PROJECT ENGINEER:	JLC		
DESIGNED BY:	JLC		
DRAWN BY:	CAD		
CHECKED BY:	JLC		
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE			
REV	ISSUED FOR	DATE	BY



<b>ELECTRICAL LEGEND</b>		DATE: MARCH 2018
		HAZEN NO.: 60701-011
		CONTRACT NO.: 01
		DRAWING NUMBER: E-01

ABBREVIATIONS

A	Amps, Ampere	LTG	Lighting
ABV	Above	mA	Milli Amps
ACT	Above Counter	MAX	Maximum
A/C	Air Conditioner	MCA	Minimum Circuit Amps
AC	Alternating Current	MCB	Main Circuit Breaker
ADJ	Adjacent	MCC	Motor Control Center
AF	Amp Frame	MCM	Thousand Circular Mils
AFC	Available Fault Current	MCP	Motor Circuit Protector
AFF	Above Finish Floor	MECH	Mechanical
AFG	Above Finish Grade	MIC	Microphone
AHU	Air Handling Unit	MIN	Minimum
AIC	Amperes Interrupting Capacity	MISC	Miscellaneous
AMB	Ambient	MOCP	Maximum Overcurrent Protection
AT	Amp Trip	MOV	Motorized operated valve
ATS	Automatic Transfer Switch	MTD	Mounted
AUX	Auxiliary, Auxiliaries	MTG	Mounting
AV	Audio Visual	MTL	Metal
AWG	American Wire Gauge	MTR	Motor
BLDG.	Building	MTS	Manual Transfer Switch
C	Conduit	MTRZD	Motorized
CAT	Catalogue	MV	Medium Voltage
CB	Circuit Breaker	N	Neutral
CKT	Circuit	NA	Not Applicable
CLF	Current Limiting Fuse	NC	Normally Closed
CLG	Ceiling	NEC	National Electrical Code
COL	Column	NEMA	National Electrical Manufacturers Association
COMM	Communication	NFPA	National Fire Protection Association
CONC	Concrete	NGR	Neutral to ground resistor
CONN	Connect	NIC	Not in Contract
CONST	Construction	NL	NIGHT LIGHT
CONT	Continuous	NO	Normally Open
CONTR	Contractor	NO	Number
CR	Card Reader	OC	On Center
CT	Cooling Tower	OD	Outside Diameter
CT	Current Transformer	OZ	Ounce
CTRL	Control	OOS	Out of Service
CU	Condensing Unit	P	Poles
D	Depth	PE	Photo-Electric
DC	Direct Current	PF	Power Factor
DIA	Diameter	PH	Phase
DN	Down	PLBG	Plumbing
DS	Disconnect Switch	PNL	Panel
DTL	Detail	PSI	Pounds Per Square Inch
DWG	Drawing	PVC	Polyvinyl Chloride
EA	Each	PWR	Power
EC	Electrical Contractor	QTY	Quantity
ECP	Equipment Control Panel	R/A	Return Air
EDH	Electric Duct Heater	RCP	Reflected Ceiling Plan
EL	Elevation	REC	Receptacle
ELEC	Electrical	REF	Reference
ELEV	Elevator	REFR	Refrigerator
EMER	Emergency	REQ'D	Required
EMS	Energy Management System	RLA	Running Load Amps
EPO	Emergency Power Off	RM	Room
EQ	Equal	RMS	Root Mean Squared
EQUIP	Equipment	RPM	RPM
EUH	Electric Unit Heater	RQMT	Requirement
EXH	Exhaust	RT	Raintight
E	Existing	RTU	Roof Top Unit
EXP	Expulsion	RVS	Reduced Voltage Starter
OF	Degrees Fahrenheit	SA	Supply Air
FA	Fire Alarm	SHT	Sheet
FACP	Fire Alarm Control Panel	SHT MTL	Sheet Metal
FCU	Fan Coil Unit	SPECS	Specifications
FDR	Feeder	SPKR	Speaker
FF	Finish Floor	SPST	Single Pole Single Throw
FIXT	Fixture	SQ	Square
FLUOR	Fluorescent	SQFT	Square Feet
FLA	Full Load Amps	SSC	Short Circuit Current
FN	Full Neutral	STD	Standard
FS	Fused Switch	SURF	Surface
FT	Feet	SW	Switch
F/A	From Above	SWBD	Switchboard
F/B	From Below	SWGR	Switchgear
G	Ground	SYM	Symmetrical
GA	Gauge	T-STAT	Thermostat
GAL	Gallons	TB	Terminal Box
GALV	Galvanized	TC	Timeclock
CCR	General Contractor	TELE	Telephone
GEN	Generator	TFR	Dry Type Transformer
GFI	Ground Fault Interrupter	TOT	Total
GFCI	Ground Fault Circuit Interrupter	TTB	Telephone Terminal Board
GPH	Gallons Per Hour	TX	Power Distribution Transformer
GPM	Gallons Per Minute	TYP	Typical
H	Height	UF	Underfloor
HACR	Heating Airconditioning Rated	UON	Unless Otherwise Noted
HORIZ	Horizontal	V	Volt
HP	Horsepower	VA	Volt-Amps
HTG	Heating	VAV	Variable Air Volume
HVAC	Heating, Ventilation, & Air Conditioning	VENTIL	Ventilation
IG	Isolated Ground	VERT	Vertical
IN	Inches	VFD	Variable Frequency Drive
INCAND	Incandescent	W	Watts
ISO	Isolation	W	Width
KA	Kiloamperes	WH	Water Heater
KCMIL	Thousand Circular Mils	WP	Weatherproof
KVA	Kilovolt Amperes	WT	Weight
KW	Kilowatt	XFMR	Dry Type Transformer
KWH	Kilowatt - Hour	Y	WYE
L	Length		
LB	Pounds (Weight)		
LIN FT	Linear Foot		

ELECTRICAL DEMOLITION NOTES (APPLICABLE TO ALL ELECTRICAL DEMOLITION DRAWINGS)

- THE CONTRACTOR SHALL REFER TO THE MECHANICAL, STRUCTURAL, CIVIL, AND DEMOLITION WORK DRAWINGS TO DETERMINE AND COORDINATE THE EXTENT OF THE DEMOLITION WORK REQUIRED FOR THE PROJECT.
- REMOVE ALL EXISTING BRANCH CIRCUITING AND EQUIPMENT (DEVICES, WIRING, CABLES, AND CONDUIT), TO ALL LOADS THAT ARE BEING REMOVED BACK TO THE SOURCE OF SUPPLY UNLESS NOTED OTHERWISE. REGARDLESS OF CHARACTER OF SURFACE AND SURFACE CONDITIONS ENCOUNTERED (CONCRETE ENCASED).
- DEMOLISH AND EXTEND EXISTING ELECTRICAL WORK AS INDICATED OR NOTED. REMOVE, RELOCATE, AND EXTEND EXISTING INSTALLATIONS TO ACCOMMODATE NEW CONSTRUCTION.
- REMOVE EXPOSED ABANDONED CONDUIT AND WIRING TO SOURCE OF SUPPLY IN ITS ENTIRETY, INCLUDING ABANDONED CONDUIT ABOVE ACCESSIBLE CEILING FINISHES. CUT CONDUIT FLUSH WITH WALLS AND FLOORS, REMOVE ALL WIRING, AND PATCH SURFACES.
- CONTRACTOR SHALL CIRCUIT TRACE ALL CIRCUITS AND EQUIPMENT THAT ARE BEING REMOVED PRIOR TO DEMOLITION. CIRCUITS SERVING OTHER AREAS NOT BEING REMOVED SHALL REMAIN FUNCTIONAL. MODIFY CONDUIT AND WIRING TO MAINTAIN CIRCUIT CONTINUITY TO REMAINING AREAS. RE-CIRCUIT THESE AREAS TO REMAINING PANELS AS REQUIRED.
- PROVIDE TEMPORARY WIRING AND CONNECTIONS TO MAINTAIN EXISTING SYSTEMS IN SERVICE DURING CONSTRUCTION. WHEN WORK MUST BE PERFORMED ON ENERGIZED EQUIPMENT OR CIRCUITS, USE PERSONNEL EXPERIENCED IN SUCH OPERATIONS.
- MAINTAIN ACCESS TO EXISTING ELECTRICAL INSTALLATIONS WHICH REMAIN ACTIVE. MODIFY INSTALLATION OR PROVIDE ACCESS AS REQUIRED.
- EXTEND EXISTING INSTALLATIONS USING MATERIALS AND METHODS COMPATIBLE WITH EXISTING ELECTRICAL INSTALLATIONS, AND PER APPLICABLE CODES OR AS INDICATED OTHERWISE.
- CLEAN AND REPAIR EXISTING MATERIALS AND EQUIPMENT WHICH IS TO REMAIN OR IS TO BE REUSED.
- FOR WIRING AND RACEWAYS FOR REUSE, PROPERLY TERMINATE CONDUCTORS, TAG THE CONDUCTORS AND RACEWAYS WITH IDENTIFICATION TAGS INDICATING PANELBOARD/CIRCUIT NUMBER OR CONDUIT TERMINATION POINT. PROVIDE COVERS FOR ALL J-BOXES.
- THE CONTRACTOR SHALL PROVIDE CONTAINMENT AND DISPOSAL OF DUST AND DEBRIS DURING DEMOLITION AND CONSTRUCTION.
- ROUTING OF EXISTING UNDERGROUND RACEWAYS IS BASED ON AS-BUILT DRAWINGS AND SHOWN DIAGRAMMATIC FOR CONNECTIVITY PURPOSES ONLY. CONTRACTOR SHALL CIRCUIT TRACE ALL EXISTING UNDERGROUND RACEWAYS TO VERIFY EXACT ROUTING PRIOR TO REMOVAL OR EXTENSION. REMOVAL OR EXTENSION OF EXISTING UNDERGROUND CONDUIT SHALL BE PERFORMED REGARDLESS OF GROUND CONDITIONS ENCOUNTERED (i.e., ROCK, GRAVEL, BOULDERS, CONCRETE ENCASEMENT) AT NO ADDITIONAL COST TO OWNER.
- DEMOLITION DRAWINGS ARE BASED ON CASUAL FIELD OBSERVATION AND EXISTING RECORD DOCUMENTS. REPORT DISCREPANCIES TO ENGINEER BEFORE DISTURBING EXISTING INSTALLATION. BEGINNING OF DEMOLITION MEANS INSTALLER ACCEPTS EXISTING CONDITIONS AND WILL MAKE MODIFICATIONS AND ADJUSTMENTS AS REQUIRED AT NO COST TO THE OWNER.
- THE CONTRACTOR SHALL FIELD VERIFY ALL UNDERGROUND OBSTRUCTIONS BEFORE ANY EXCAVATION BEGINS.
- DEMOLITION WORK CONSIST OF AND IS NOT LIMITED TO THE REMOVAL, STORAGE AND DISPOSAL OF ALL EXISTING ELECTRICAL EQUIPMENT, SCADA SYSTEM, INSTRUMENTATION, AND DATA SYSTEMS.
- BEFORE DEMOLITION BEGINS, CONTRACTOR SHALL CONTACT OWNER TO VERIFY WHICH UNUSED ITEMS OF EXISTING EQUIPMENT OWNER DESIRES. CONTRACTOR SHALL SALVAGE THAT EQUIPMENT AND DELIVER IT TO OWNER'S WAREHOUSE IN EL PASO. CONTRACTOR SHALL REQUEST A WRITTEN RECEIPT WHEN SALVAGED EQUIPMENT IS TURNED OVER TO OWNER.
- ALL ELECTRICAL WORK SHALL BE DONE IN A NEAT WORKMANLIKE MANNER. ANY DAMAGE DONE TO ANY ADJACENT CONSTRUCTION OR FINISHES SHALL BE REPAIRED TO THE ENGINEER/OWNER'S SATISFACTION AT NO COST TO THE OWNER.
- COORDINATE UTILITY SERVICE OUTAGES WITH UTILITY COMPANY AND OWNER.

GENERAL ELECTRICAL NOTES (APPLICABLE TO ALL ELECTRICAL DRAWINGS)

- THE CONTRACTOR SHALL COORDINATE ALL WORK WITH STRUCTURAL, AND MECHANICAL DRAWINGS. COORDINATE EQUIPMENT SIZES AND LOCATIONS, SCHEDULES AND SPECIFICATIONS.
- THE CONTRACTOR SHALL REVIEW THE COMPLETE SET OF DRAWINGS FOR ADDITIONAL INFORMATION CONCERNING THE INTERFACES WITH EXISTING SYSTEMS AND EQUIPMENT NECESSARY FOR THIS PROJECT. THE CONTRACTOR SHALL FAMILIARIZE SELF WITH THE DETAILS OF THE WORK, CONDITIONS, AND DIMENSIONS FOR THIS PROJECT AND INCLUDE IN THE BID ALL NECESSARY COSTS ASSOCIATED WITH COMPLETION OF THE WORK. IF DISCREPANCIES OF ANY KIND ARE IDENTIFIED, THE CONTRACTOR SHALL IMMEDIATELY ADVISE THE ENGINEER IN WRITING OF THE DISCREPANCIES FOR RESOLUTION BY THE ENGINEER.
- PROVIDE ALL MATERIALS, SERVICES, SUPERVISION, AND LABOR NECESSARY FOR COMPLETE, FUNCTIONAL, AND OPERATIONAL SYSTEMS.
- MATERIALS AND WORKMANSHIP SHALL COMPLY WITH THE CONTRACT DOCUMENTS, INDUSTRY STANDARDS, AND ALL CODES. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE SPECIFICATIONS.
- CONTRACTOR SHALL TAKE PROPER PRECAUTIONS TO PROTECT ALL EXISTING FACILITIES, UTILITIES, AND PROPERTY. CONTRACTOR SHALL ALSO TAKE PROPER PRECAUTIONS OVER PROPERTY WHICH HE MAY TRANSPORT, HOIST OR MOVE MATERIAL, EQUIPMENT, AND DEBRIS AND SHALL REPAIR TO ENGINEER'S SATISFACTION ALL DAMAGES CAUSED DURING CONSTRUCTION. THE CONTRACTOR SHALL COORDINATE AND NOTIFY THE OWNER FOR APPROVAL AND SCHEDULING OF ANY SYSTEM INTERRUPTION.
- ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S PUBLISHED RECOMMENDATIONS FOR SERVICE AS INTERPRETED BY THE ENGINEER. THE INSTALLATION OF ALL EQUIPMENT SHALL BE MADE BY EXPERIENCED CRAFTSMAN IN A NEAT WORKMANLIKE MANNER. ALL MATERIALS, TOOLS, COSTS AND SERVICES NECESSARY TO COMPLETELY INSTALL ALL ELECTRICAL WORK SHALL BE FURNISHED BY THE CONTRACTOR.
- CIRCUIT BREAKERS FOR INSTALLATION IN EXISTING PANELBOARDS SHALL BE BY THE MANUFACTURER OF THAT PANELBOARD. MATCH THE SHORT CIRCUIT RATING OF THE EXISTING PANEL RATINGS.
- ALL RACEWAYS SHALL CONTAIN AN INSULATED GROUND WIRE SIZED AS INDICATED OR PER THE 2014 NATIONAL ELECTRICAL CODE (NFPA-70).
- PENETRATIONS OF STRUCTURAL ELEMENTS WALLS, FLOORS AND ROOFS FOR THE PASSAGE OF RACEWAYS SHALL BE APPROVED BY THE STRUCTURAL ENGINEER. ALL PENETRATIONS SHALL BE PROPERLY SEALED AFTER INSTALLATION SO AS TO MAINTAIN THE INTEGRITY OF THE SYSTEM PENETRATED.
- THE TERM "PROVIDE" USED IN THE DRAWINGS AND SPECIFICATIONS IMPLIES THE CONTRACTOR IS TO FURNISH, TRANSPORT, INSTALL, CONNECT, WARRANT AND START-UP, INCLUSIVELY.
- THE ELECTRICAL DRAWINGS ARE DIAGRAMMATIC ONLY BUT ARE REQUIRED TO BE FOLLOWED AS CLOSELY AS ACTUAL CONSTRUCTION CONDITIONS AND WORK OF OTHER TRADES PERMIT.
- CIRCUITING SHOWN IS DIAGRAMMATIC ONLY, INDICATING CIRCUIT NUMBERS. CONTRACTOR SHALL EXTEND HOT, NEUTRAL, SWITCH-LEG, GROUND, AND CONTROL CONDUCTORS TO ALL ELECTRICAL EQUIPMENT INDICATED TO PROVIDE A FULLY FUNCTIONAL SYSTEM.
- PROVIDE MANUFACTURERS' OPERATING AND MAINTENANCE MANUAL UPON COMPLETION OF WORK FOR ALL ELECTRICAL EQUIPMENT WITH REPLACEMENT PARTS LIST FOR ALL EQUIPMENT.
- CONTRACTOR SHALL INCLUDE IN HIS BID, THE COST FOR PREPARING AS-BUILT DOCUMENTS IN ELECTRONIC FORMAT (AUTOCAD 2017) AND FURNISHING A COPY TO THE OWNER ON COMPACT DISK (CD)
- REGARDLESS OF CIRCUITING INDICATED ON THE DRAWINGS, THE CONTRACTOR SHALL BALANCE THE LOADS BETWEEN PHASES ON ALL EXISTING AND NEW PANEL BOARDS WITHIN SCOPE OF WORK.
- PROVIDE ELECTRIC SERVICE REQUIRED BY ALL TRADES INVOLVED IN THE CONSTRUCTION OF THE PROJECT, RECEPTACLES, CORDS, LIGHTS AND LEVELS OF ILLUMINATION SHALL CONFORM TO OSHA, NEC AND LOCAL CODES AND ORDINANCES. PROVIDE TEMPORARY POWER TO THE SITE.
- PROVIDE ENGRAVED NAMEPLATES ATTACHED WITH SCREWS ON ALL NEW AND EXISTING PANELS, ENCLOSURES AND EQUIPMENT WITHIN THE SCOPE OF WORK.
- ALL ELECTRICAL CONSTRUCTION WORK UNDER THIS CONTRACT SHALL BE DONE IN STRICT COMPLIANCE WITH THE 2014 N.E.C. AND MUNICIPAL ELECTRICAL CODE.
- ELECTRICAL CONTRACTOR SHALL COORDINATE POWER OUTAGES WITH OWNER.
- PROVIDE ALUMINUM RIGID CONDUIT, BOXES, CONDUIT BODIES AND CONDUIT SEAL OFFS RATED FOR CORROSIVE ENVIRONMENTS FOR ALL ELECTRICAL INSTALLATIONS WITHIN CLASS 1, DIV 2 AREAS. ELECTRICAL SUPPORTS AND ACCESSORIES SHALL BE STAINLESS STEEL.
- CONDUIT ROUTING IS SHOWN DIAGRAMMATICALLY. CONTRACTOR TO ROUTE IN THE MOST DIRECT WAY ALLOWED BY FIELD CONDITIONS AND AS REQUIRED BY EQUIPMENT LAYOUT.
- CONTRACTOR SHALL FIELD VERIFY ALL UNDERGROUND OBSTRUCTIONS BEFORE ANY EXCAVATION BEGINS.
- REFER TO DRAWING G-02 FOR HAZARDOUS LOCATION AREAS.
- REFER TO STRUCTURAL DRAWING S-01 FOR SEISMIC CATEGORY FOR ELECTRICAL SUPPORT SEISMIC PERFORMANCE, QUALIFICATION AND WITHSTAND RATINGS.

PROJECT ENGINEER:	JLC
DESIGNED BY:	JLC
DRAWN BY:	CAD
CHECKED BY:	JLC
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	
REV	ISSUED FOR



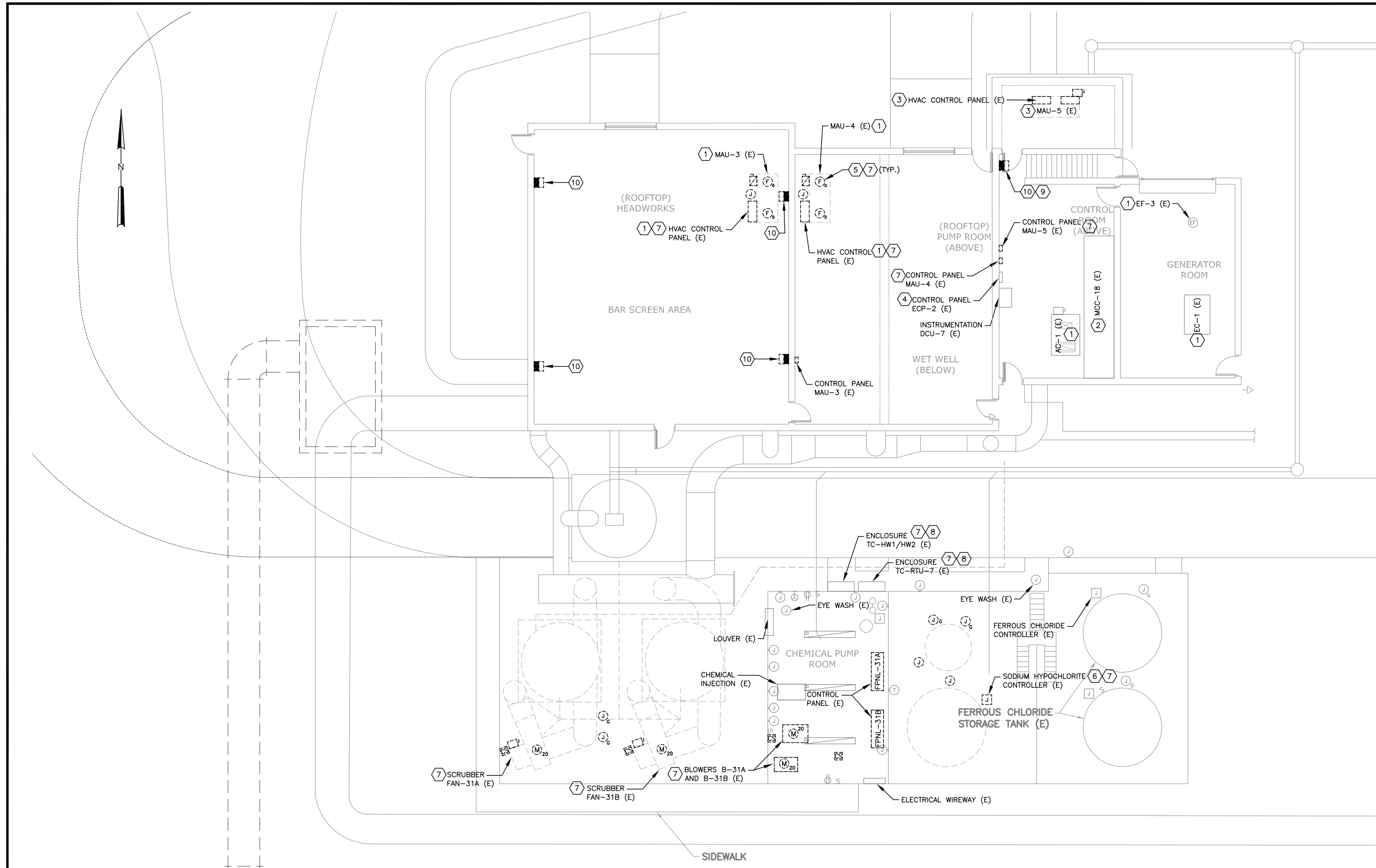
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HASKELL R. STREET WASTEWATER TREATMENT PLANT ODOR CONTROL - HEADWORKS

ELECTRICAL GENERAL NOTES

DATE:	MARCH 2018
HAZEN NO.:	60701-011
CONTRACT NO.:	01
DRAWING NUMBER:	E-02



**GENERAL NOTES:**

1. REFER TO ELECTRICAL LEGEND AND ELECTRICAL GENERAL NOTES FOR ADDITIONAL INFORMATION.
2. COORDINATE WITH GENERAL CONTRACTOR FOR PROJECT PHASING REQUIREMENTS. EXISTING SCRUBBERS, FANS AND BLOWERS SHALL BE ACTIVE DURING THE INSTALLATION OF NEW SYSTEM TO MINIMIZE SWITCH OVER TIME. CONTRACTOR SHALL COORDINATE WITH OWNER AVAILABLE SPACE/SPARES FOR POWER, CONTROL AND INSTRUMENTATION CIRCUITS.
3. EQUIPMENT TO THAT WILL BE DEMOLISHED BY MECHANICAL OR HVAC CONTRACTORS SHALL BE DISCONNECTED BY ELECTRICAL CONTRACTOR. CONDUIT AND WIRING SHALL BE REMOVED BACK TO SOURCE.

**KEYED NOTES:**

- 1 APPROXIMATE LOCATION ON ROOF.
- 2 REFER TO ONE-LINE DIAGRAMS FOR DEMOLITION REQUIREMENTS.
- 3 APPROXIMATE LOCATION AT GRADE LEVEL.
- 4 EXISTING CONTROL PANEL CONTAINS TERMINAL BLOCKS WITH DIGITAL SIGNALS FROM EQUIPMENT BEING REMOVED, IT ALSO CONTAINS SIGNALS FROM EQUIPMENT THAT WILL REMAIN IN PLACE. CONTRACTOR SHALL CIRCUIT TRACE AND REMOVE ONLY WIRING THAT PERTAINS TO EQUIPMENT BEING DEMOLISHED AND SHALL KEEP REMAINING SIGNALS ACTIVE.
- 5 EXISTING AIRFLOW DETECTOR ON DUCTWORK TO BE REMOVED. REFER TO HVAC DRAWINGS FOR EXACT LOCATION.
- 6 EXISTING LEVEL SIGNAL TO BE REMOVED.
- 7 CONTRACTOR SHALL COORDINATE WITH EPW SCADA DEPARTMENT BEFORE DEMOLITION OR WIRING RELOCATION.
- 8 EXISTING PULL BOXES WITH ELECTRICAL AND INSTRUMENTATION WIRING FOR CONTROL PANELS AND BLOWER SIGNALS THAT WILL BE DEMOLISHED IN CHEMICAL PUMP ROOM.
- 9 APPROXIMATE LOCATION IN ELECTRICAL ROOM. LEL AND H2S SENSOR ELEMENTS LOCATED IN INFLUENT METER ROOM.
- 10 APPROXIMATE LOCATION OF EXISTING GAS AND FLAME DETECTOR TRANSMITTER WHICH INCLUDES LEL & H2S SENSORS AND INDICATING TRANSMITTER. EXISTING INSTRUMENTS TO BE REPLACED WITH NEW TRANSMITTERS AT SAME LOCATION. INSTRUMENTS CURRENTLY POWERED AND ANALOG SIGNALS TERMINATED AT PLC-DCU-7. EXISTING ELECTRICAL CONDUIT TO BE REUSED, SHIELDED POWER AND SIGNAL WIRING USAGE IS OPTIONAL IF FOUND IN GOOD CONDITION AFTER CABLE TESTING.

**POWER AND INSTRUMENTATION DEMOLITION PLAN**

1/8"=1'-0"

REV	ISSUED FOR	DATE	BY

PROJECT ENGINEER:	JLC
DESIGNED BY:	JLC
DRAWN BY:	CAD
CHECKED BY:	JLC
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	



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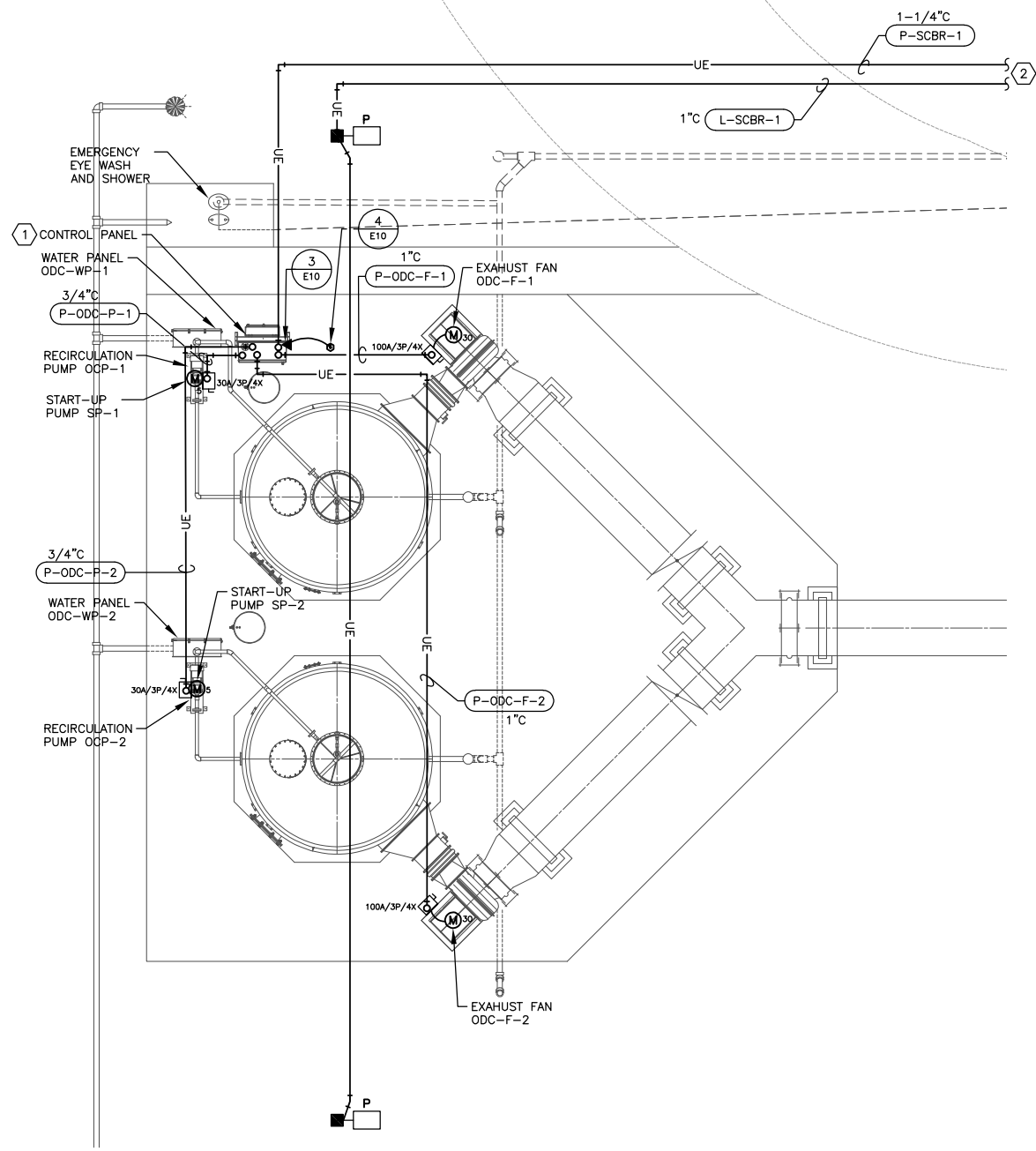
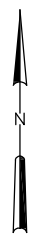
**Bath ENGINEERING**  
 TEXAS FIRM REGISTRATION NO. 829  
 4110 RIO BRAVO SUITE 102  
 EL PASO, TX 79902  
 TEL: 915-313-7200



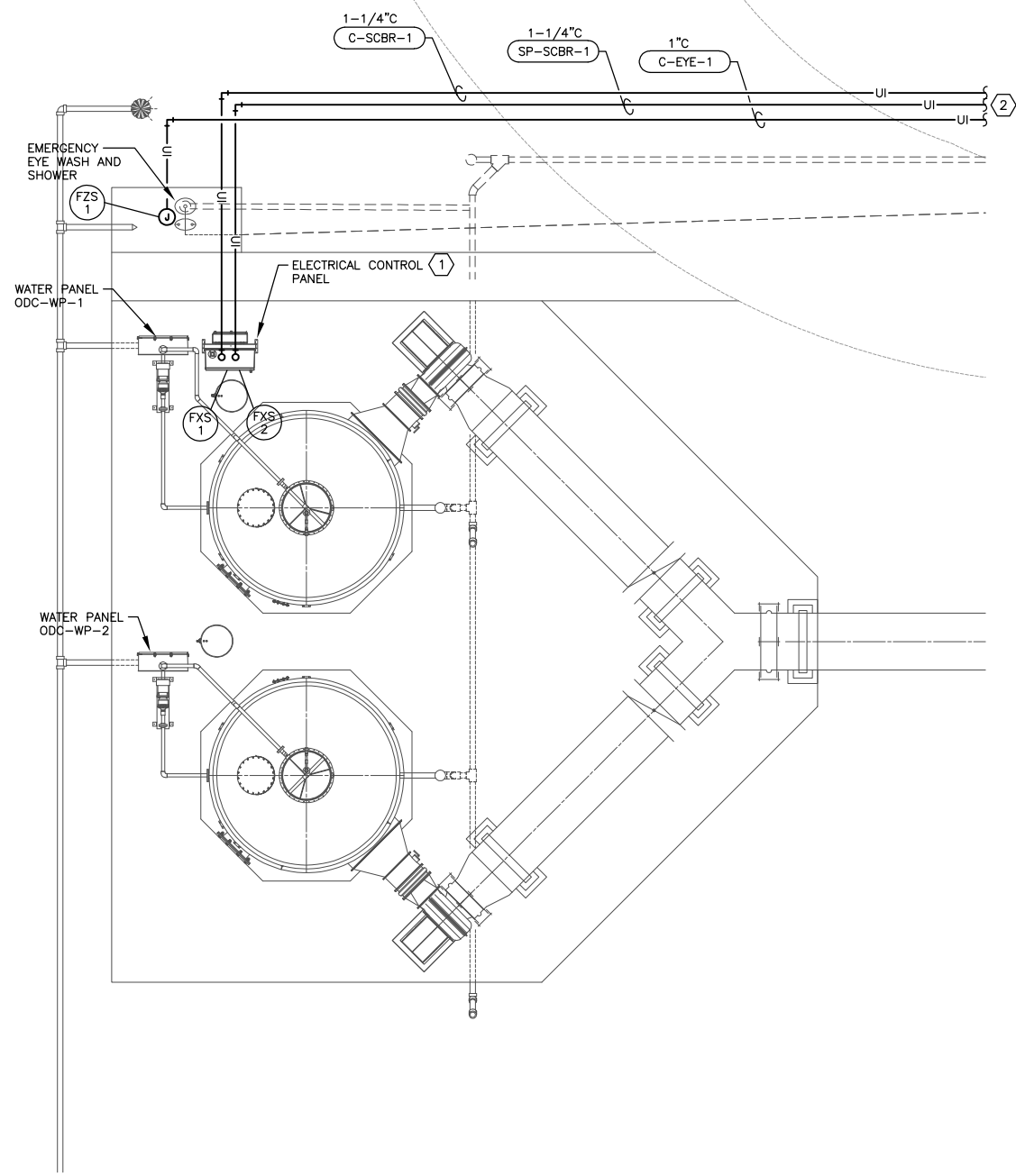
HASKELL R. STREET WASTEWATER TREATMENT PLANT ODOR CONTROL - HEADWORKS

**ELECTRICAL**  
**POWER AND INSTRUMENTATION DEMOLITION PLAN**

DATE:	MARCH 2018
HAZEN NO.:	60701-011
CONTRACT NO.:	01
DRAWING NUMBER:	E-03



**ODOR CONTROL POWER PLAN**  
3/16"=1'-0"



**ODOR CONTROL INSTRUMENTATION PLAN**  
3/16"=1'-0"

**GENERAL NOTES:**

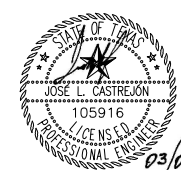
1. REFER TO ELECTRICAL LEGEND AND ELECTRICAL GENERAL NOTES FOR ADDITIONAL INFORMATION.
2. COORDINATE WITH GENERAL CONTRACTOR FOR PROJECT PHASING REQUIREMENTS. EXISTING SCRUBBERS, FANS AND BLOWERS SHALL BE ACTIVE DURING THE INSTALLATION OF NEW SYSTEM TO MINIMIZE SWITCH OVER TIME. CONTRACTOR SHALL COORDINATE WITH OWNER AVAILABLE SPACE/SPARES FOR POWER, CONTROL AND INSTRUMENTATION CIRCUITS.
3. PROVIDE QUANTITY OF SEAL-OFFS AS REQUIRED TO MEET N.E.C. ARTICLE 501.
4. VERIFY EXACT ROUTE OF NEW UNDERGROUND CONDUITS WITH GENERAL CONTRACTOR AND OWNER PRIOR TO EXCAVATE TO AVOID ANY CONFLICTS WITH NEW AND EXISTING PIPING OR UTILITIES.
5. REFER TO DRAWING G-2 FOR HAZARDOUS LOCATION AREAS.

**KEYED NOTES:**

- ① PROVIDED BY MECHANICAL CONTRACTOR WIRED AND CONNECTED BY INSTRUMENTATION CONTRACTOR.
- ② CONTINUE ON POWER AND INSTRUMENTATION PLANS, SHEETS E-05 AND E-06 RESPECTIVELY.

REV	ISSUED FOR	DATE	BY

PROJECT ENGINEER:	JLC
DESIGNED BY:	JLC
DRAWN BY:	CAD
CHECKED BY:	JLC
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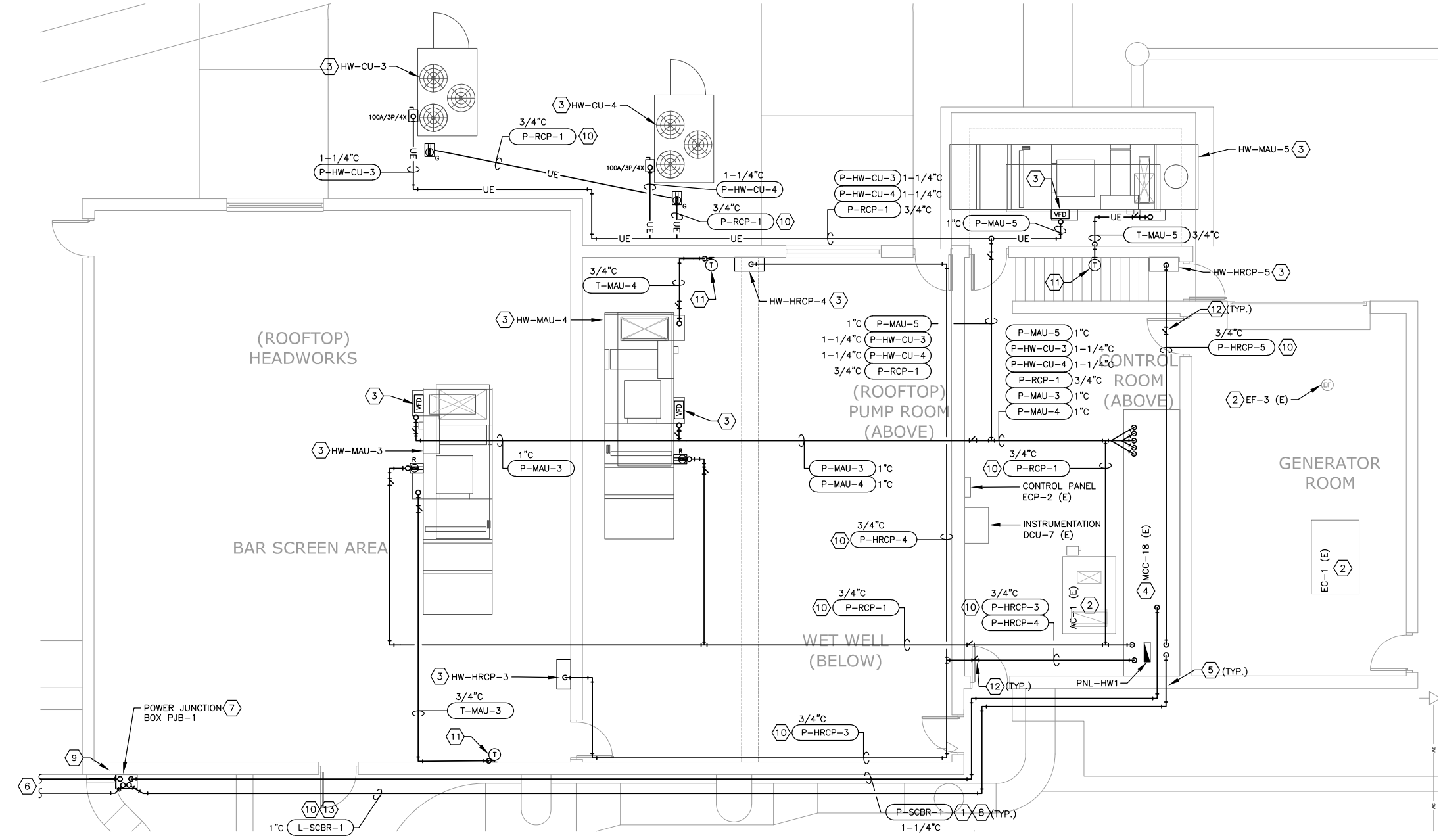
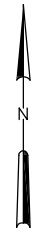
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**Bath ENGINEERING**  
 TEXAS FIRM REGISTRATION NO. 829  
 4110 RIO BRAVO SUITE 102  
 EL PASO, TX 79902  
 TEL: 915-313-7200

**el paso WATER**  
 HASKELL R. STREET WASTEWATER TREATMENT PLANT ODOR CONTROL - HEADWORKS

**ELECTRICAL**  
 ODOR CONTROL POWER AND INSTRUMENTATION PLANS

DATE:	MARCH 2018
HAZEN NO.:	60701-011
CONTRACT NO.:	01
DRAWING NUMBER:	E-04



**HEADWORKS BUILDING POWER PLAN**

3/16"=1'-0"

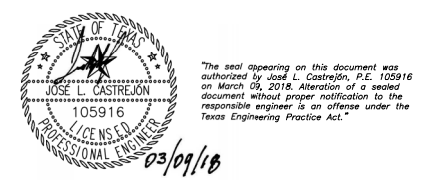
**GENERAL NOTES:**

1. REFER TO ELECTRICAL LEGEND AND ELECTRICAL GENERAL NOTES FOR ADDITIONAL INFORMATION.
2. COORDINATE WITH GENERAL CONTRACTOR FOR PROJECT PHASING REQUIREMENTS. EXISTING SCRUBBERS, FANS AND BLOWERS SHALL BE ACTIVE DURING THE INSTALLATION OF NEW SYSTEM TO MINIMIZE SWITCH OVER TIME. CONTRACTOR SHALL COORDINATE WITH OWNER AVAILABLE SPACE/SPARES FOR POWER, CONTROL AND INSTRUMENTATION CIRCUITS.
3. PROVIDE QUANTITY OF SEAL-OFFS AS REQUIRED TO MEET N.E.C. ARTICLE 501.
4. VERIFY EXACT ROUTE OF NEW UNDERGROUND CONDUITS WITH GENERAL CONTRACTOR AND OWNER PRIOR TO EXCAVATE TO AVOID ANY CONFLICTS WITH NEW AND EXISTING PIPING OR UTILITIES.
5. REFER TO DRAWING G-2 FOR HAZARDOUS LOCATION AREAS.

**KEYED NOTES:**

- 1 REFER TO ONE-LINE DIAGRAM AND CONDUIT AND WIRING SCHEDULE FOR REQUIREMENTS.
- 2 APPROXIMATE LOCATION ON ROOF.
- 3 PROVIDED BY HVAC CONTRACTOR WIRED AND CONNECTED BY ELECTRICAL AND/OR INSTRUMENTATION CONTRACTOR. REFER TO HVAC DRAWINGS FOR REQUIREMENTS.
- 4 CONTRACTOR TO PROVIDE 12" SQUARE D FEEDER BREAKER BUCKETS FOR EXISTING MCC SQUARE D MODEL 5 TO SERVE NEW HVAC AND SCRUBBER'S EQUIPMENT. CONTRACTOR SHALL FIELD VERIFY AVAILABLE MCC SPACES AND COORDINATE WITH OWNER PRIOR TO ORDER. REFER TO ONE-LINE DIAGRAMS ON SHEET E-218 FOR NEW LOAD AND FEEDER BREAKER REQUIREMENTS. THESE ARE EXISTING PLANT ONE-LINE DRAWINGS THAT HAVE BEEN UPDATED TO REFLECT SCRUBBER PROJECT UPGRADES.
- 5 REFER TO WALL PENETRATION DETAIL FOR REQUIREMENTS. TYPICAL FOR ALL CONDUIT WALL PENETRATIONS.
- 6 CONTINUE ON ODOR CONTROL PLAN, SHEET E-04.
- 7 16X16X6 NEMA 4X ENCLOSURE WITH HINGED DOOR.
- 8 EXTEND NEW CONDUITS FOLLOWING EXISTING CONDUIT ROUTE AND PROVIDE NEW UNISTRUT AND SUPPORTS AS REQUIRED.
- 9 EXISTING SIDEWALK AND ASPHALT SHALL BE SAW-CUT AND RESTORED TO ORIGINAL CONDITIONS AND MATCH ADJACENT GRADE LEVEL.
- 10 SERVE FROM EXISTING 1P/20A CIRCUIT BREAKERS AT PANEL HW1 THAT USED TO SUPPLY POWER TO EXISTING EQUIPMENT THAT IS BEING DEMOLISHED AT CHEMICAL PUMP ROOM.
- 11 VERIFY EXACT LOCATION WITH MECHANICAL CONTRACTOR BEFORE ROUGH-IN.
- 12 INSTALL CONDUIT SEAL-OFFS WITHIN 10 FEET OF CLASSIFIED LOCATION BOUNDARY.
- 13 EXTEND NEW CIRCUIT THRU EXISTING LIGHTING CONTACTOR SPARE LOCATED AT CUBICLE UNIT 10E IN MCC-18

PROJECT ENGINEER:	JLC
DESIGNED BY:	JLC
DRAWN BY:	CAD
CHECKED BY:	JLC
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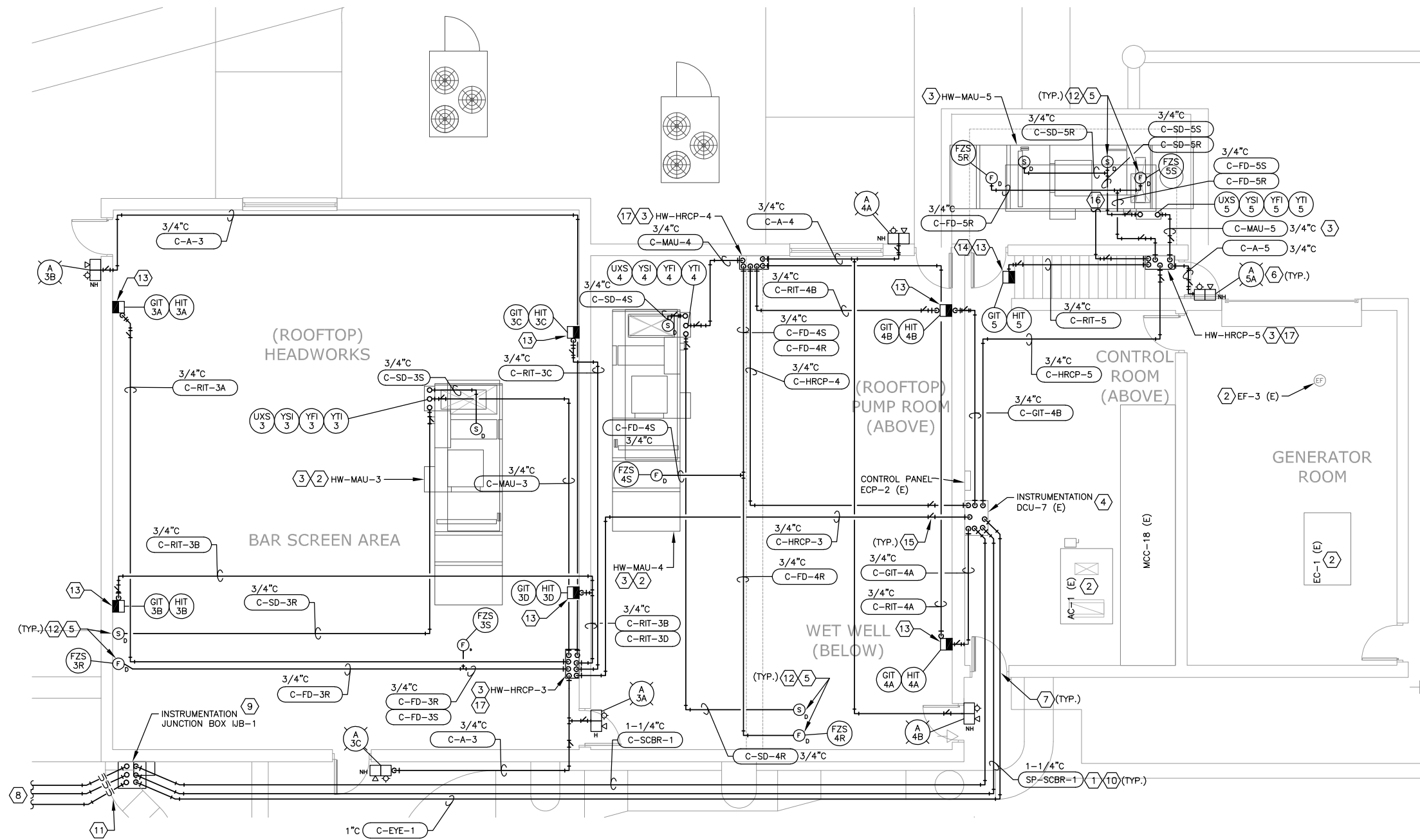
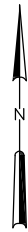


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**HASKELL R. STREET WASTEWATER TREATMENT PLANT ODOR CONTROL - HEADWORKS**

**ELECTRICAL**  
**HEADWORKS BUILDING POWER PLAN**

DATE:	MARCH 2018
HAZEN NO.:	60701-011
CONTRACT NO.:	01
DRAWING NUMBER:	<b>E-05</b>



**HEADWORKS BUILDING INSTRUMENTATION PLAN**  
3/16"=1'-0"

**GENERAL NOTES:**

1. REFER TO ELECTRICAL LEGEND AND ELECTRICAL GENERAL NOTES FOR ADDITIONAL INFORMATION.
2. COORDINATE WITH GENERAL CONTRACTOR FOR PROJECT PHASING REQUIREMENTS. EXISTING SCRUBBERS, FANS AND BLOWERS SHALL BE ACTIVE DURING THE INSTALLATION OF NEW SYSTEM TO MINIMIZE SWITCH OVER TIME. CONTRACTOR SHALL COORDINATE WITH OWNER AVAILABLE SPACE/SPARES FOR POWER, CONTROL AND INSTRUMENTATION CIRCUITS.
3. PROVIDE QUANTITY OF SEAL-OFFS AS REQUIRED TO MEET N.E.C. ARTICLE 501.
4. VERIFY EXACT ROUTE OF NEW UNDERGROUND CONDUITS WITH GENERAL CONTRACTOR AND OWNER PRIOR TO EXCAVATE TO AVOID ANY CONFLICTS WITH NEW AND EXISTING PIPING OR UTILITIES.
5. REFER TO DRAWING G-2 FOR HAZARDOUS LOCATION AREAS.

**KEYED NOTES:**

- 1 REFER TO ONE-LINE DIAGRAM AND CONDUIT AND WIRING SCHEDULE FOR REQUIREMENTS.
- 2 APPROXIMATE LOCATION ON ROOF.
- 3 PROVIDED BY HVAC CONTRACTOR WIRED AND CONNECTED BY ELECTRICAL AND/OR INSTRUMENTATION CONTRACTOR. REFER TO HVAC DRAWINGS FOR REQUIREMENTS.
- 4 CONTRACTOR TO PROVIDE NEW INPUT/OUTPUT MODULES FOR EXISTING ALLEN BRADLEY PLC, NEW ETHERNET SWITCH AND NEW MULTIPROTOCOL GATEWAY. REFER TO SHEET E-08.
- 5 AIR FLOW SWITCH AND SMOKE DETECTORS TO BE PROVIDED BY HVAC CONTRACTOR, WIRED AND CONNECTED BY ELECTRICAL CONTRACTOR. COORDINATE EXACT LOCATION WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.
- 6 VISUAL AND AUDIBLE ALARMS SHALL BE PROVIDED AND AT ENTRANCES TO CLASS I DIV II SPACE/ROOMS TO MEET NFPA 820.
- 7 REFER TO WALL PENETRATION DETAIL FOR REQUIREMENTS. TYPICAL FOR ALL CONDUIT WALL PENETRATION.
- 8 CONTINUE ON ODOR CONTROL PLAN, SHEET E-04.
- 9 16X16X6 NEMA 4X ENCLOSURE WITH HINGED DOOR.
- 10 EXTEND NEW CONDUITS FOLLOWING EXISTING CONDUIT ROUTE AND PROVIDE NEW UNISTRUT AND SUPPORTS AS REQUIRED.
- 11 EXISTING SIDEWALK AND ASPHALT SHALL BE SAW-CUT AND RESTORED TO ORIGINAL CONDITIONS AND MATCH TO ADJACENT GRADE LEVEL.
- 12 MOUNTED ON DUCTWORK. COORDINATE FINAL LOCATION WITH HVAC DRAWINGS.
- 13 NEW GAS AND FLAME DETECTOR TRANSMITTER WHICH INCLUDES LEL AND H2S SENSORS AND INDICATING TRANSMITTER. CONTRACTOR SHALL PROVIDE ALL CALIBRATION ACCESSORIES AND TUBING AS REQUIRED. LEL SENSOR SHALL BE LOCATED 12" FROM CEILING AND H2S SENSOR 4 TO 6 FEET ABOVE FINISHED FLOOR.
- 14 APPROXIMATE LOCATION IN ELECTRICAL ROOM, LEL AND H2S SENSORS ELEMENTS LOCATED IN INFLUENT METER ROOM.
- 15 INSTALL CONDUIT SEAL-OFFS WITHIN 10 FEET OF CLASSIFIED LOCATION BOUNDARY.
- 16 EXTEND TO ADDITIONAL ALARMS LOCATED AT INTERMEDIATE AND BOTTOM LEVELS. REFER TO HVAC DRAWINGS FOR LOCATIONS. HORN AND BEACON ALARMS LOCATED IN INFLUENT AREAS SHALL BE RATED FOR HAZARDOUS LOCATIONS.
- 17 PROVIDE INTERPOSING RELAYS TO INTERFACE WITH HORN AND BEACON ALARMS AS REQUIRED.

PROJECT ENGINEER:	JLC
DESIGNED BY:	JLC
DRAWN BY:	CAD
CHECKED BY:	JLC
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HASKELL R. STREET WASTEWATER TREATMENT PLANT ODOR CONTROL - HEADWORKS

ELECTRICAL  
HEADWORKS BUILDING INSTRUMENTATION PLAN

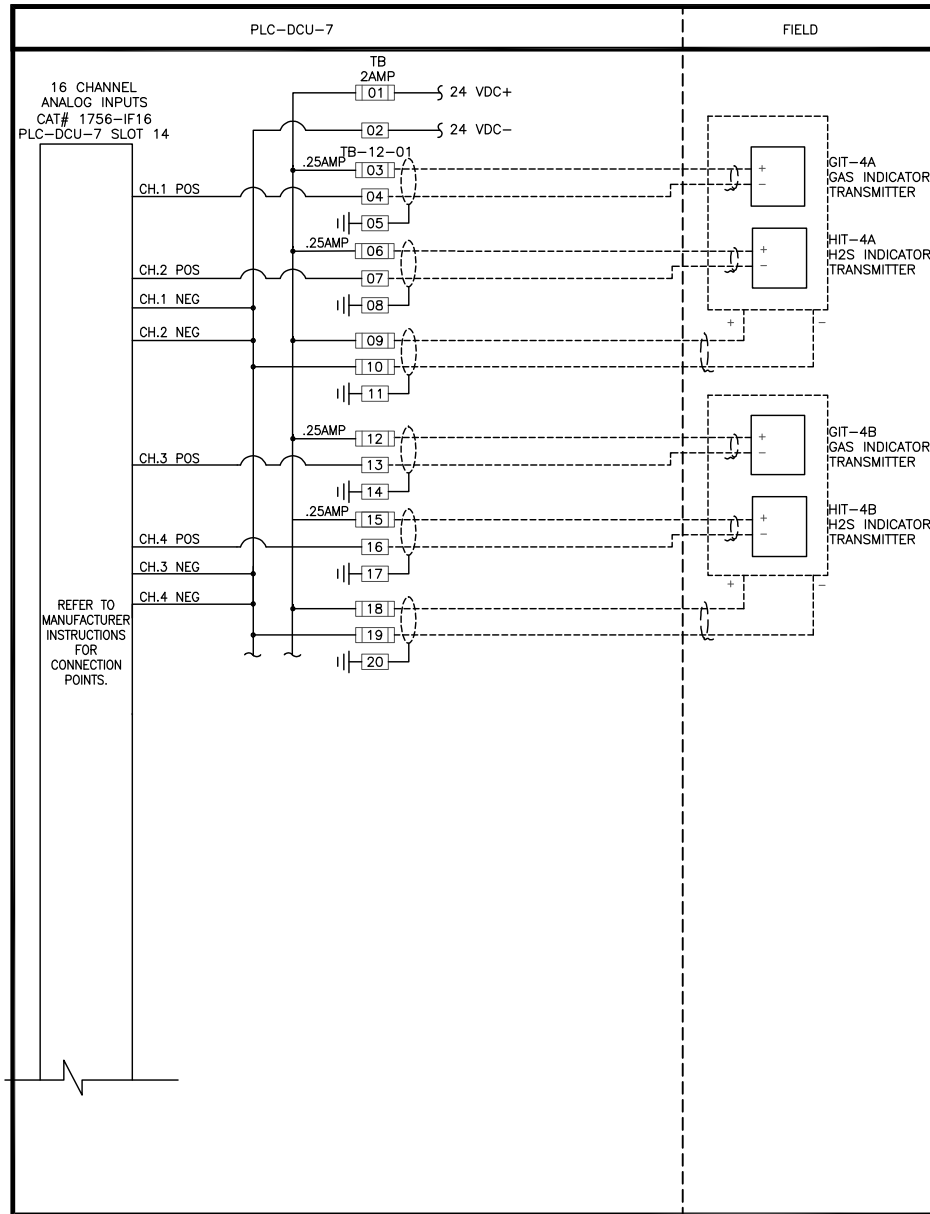
DATE:	MARCH 2018
HAZEN NO.:	60701-011
CONTRACT NO.:	01
DRAWING NUMBER:	E-06



REV.	CONDUIT OR CABLE NUMBER	WIRING DIAGRAM DRAWING NUMBER	POWER DISTRIBUTION																	ORIGIN	DESTINATION		SERVICE DESCRIPTION	EQUIPMENT DATA	REMARKS
			CONDUIT			CABLE TYPE	PHASE	CONDUCTORS									CONTROL				EQUIP. NO.	PLAN DWG.			
			SIZE	MATERIAL	APPROX. LENGTH			POWER			GROUND			CONTROL			APPROX. LENGTH								
								NO.	WIRE	INSUL. VOLTAGE	INSUL. TYPE	WIRE	INSUL. VOLTAGE	INSUL. TYPE	NO.	WIRE		INSUL. VOLTAGE	INSUL. TYPE						
0	P-SCRB-1	-	1-1/4 IN	ARCPVC	285	3-1/4C+G	3	3	2 AWG CU	600 V	TH#N	6 AWG CU	600 V	TH#N	-	-	-	-	-	MCC-18	CONTROL PANEL	E-03	480V, 3Ø, 3W FEEDER	SCRUBBER CONTROL PANEL	ARC OR P.V.C AS SHOWN ON DRAWINGS.
0	P-MAU-3	-	1 IN	ARC	160	3-1/4C+G	3	3	8 AWG CU	600 V	TH#N	10 AWG CU	600 V	TH#N	-	-	-	-	-	MCC-18	VFD AT HW-MAU-3	E-04	480V, 3Ø, 3W FEEDER	MAKE UP AIR UNIT HW-MAU-3	ARC AS SHOWN ON DRAWINGS.
0	P-MAU-4	-	1 IN	ARC	135	3-1/4C+G	3	3	8 AWG CU	600 V	TH#N	10 AWG CU	600 V	TH#N	-	-	-	-	-	MCC-18	VFD AT HW-MAU-4	E-04	480V, 3Ø, 3W FEEDER	MAKE UP AIR UNIT HW-MAU-4	ARC AS SHOWN ON DRAWINGS.
0	P-MAU-5	-	1 IN	ARCPVC	50	3-1/4C+G	3	3	8 AWG CU	600 V	TH#N	10 AWG CU	600 V	TH#N	-	-	-	-	-	MCC-18	VFD AT HW-MAU-5	E-04	480V, 3Ø, 3W FEEDER	MAKE UP AIR UNIT HW-MAU-5	ARC OR P.V.C AS SHOWN ON DRAWINGS.
0	P-HW-CU-3	-	1-1/4 IN	ARCPVC	100	3-1/4C+G	3	3	3 AWG CU	600 V	TH#N	8 AWG CU	600 V	TH#N	-	-	-	-	-	MCC-18	HW-CU-3	E-04	480V, 3Ø, 3W FEEDER	CONDENSING UNIT HW-CU-3	ARC OR P.V.C AS SHOWN ON DRAWINGS.
0	P-HW-CU-4	-	1-1/4 IN	ARCPVC	80	3-1/4C+G	3	3	3 AWG CU	600 V	TH#N	8 AWG CU	600 V	TH#N	-	-	-	-	-	MCC-18	HW-CU-4	E-04	480V, 3Ø, 3W FEEDER	CONDENSING UNIT HW-CU-4	ARC OR P.V.C AS SHOWN ON DRAWINGS.
0	P-ODC-F-1	-	1 IN	ARCPVC	30	3-1/4C+G	3	3	4 AWG CU	600 V	TH#N	6 AWG CU	600 V	TH#N	-	-	-	-	-	CONTROL PANEL	ODC-F-1	E-03	480V, 3Ø, 3W FEEDER	30 HP ODOR CONTROL FAN-1	ARC OR P.V.C AS SHOWN ON DRAWINGS.
0	P-ODC-F-2	-	1 IN	ARCPVC	30	3-1/4C+G	3	3	4 AWG CU	600 V	TH#N	6 AWG CU	600 V	TH#N	-	-	-	-	-	CONTROL PANEL	ODC-F-2	E-03	480V, 3Ø, 3W FEEDER	30 HP ODOR CONTROL FAN-2	ARC OR P.V.C AS SHOWN ON DRAWINGS.
0	P-ODC-P-1	-	3/4 IN	ARCPVC	20	3-1/4C+G	3	3	10 AWG CU	600 V	TH#N	10 AWG CU	600 V	TH#N	-	-	-	-	-	CONTROL PANEL	ODC-P-1	E-03	480V, 3Ø, 3W FEEDER	5 HP RECIRCULATION PUMP-1	ARC OR P.V.C AS SHOWN ON DRAWINGS.
0	P-ODC-P-2	-	3/4 IN	ARCPVC	20	3-1/4C+G	3	3	10 AWG CU	600 V	TH#N	10 AWG CU	600 V	TH#N	-	-	-	-	-	CONTROL PANEL	ODC-P-1	E-03	480V, 3Ø, 3W FEEDER	5 HP RECIRCULATION PUMP-1	ARC OR P.V.C AS SHOWN ON DRAWINGS.
0	P-HRCP-3	-	3/4 IN	ARC	90	2-1/4C+G	1	2	12 AWG CU	600 V	TH#N	12 AWG CU	600 V	TH#N	-	-	-	-	-	MCC-18 PANEL HW1	HW-HRCP-3	E-04	120V, 1Ø, 3W CIRCUIT	CONTROL PANEL HW-HRCP-3	ARC AS SHOWN ON DRAWINGS.
0	P-HRCP-4	-	3/4 IN	ARC	70	2-1/4C+G	1	2	12 AWG CU	600 V	TH#N	12 AWG CU	600 V	TH#N	-	-	-	-	-	MCC-18 PANEL HW1	HW-HRCP-4	E-04	120V, 1Ø, 3W CIRCUIT	CONTROL PANEL HW-HRCP-4	ARC AS SHOWN ON DRAWINGS.
0	P-HRCP-5	-	3/4 IN	ARC	60	2-1/4C+G	1	2	12 AWG CU	600 V	TH#N	12 AWG CU	600 V	TH#N	-	-	-	-	-	MCC-18 PANEL HW1	HW-HRCP-5	E-04	120V, 1Ø, 3W CIRCUIT	CONTROL PANEL HW-HRCP-5	ARC AS SHOWN ON DRAWINGS.
0	P-RCPT-1	-	3/4 IN	ARC	100	2-1/4C+G	1	2	10 AWG CU	600 V	TH#N	10 AWG CU	600 V	TH#N	-	-	-	-	-	MCC-18 PANEL HW1	POWER RECEPTACLES	E-04	120V, 1Ø, 3W CIRCUIT	CONTROL PANEL HW-HRCP-5	ARC AS SHOWN ON DRAWINGS.
0	L-SCRB-1	-	1 IN	ARCPVC	270	2-1/4C+G	1	2	10 AWG CU	600 V	TH#N	10 AWG CU	600 V	TH#N	-	-	-	-	-	MCC-18 PANEL HW1	LIGHT POLE TYPE P	E-04	120V, 1Ø, 3W CIRCUIT	LIGHT POLE TYPE P	ARC OR P.V.C AS SHOWN ON DRAWINGS.
0	T-MAU-3	-	3/4 IN	ARC	70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	MAU-3	MAU-3 TEMPERATURE SENSOR	E-03	EMPTY CONDUIT WITH PULL STRING	MAU-3 THERMOSTAT	ARC SHOWN ON DRAWINGS. MECHANICAL TO PROVIDE SENSOR CONTROL WIRING.
0	T-MAU-4	-	3/4 IN	ARC	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	MAU-4	MAU-4 TEMPERATURE SENSOR	E-03	EMPTY CONDUIT WITH PULL STRING	MAU-4 THERMOSTAT	ARC SHOWN ON DRAWINGS. MECHANICAL TO PROVIDE SENSOR CONTROL WIRING.
0	T-MAU-5	-	3/4 IN	ARC	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	MAU-5	MAU-5 TEMPERATURE SENSOR	E-03	EMPTY CONDUIT WITH PULL STRING	MAU-5 THERMOSTAT	ARC SHOWN ON DRAWINGS. MECHANICAL TO PROVIDE SENSOR CONTROL WIRING.

REV.	CONDUIT OR CABLE NUMBER	SERVICE	SIGNAL TYPE	INSTRUMENTATION/CONTROL																	REMARKS
				CABLE			CONDUCTORS			CONDUIT			RUN		WIRING DIAGRAM DWG.		PLAN DRAWINGS				
				SIZE	TYPE	APPROX. LENGTH	DESCRIPTION	INSUL.	VOLTS	SIZE	TYPE	APPROX. LENGTH	FROM	TO	FROM	TO	FROM	TO			
0	C-SCRB-1	INSTRUMENTATION	ETHERNET	4 PAIR-#23	CAT#6	280	SOLID COPPER	FEP	-	1-1/4 IN	ARCPVC	260	CONTROL PANEL	EXISTING DCU-7	E-08	E-09	E-04	E-06	ARC OR P.V.C AS SHOWN ON DRAWINGS.		
0	SP-SCRB-1	SPARE	-	-	-	-	-	-	-	1-1/4 IN	ARCPVC	260	CONTROL PANEL	EXISTING DCU-7	E-08	E-09	E-04	E-06	ARC OR P.V.C AS SHOWN ON DRAWINGS.		
0	C-A-3	STROBE ALARM SIGNAL	24VDC	1-1PR#16	600V INSTRUMENT CABLE	110	SHLD FAIR W/O A. SHIELD	PVC	600V	3/4 IN	ARC	100	CONTROL PANEL HW-HRCP-3	ALARM STROBEA-3	E-08	E-09	E-04	E-06	ARC AS SHOWN ON DRAWINGS.		
0	C-A-4	STROBE ALARM SIGNAL	24VDC	1-1PR#16	600V INSTRUMENT CABLE	70	SHLD FAIR W/O A. SHIELD	PVC	600V	3/4 IN	ARC	60	CONTROL PANEL HW-HRCP-4	ALARM STROBEA-4	E-08	E-09	E-04	E-06	ARC AS SHOWN ON DRAWINGS.		
0	C-A-5	STROBE ALARM SIGNAL	24VDC	1-1PR#16	600V INSTRUMENT CABLE	70	SHLD FAIR W/O A. SHIELD	PVC	600V	3/4 IN	ARC	60	CONTROL PANEL HW-HRCP-5	ALARM STROBEA-5	E-08	E-09	E-04	E-06	ARC AS SHOWN ON DRAWINGS.		
0	C-RIT-3A	GIT/HIT RELAY ALARM SIGNAL	24VDC	1-1PR#16	600V INSTRUMENT CABLE	120	SHLD FAIR W/O A. SHIELD	PVC	600V	3/4 IN	ARC	110	GIT/HIT-3A	CONTROL PANEL HW-HRCP-3	E-08	E-09	E-04	E-06	ARC AS SHOWN ON DRAWINGS.		
0	C-RIT-3B	GIT/HIT RELAY ALARM SIGNAL	24VDC	1-1PR#16	600V INSTRUMENT CABLE	80	SHLD FAIR W/O A. SHIELD	PVC	600V	3/4 IN	ARC	70	GIT/HIT-3B	CONTROL PANEL HW-HRCP-3	E-08	E-09	E-04	E-06	ARC AS SHOWN ON DRAWINGS.		
0	C-RIT-3C	GIT/HIT RELAY ALARM SIGNAL	24VDC	1-1PR#16	600V INSTRUMENT CABLE	60	SHLD FAIR W/O A. SHIELD	PVC	600V	3/4 IN	ARC	50	GIT/HIT-3C	CONTROL PANEL HW-HRCP-3	E-08	E-09	E-04	E-06	ARC AS SHOWN ON DRAWINGS.		
0	C-RIT-3D	GIT/HIT RELAY ALARM SIGNAL	24VDC	1-1PR#16	600V INSTRUMENT CABLE	40	SHLD FAIR W/O A. SHIELD	PVC	600V	3/4 IN	ARC	30	GIT/HIT-3D	CONTROL PANEL HW-HRCP-3	E-08	E-09	E-04	E-06	ARC AS SHOWN ON DRAWINGS.		
0	C-RIT-4A	GIT/HIT RELAY ALARM SIGNAL	24VDC	1-1PR#16	600V INSTRUMENT CABLE	77	SHLD FAIR W/O A. SHIELD	PVC	600V	3/4 IN	ARC	67	GIT/HIT-4A	CONTROL PANEL HW-HRCP-4	E-08	E-09	E-04	E-06	ARC AS SHOWN ON DRAWINGS.		
0	C-RIT-4B	GIT/HIT RELAY ALARM SIGNAL	24VDC	1-1PR#16	600V INSTRUMENT CABLE	50	SHLD FAIR W/O A. SHIELD	PVC	600V	3/4 IN	ARC	40	GIT/HIT-4B	CONTROL PANEL HW-HRCP-4	E-08	E-09	E-04	E-06	ARC AS SHOWN ON DRAWINGS.		
0	C-RIT-5	GIT/HIT RELAY ALARM SIGNAL	24VDC	1-1PR#16	600V INSTRUMENT CABLE	35	SHLD FAIR W/O A. SHIELD	PVC	600V	3/4 IN	ARC	35	GIT/HIT-5	CONTROL PANEL HW-HRCP-5	E-08	E-09	E-04	E-06	ARC AS SHOWN ON DRAWINGS.		
0	C-GIT-4A	GIT/HIT POWER AND ANALOG SIGNALS	24VDC	3-1PR#16	600V INSTRUMENT CABLE	34	SHLD FAIR W/O A. SHIELD	PVC	600V	3/4 IN	ARC	24	EXISTING DCU-7	GIT/HIT-4A	E-08	E-09	E-04	E-06	ARC AS SHOWN ON DRAWINGS.		
0	C-GIT-4B	GIT/HIT POWER AND ANALOG SIGNALS	24VDC	3-1PR#16	600V INSTRUMENT CABLE	50	SHLD FAIR W/O A. SHIELD	PVC	600V	3/4 IN	ARC	40	EXISTING DCU-7	GIT/HIT-4B	E-08	E-09	E-04	E-06	ARC AS SHOWN ON DRAWINGS.		
0	C-MAU-3	ETHERNET	INSTRUMENTATION BA Cnet	4 PAIR-#23	CAT#6	60	SOLID COPPER	FEP	-	3/4 IN	ARC	50	HW-MAU-3	CONTROL PANEL HW-HRCP-3	E-08	E-09	E-04	E-06	ARC AS SHOWN ON DRAWINGS.		
0	C-MAU-4	ETHERNET	INSTRUMENTATION BA Cnet	4 PAIR-#23	CAT#6	50	SOLID COPPER	FEP	-	3/4 IN	ARC	40	HW-MAU-4	CONTROL PANEL HW-HRCP-4	E-08	E-09	E-04	E-06	ARC AS SHOWN ON DRAWINGS.		
0	C-MAU-5	ETHERNET	INSTRUMENTATION BA Cnet	4 PAIR-#23	CAT#6	30	SOLID COPPER	FEP	-	3/4 IN	ARC	20	HW-MAU-5	CONTROL PANEL HW-HRCP-5	E-08	E-09	E-04	E-06	ARC AS SHOWN ON DRAWINGS.		
0	C-FD-3R	RETURN FLOW SWITCH DIGITAL SIGNAL	24VDC	1-1PR#16	600V INSTRUMENT CABLE	70	NON-SHIELDED	PVC	600V	3/4 IN	ARC	60	HW-MAU-3 RETURN FLOW SWITCH	CONTROL PANEL HW-HRCP-3	E-08	E-09	E-04	E-06	ARC AS SHOWN ON DRAWINGS.		
0	C-FD-3S	SUPPLY FLOW SWITCH DIGITAL SIGNAL	24VDC	1-1PR#16	600V INSTRUMENT CABLE	40	NON-SHIELDED	PVC	600V	3/4 IN	ARC	30	HW-MAU-3 SUPPLY FLOW SWITCH	CONTROL PANEL HW-HRCP-3	E-08	E-09	E-04	E-06	ARC AS SHOWN ON DRAWINGS.		
0	C-FD-4R	RETURN FLOW SWITCH DIGITAL SIGNAL	24VDC	1-1PR#16	600V INSTRUMENT CABLE	70	NON-SHIELDED	PVC	600V	3/4 IN	ARC	60	HW-MAU-4 RETURN FLOW SWITCH	CONTROL PANEL HW-HRCP-4	E-08	E-09	E-04	E-06	ARC AS SHOWN ON DRAWINGS.		
0	C-FD-4S	SUPPLY FLOW SWITCH DIGITAL SIGNAL	24VDC	1-1PR#16	600V INSTRUMENT CABLE	75	NON-SHIELDED	PVC	600V	3/4 IN	ARC	65	HW-MAU-4 SUPPLY FLOW SWITCH	CONTROL PANEL HW-HRCP-4	E-08	E-09	E-04	E-06	ARC AS SHOWN ON DRAWINGS.		
0	C-FD-5R	RETURN FLOW SWITCH DIGITAL SIGNAL	24VDC	1-1PR#16	600V INSTRUMENT CABLE	50	NON-SHIELDED	PVC	600V	3/4 IN	ARC	40	HW-MAU-4 RETURN FLOW SWITCH	CONTROL PANEL HW-HRCP-5	E-08	E-09	E-04	E-06	ARC AS SHOWN ON DRAWINGS.		
0	C-FD-5S	SUPPLY FLOW SWITCH DIGITAL SIGNAL	24VDC	1-1PR#16	600V INSTRUMENT CABLE	40	NON-SHIELDED	PVC	600V	3/4 IN	ARC	30	HW-MAU-4 SUPPLY FLOW SWITCH	CONTROL PANEL HW-HRCP-5	E-08	E-09	E-04	E-06	ARC AS SHOWN ON DRAWINGS.		
0	C-SD-3R	SMOKE DETECTOR DIGITAL SIGNAL AND UNIT SHUTDOWN	24VDC	2-1PR#16	600V INSTRUMENT CABLE	40	NON-SHIELDED	PVC	600V	3/4 IN	ARC	30	HW-MAU-3 RETURN SMOKE DETECTOR	HW-MAU-3	E-08	E-09	E-04	E-06	ARC AS SHOWN ON DRAWINGS.		
0	C-SD-3S	SMOKE DETECTOR DIGITAL SIGNAL AND UNIT SHUTDOWN	24VDC	2-1PR#16	600V INSTRUMENT CABLE	50	NON-SHIELDED	PVC	600V	3/4 IN	ARC	40	HW-MAU-3 SUPPLY SMOKE DETECTOR	HW-MAU-3	E-08	E-09	E-04	E-06	ARC AS SHOWN ON DRAWINGS.		
0	C-SD-4R	SMOKE DETECTOR DIGITAL SIGNAL AND UNIT SHUTDOWN	24VDC	2-1PR#16	600V INSTRUMENT CABLE	30	NON-SHIELDED	PVC	600V	3/4 IN	ARC	20	HW-MAU-4 RETURN SMOKE DETECTOR	HW-MAU-4	E-08	E-09	E-04	E-06	ARC AS SHOWN ON DRAWINGS.		
0	C-SD-4S	SMOKE DETECTOR DIGITAL SIGNAL AND UNIT SHUTDOWN	24VDC	2-1PR#16	600V INSTRUMENT CABLE	70	NON-SHIELDED	PVC	600V	3/4 IN	ARC	60	HW-MAU-4 SUPPLY SMOKE DETECTOR	HW-MAU-4	E-08	E-09	E-04	E-06	ARC AS SHOWN ON DRAWINGS.		
0	C-SD-5R	SMOKE DETECTOR DIGITAL SIGNAL AND UNIT SHUTDOWN	24VDC	2-1PR#16	600V INSTRUMENT CABLE	50	NON-SHIELDED	PVC	600V	3/4 IN	ARC	40	HW-MAU-5 RETURN SMOKE DETECTOR	HW-MAU-5	E-08	E-09	E-04	E-06	ARC AS SHOWN ON DRAWINGS.		
0	C-SD-5S	SMOKE DETECTOR DIGITAL SIGNAL AND UNIT SHUTDOWN	24VDC	2-1PR#16	600V INSTRUMENT CABLE	40	NON-SHIELDED	PVC	600V	3/4 IN	ARC	30	HW-MAU-5 SUPPLY SMOKE DETECTOR	HW-MAU-5	E-08	E-09	E-04	E-06	ARC AS SHOWN ON DRAWINGS.		
0	C-HRCP-3	ETHERNET	INSTRUMENTATION BA Cnet	4 PAIR-#23	CAT#6	100	SOLID COPPER	FEP	-	3/4 IN	ARC	100	CONTROL PANEL HW-HRCP-3	EXISTING DCU-9	E-08	E-09	E-04	E-06	ARC AS SHOWN ON DRAWINGS.		
0	C-HRCP-4	ETHERNET	INSTRUMENTATION BA Cnet	4 PAIR-#23	CAT#6	30	SOLID COPPER	FEP	-	3/4 IN	ARC	30	CONTROL PANEL HW-HRCP-4	EXISTING DCU-9	E-08	E-09	E-04	E-06	ARC AS SHOWN ON DRAWINGS.		
0	C-HRCP-5	ETHERNET	INSTRUMENTATION BA Cnet	4 PAIR-#23	CAT#6	50	SOLID COPPER	FEP	-	3/4 IN	ARC	50	CONTROL PANEL HW-HRCP-5	EXISTING DCU-9	E-08	E-09	E-04	E-06	ARC AS SHOWN ON DRAWINGS.		
0	C-EYE-1	EMERGENCY EYE WASH FLOW SWITCH	120VAC	1-2/C#14 TC	600V INSTRUMENT CABLE	260	NON-SHIELDED	PVC	600 V	1 IN	ARCPVC	250	EXISTING DCU-7	EMERGENCY EYE WASH AND SHOWER	E-08	E-09	E-04	E-06	ARC OR P.V.C AS SHOWN ON DRAWINGS.		

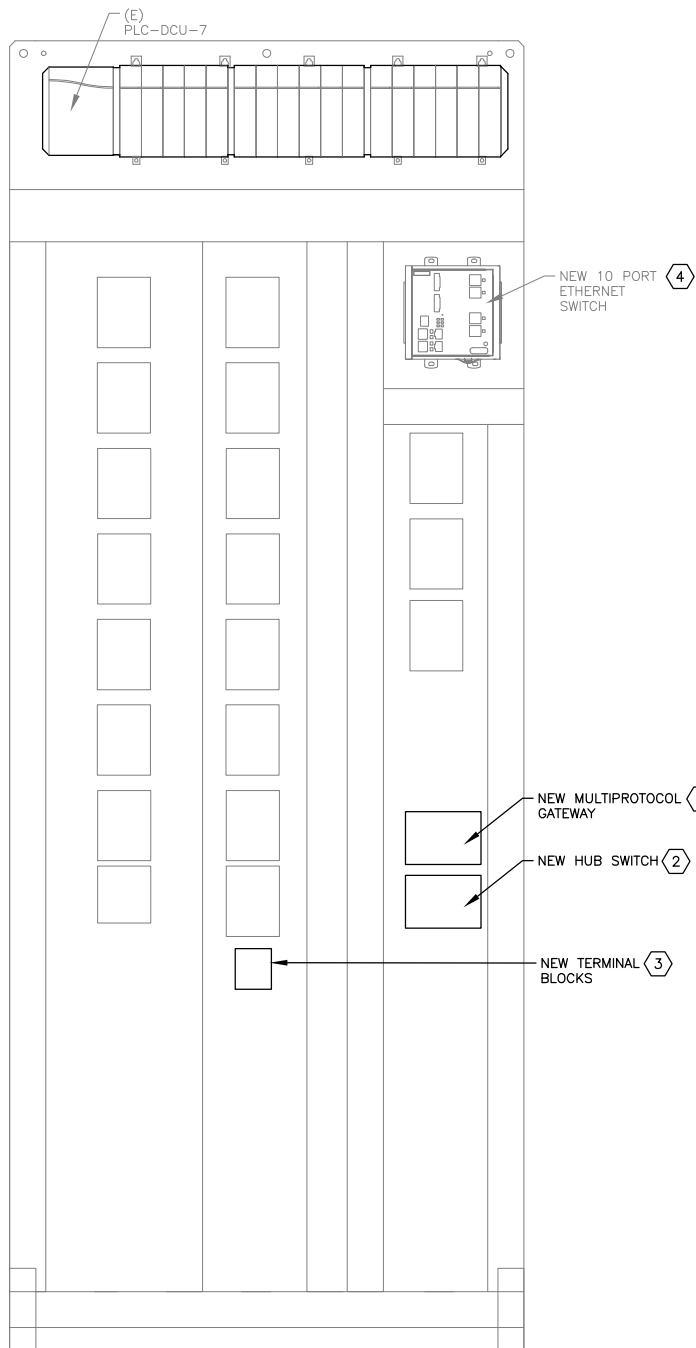
PROJECT ENGINEER:	JLC
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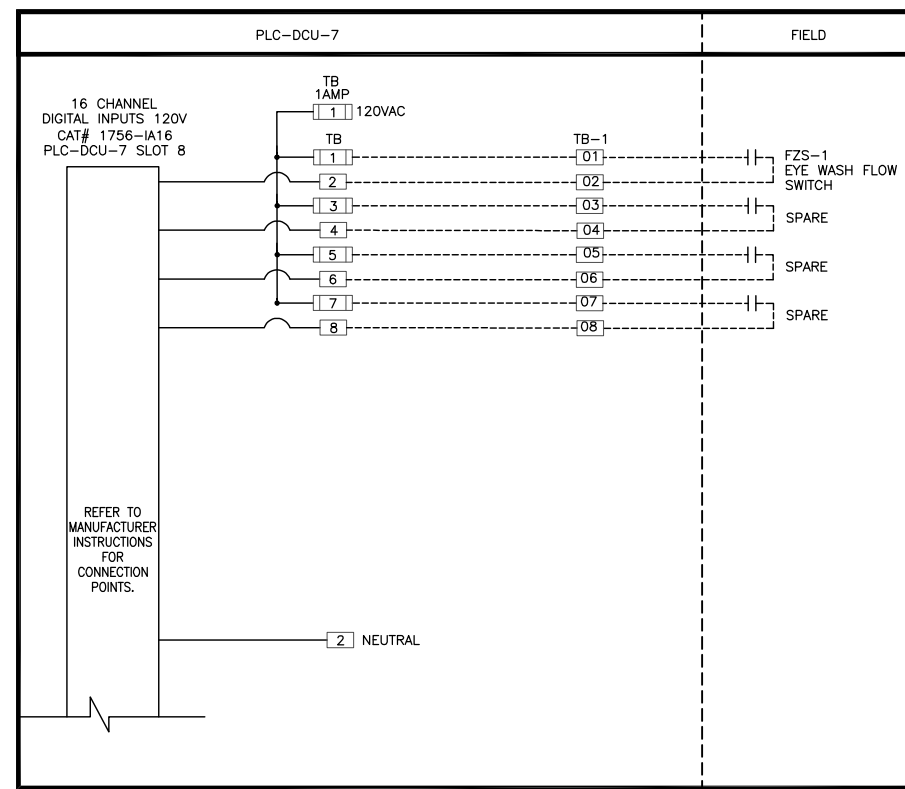
1 PLC-DCU-7 SLOT 14 WIRING DIAGRAM  
E-08

**WIRING LEGEND**

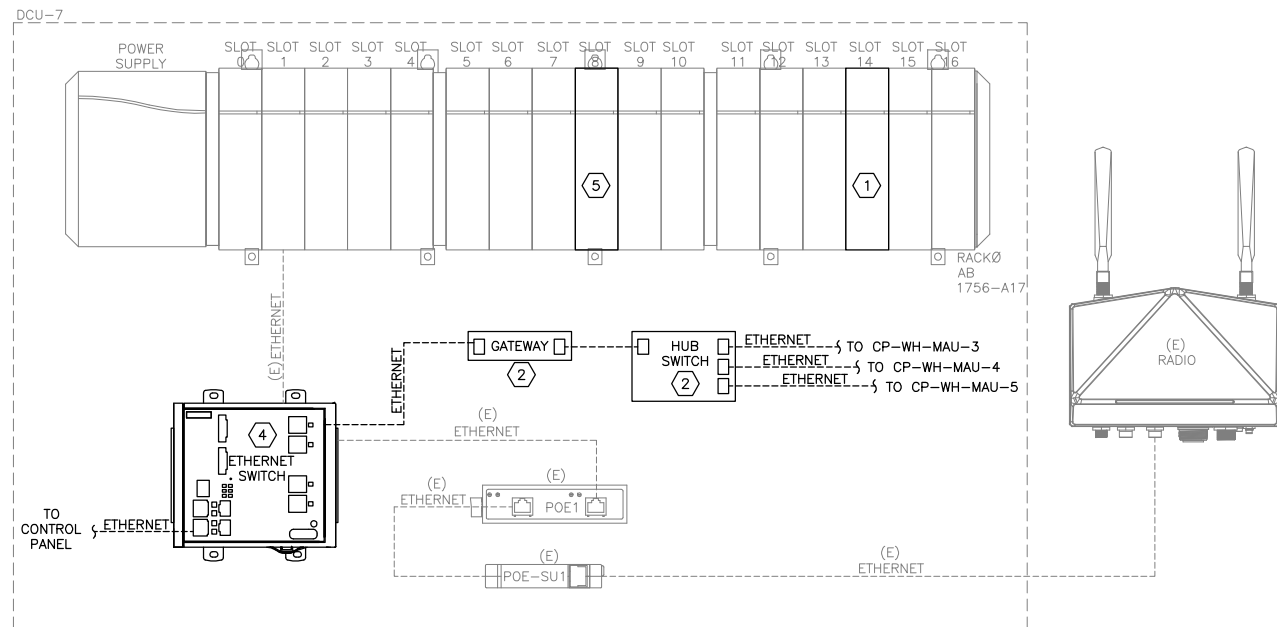
- CABLE SHIELD
- INSULATED SHIELD
- TERMINATE SHIELD PER MANUFACTURE'S RECOMMENDATIONS
- ① CB PROTECTED TERM. BLOCK, 1A FUSE
- ② CB PROTECTED TERM. BLOCK, 2A FUSE
- SURGE PROTECTOR



2 DCU-7 ELEVATION DETAIL  
E-08



3 PLC-DCU-7 SLOT 8 WIRING DIAGRAM  
E-08



4 COMMUNICATION WIRING DIAGRAM  
E-08

**GENERAL NOTES**

1. REFER TO ELECTRICAL LEGEND AND ELECTRICAL GENERAL NOTES FOR ADDITIONAL INFORMATION.
2. INSTALL SURGE SUPPRESSOR MODULES ON ALL TERMINAL BLOCKS CONNECTED TO FIELD DEVICES, INCLUDING 4-20MA LOOP INSTRUMENTS
3. INSTRUMENTATION/INTEGRATOR CONTRACTOR SHALL REQUEST FROM EPW CAD FILES AND UPDATE EXISTING SCADA PLANT DRAWINGS WITH NEW CONTROL SYSTEM AND RETURN TO EPW.

**KEYED NOTES:**

- ① PROVIDE NEW ALLEN BRADLEY ANALOG INPUT MODULE, 16 CHANNELS #1756-IF16.
- ② PROVIDE ALLEN BRADLEY MULTIPROTOCOL GATEWAY TO INTERFACE MAU-3, MAU-4 AND MAU-5 BacNET COMMUNICATION PROTOCOL WITH EXISTING ETHERNET/IP PROTOCOL AND HUB SWITCH.
- ③ PROVIDE PHOENIX CONTACT TERMINAL BLOCK END CLAMP AND GROUP MARKER #0800886 AND 1004348.
- ④ REPLACE EXISTING 6 PORT ETHERNET SWITCH WITH NEW ALLEN BRADLEY STRATIX 8000 10 PORT SWITCH.
- ⑤ PROVIDE NEW ALLEN BRADLEY CONTROLLOGIX DIGITAL INPUT MODULE, 16 CHANNELS #1756-IA16

REV	ISSUED FOR	DATE	BY

PROJECT ENGINEER:	JLC
DESIGNED BY:	JLC
DRAWN BY:	CAD
CHECKED BY:	JLC
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	



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**Bath ENGINEERING**  
 TEXAS FIRM REGISTRATION NO. 829  
 4110 RIO BRAVO SUITE 102  
 EL PASO, TX 79902  
 TEL: 915-313-7200



HASKELL R. STREET WASTEWATER TREATMENT PLANT ODOR CONTROL - HEADWORKS

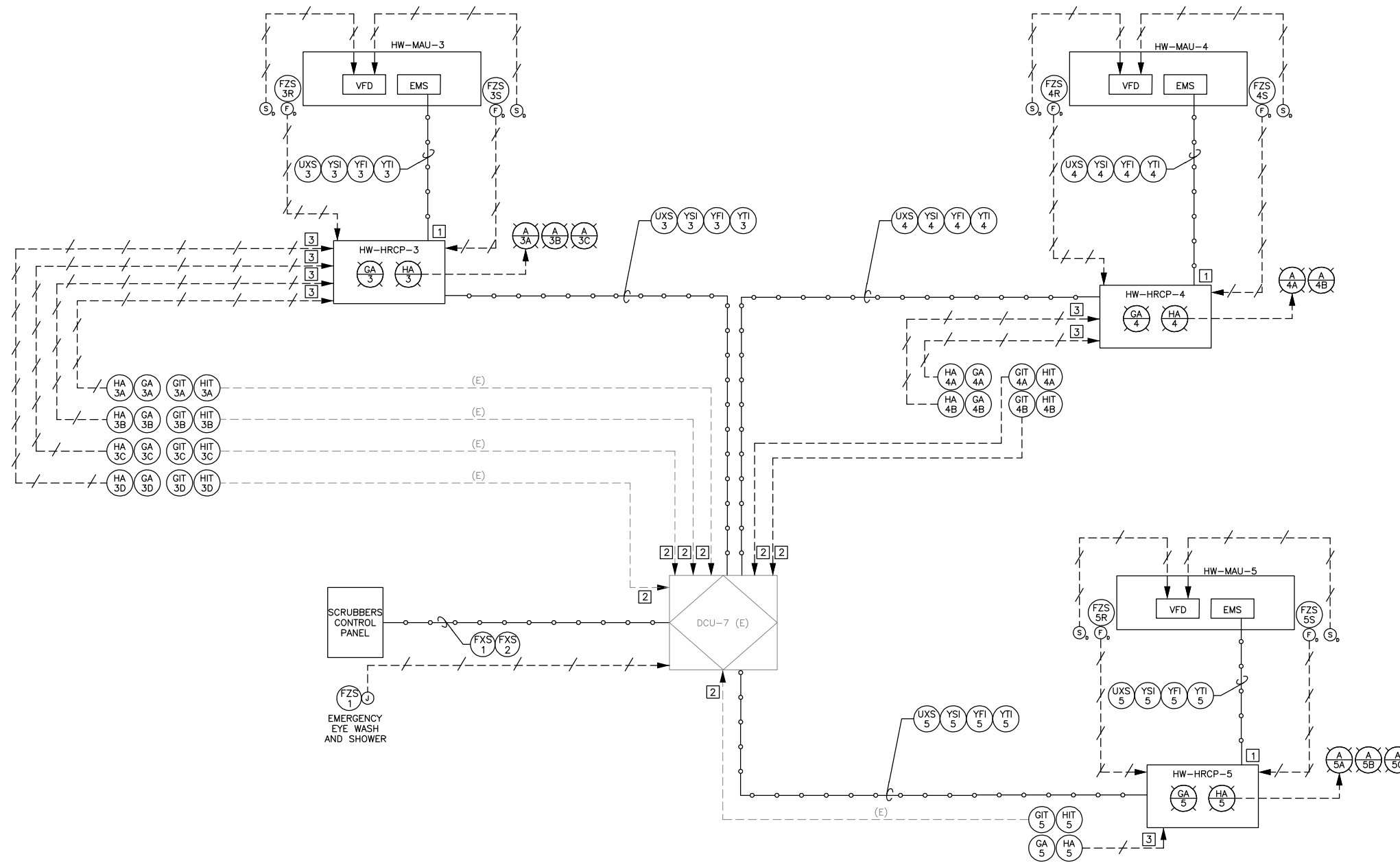
ELECTRICAL  
 TERMINAL BLOCK WIRING DIAGRAMS AND DETAILS

DATE:	MARCH 2018
HAZEN NO.:	60701-011
CONTRACT NO.:	01
DRAWING NUMBER:	E-08

**GENERAL NOTES**

1. REFER TO ELECTRICAL LEGEND AND ELECTRICAL GENERAL NOTES FOR ADDITIONAL INFORMATION.

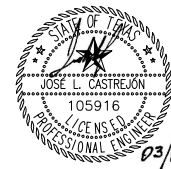
- 1 BACnet NETWORK DATA LINK WITH PARAMETERS AS SPECIFIED.
- 2 4-20mA H2S LEVEL  
4-20mA LEL GAS LEVEL  
24 VDC POWER
- 3 H2S LEVEL ALARM  
LEL LEVEL ALARM



**PROCESS AND INSTRUMENTATION DIAGRAM**

NO SCALE

PROJECT ENGINEER:	JLC
DESIGNED BY:	JLC
DRAWN BY:	CAD
CHECKED BY:	JLC
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	
REV	ISSUED FOR
	DATE
	BY



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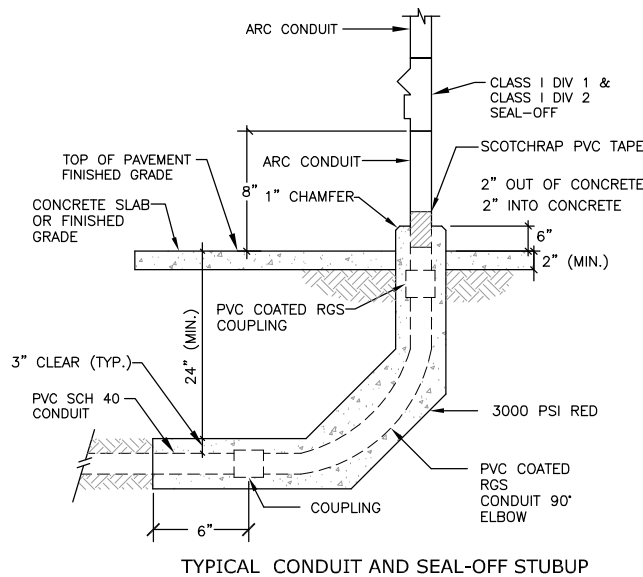
**Bath ENGINEERING**  
 TEXAS FIRM REGISTRATION NO. 829  
 4110 RIO BRAVO SUITE 102  
 EL PASO, TX 79902  
 TEL: 915-313-7200



HASKELL R. STREET WASTEWATER TREATMENT PLANT ODOR CONTROL - HEADWORKS

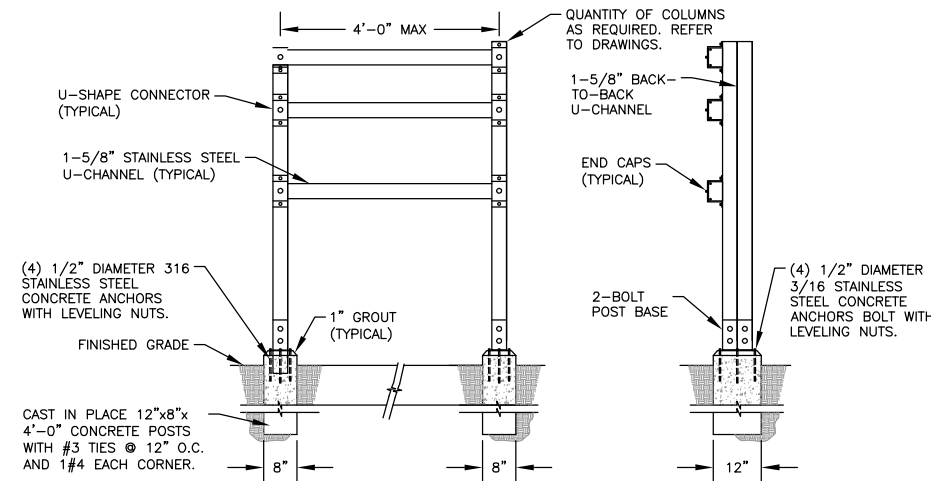
**ELECTRICAL**  
**PROCESS AND INSTRUMENTATION DIAGRAM**

DATE:	MARCH 2018
HAZEN NO.:	60701-011
CONTRACT NO.:	01
DRAWING NUMBER:	E-09



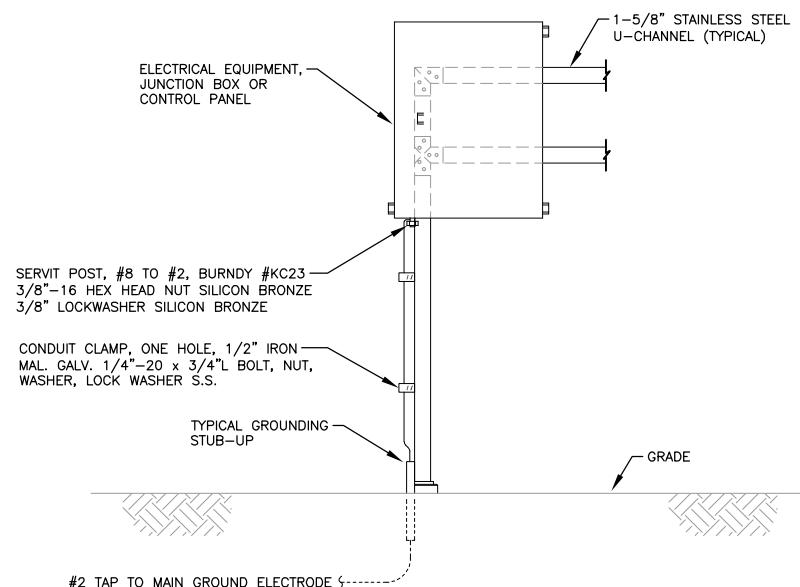
TYPICAL CONDUIT AND SEAL-OFF STUBUP

DETAIL	1
NO SCALE	E-10



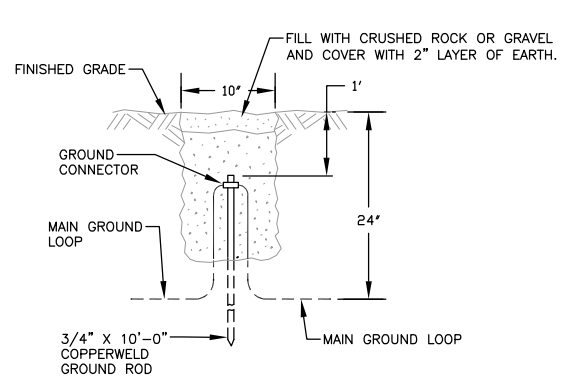
TYPICAL EQUIPMENT RACK DETAIL

DETAIL	2
NO SCALE	E-10



ENCLOSURE OR PANEL GROUNDING INSTALLATION DETAIL

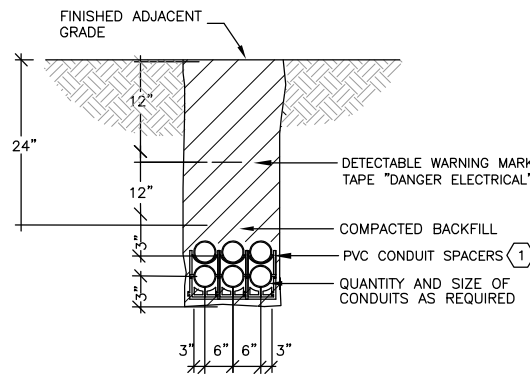
DETAIL	3
NO SCALE	E-10



GROUND ELECTRODE

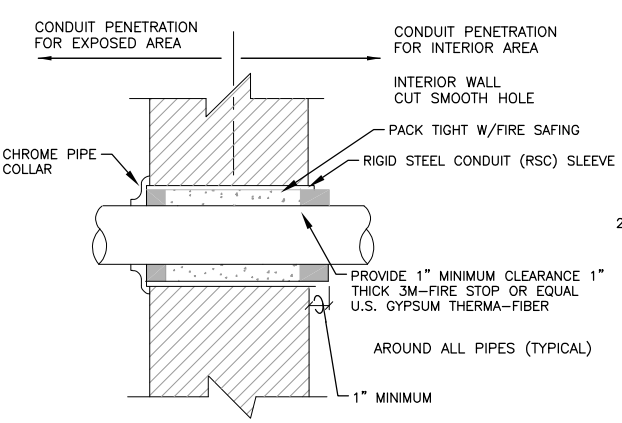
DETAIL	4
NO SCALE	E-10

SHOWN ON DRAWING AS ①



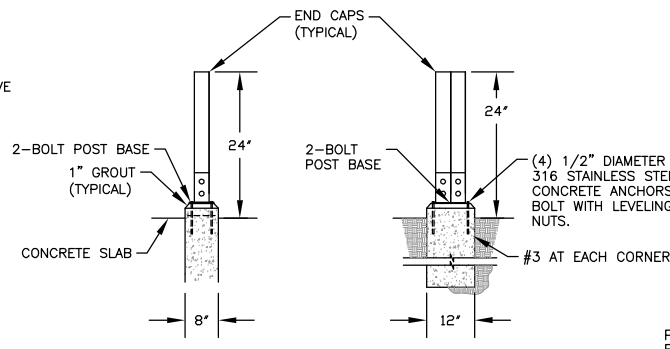
TYPICAL CONDUIT DUCT BANK DETAIL

DETAIL	5
NO SCALE	E-10



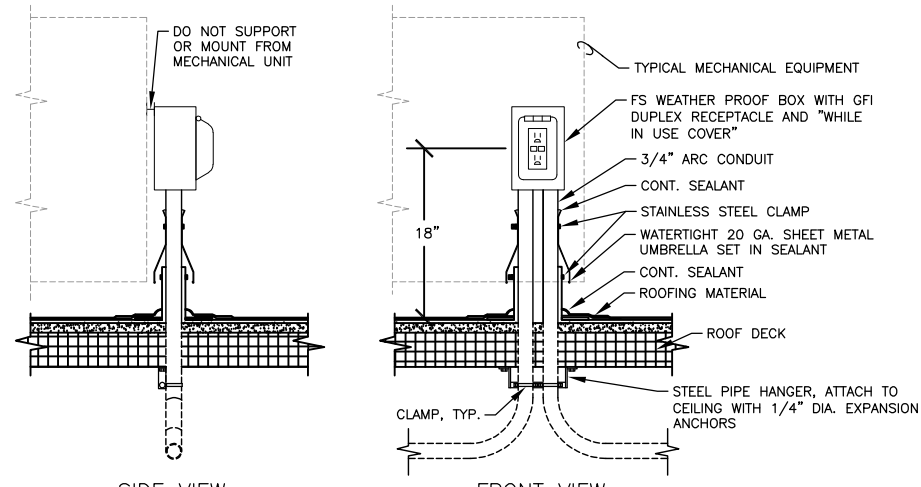
WALL PENETRATION DETAIL

DETAIL	6
NO SCALE	E-10



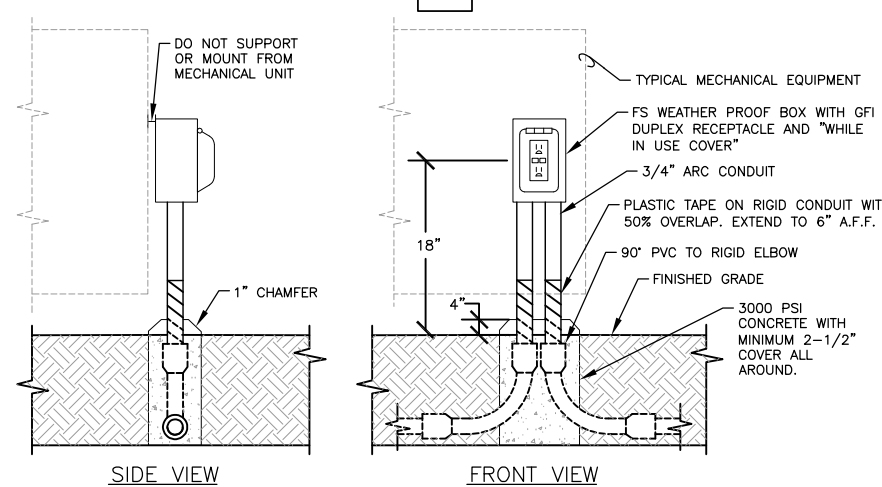
UNISTRUT STAND DETAIL

DETAIL	7
NO SCALE	E-10



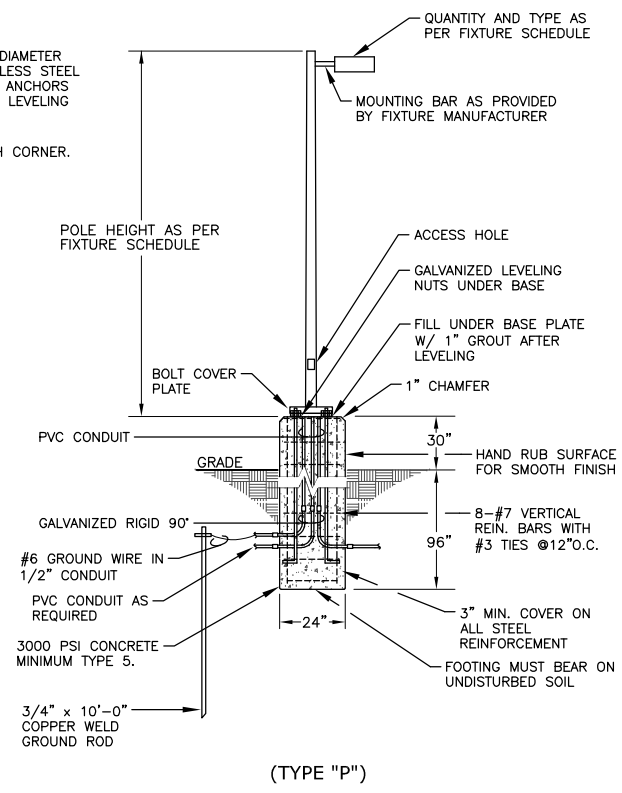
ROOF RECEPTACLE INSTALLATION DETAIL

DETAIL	8
NO SCALE	E-10



GROUND RECEPTACLE INSTALLATION DETAIL

DETAIL	9
NO SCALE	E-10

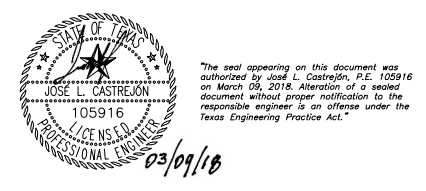


TYPICAL STEEL POLE MOUNTING DETAIL

DETAIL	10
NO SCALE	E-10

REV	ISSUED FOR	DATE	BY

PROJECT ENGINEER:	JLC
DESIGNED BY:	JLC
DRAWN BY:	CAD
CHECKED BY:	JLC
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	0 1/2" 1"



**Bath ENGINEERING**  
TEXAS FIRM REGISTRATION NO. 829  
4110 RIO BRAVO SUITE 102  
EL PASO, TX 79902  
TEL: 915-313-7200

**el paso WATER**  
HASKELL R. STREET WASTEWATER TREATMENT PLANT ODOR CONTROL - HEADWORKS

ELECTRICAL  
DETAILS

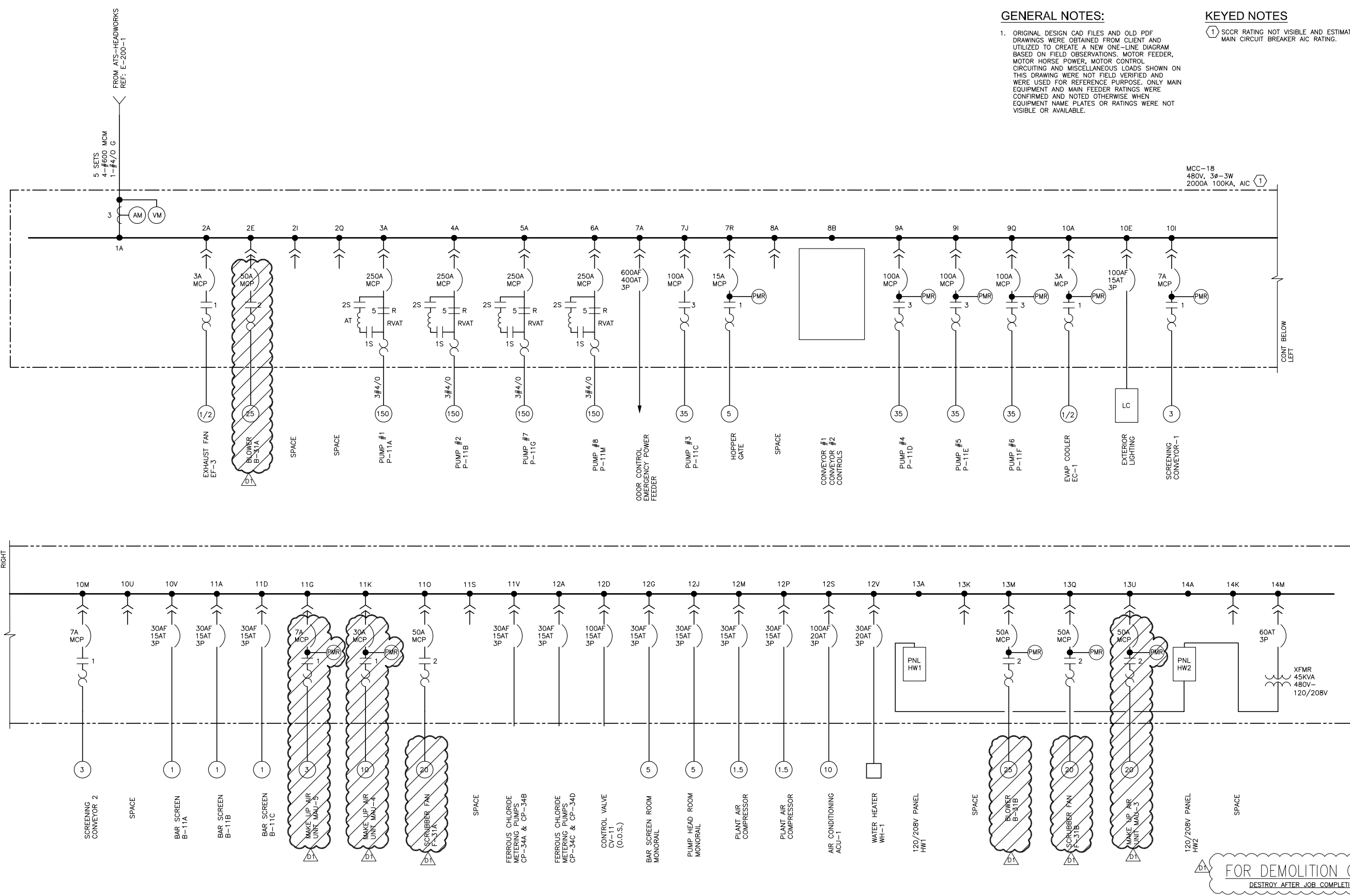
DATE:	MARCH 2018
HAZEN NO.:	60701-011
CONTRACT NO.:	01
DRAWING NUMBER:	E-10

**GENERAL NOTES:**

1. ORIGINAL DESIGN CAD FILES AND OLD PDF DRAWINGS WERE OBTAINED FROM CLIENT AND UTILIZED TO CREATE A NEW ONE-LINE DIAGRAM BASED ON FIELD OBSERVATIONS. MOTOR FEEDER, MOTOR HORSE POWER, MOTOR CONTROL CIRCUITING AND MISCELLANEOUS LOADS SHOWN ON THIS DRAWING WERE NOT FIELD VERIFIED AND WERE USED FOR REFERENCE PURPOSE. ONLY MAIN EQUIPMENT AND MAIN FEEDER RATINGS WERE CONFIRMED AND NOTED OTHERWISE WHEN EQUIPMENT NAME PLATES OR RATINGS WERE NOT VISIBLE OR AVAILABLE.

**KEYED NOTES**

1. SCRR RATING NOT VISIBLE AND ESTIMATED PER MAIN CIRCUIT BREAKER AIC RATING.



**FOR DEMOLITION ONLY**  
DESTROY AFTER JOB COMPLETION

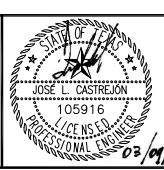
Mar 09, 2018 - 1:09pm  
 J:\304 - El Paso Water - Haskell WWTP - Odor Control\Sheets\E-218D MCC-18 ONE LINE DIAGRAM.dwg  
 rjms

REV.	DATE	BY	DESCRIPTION
D1	3/2/18	JLC	ISSUED FOR DEMOLITION PER ODOR CONTROL PROJECT UPGRADES

DESIGNED  
**JLC**  
DRAWN  
**CAD**  
CHECKED  
**JLC**  
DATE  
**09/15/17**

RECORD DRAWING - SEPTEMBER 2017

THIS RECORD DRAWING IS A COMPILED COPY OF ENGINEERING DRAWING FOR THIS PROJECT AND INFORMATION GATHERED FROM THE FIELD BY BATH ENGINEERING. SOME OF THE INFORMATION SHOWN ON THIS RECORD DRAWING THAT WAS PROVIDED BY THE OWNER OR THE DESIGN ENGINEER CANNOT BE VERIFIED FOR ACCURACY OR COMPLETENESS IT WAS ONLY BASED ON EXISTING CONDITIONS AND FIELD OBSERVATIONS. THE ORIGINAL OF THIS RECORD DRAWING WAS PREPARED UNDER THE DIRECT SUPERVISION OF JOSE LUIS CASTREJON, P.E.



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HASKELL STREET WWTP  
EL PASO, TX  
MCC-18 ONE LINE DIAGRAM  
HEADWORKS BUILDING

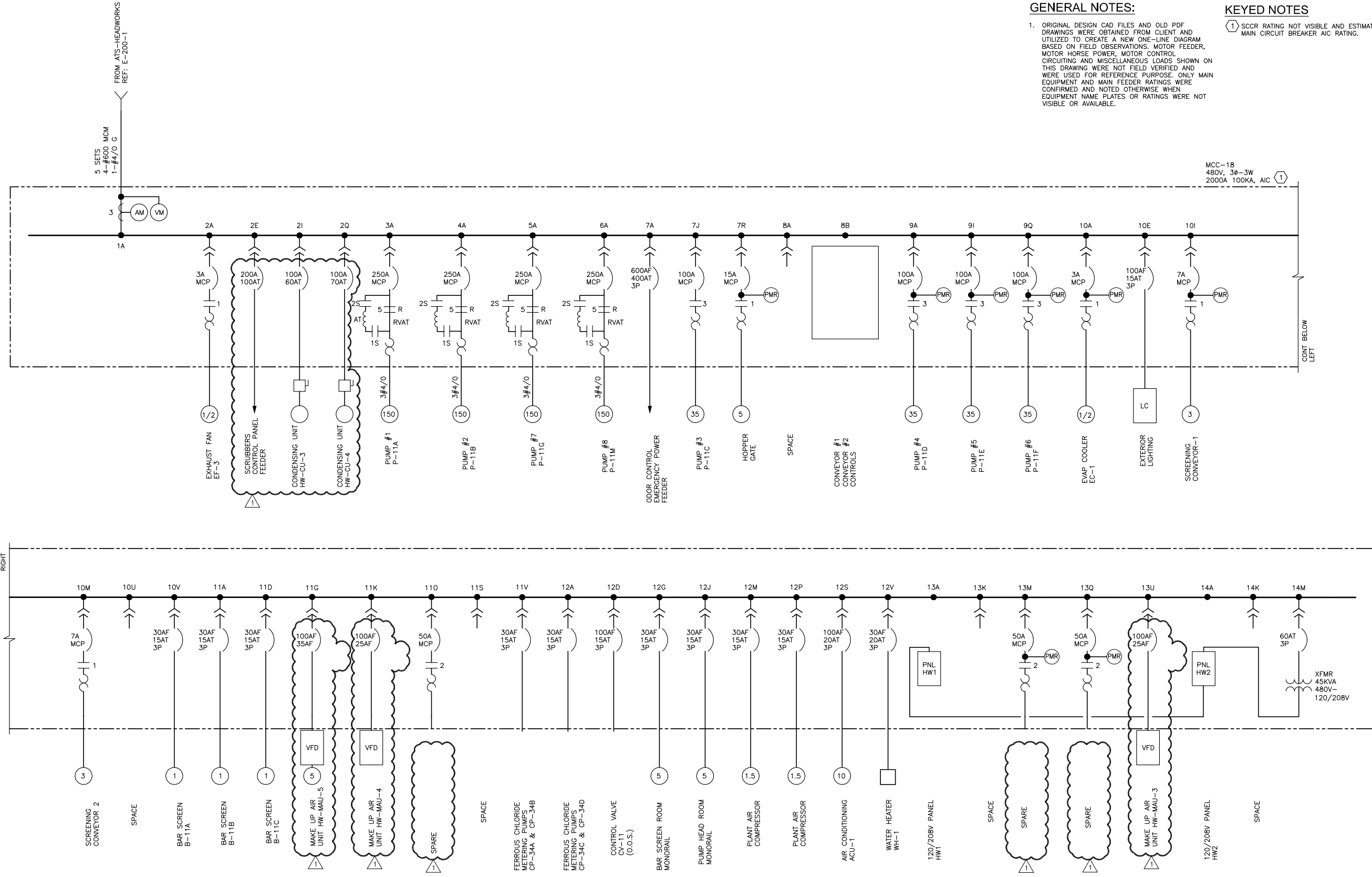
JOB NO.  
3087  
DRAWING NO.  
E-218D  
SEQUENCE NO.  
19 OF 26

**GENERAL NOTES:**

- 1. ORIGINAL DESIGN CAD FILES AND OLD PDF DRAWINGS WERE OBTAINED FROM CLIENT AND UTILIZED TO CREATE A NEW ONE-LINE DIAGRAM BASED ON FIELD OBSERVATIONS, MOTOR FEEDER, MOTOR HORSE POWER, MOTOR CONTROL CIRCUITING AND MISCELLANEOUS LOADS SHOWN ON THIS DRAWING WERE NOT FIELD VERIFIED AND WERE USED FOR REFERENCE PURPOSE. ONLY MAIN EQUIPMENT AND MAIN FEEDER RATINGS WERE CONFIRMED AND NOTED OTHERWISE WHEN EQUIPMENT NAME PLATES OR RATINGS WERE NOT VISIBLE OR AVAILABLE.

**KEYED NOTES**

- ① SCCR RATING NOT VISIBLE AND ESTIMATED PER MAIN CIRCUIT BREAKER AIC RATING.



Mar 09, 2018 11:00am r100  
 J:\3044\_EPR\Water\_Haskell\_WWTP\_Odor\_Control\CAD\3044\_EPR\Water\_Haskell\_WWTP\_Odor\_Control\Sheets\E-218\_MCC-18 ONE LINE DIAGRAM.dwg  
 3/2/18 JLC REVISED PER ODOR CONTROL PROJECT UPGRADES  
 DESIGNED JLC  
 DRAWN CAD  
 CHECKED JLC  
 DATE 09/15/17  
 RECORD DRAWING - SEPTEMBER 2017  
 THIS RECORD DRAWING IS A COMPILED COPY OF ENGINEERING DRAWING FOR THIS PROJECT AND INFORMATION GATHERED FROM THE FIELD BY BATH ENGINEERING. SOME OF THE INFORMATION SHOWN ON THIS RECORD DRAWING THAT WAS PROVIDED BY THE OWNER OR THE DESIGN ENGINEER CANNOT BE VERIFIED FOR ACCURACY OR COMPLETENESS IT WAS ONLY BASED ON EXISTING CONDITIONS AND FIELD OBSERVATIONS. THE ORIGINAL OF THIS RECORD DRAWING WAS PREPARED UNDER THE DIRECT SUPERVISION OF JOSE LUIS CASTREJON, P.E.  
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 Bath ENGINEERING TEXAS FIRM REGISTRATION NO. 829 4110 FRO BRAVO SUITE 102 EL PASO, TX 79902 TEL: 915-313-7200  
 el paso WATER  
 HASKELL STREET WWTP EL PASO, TX  
 MCC-18 ONE LINE DIAGRAM HEADWORKS BUILDING  
 JOB NO. 3087  
 DRAWING NO. E-218  
 SEQUENCE NO. 20 OF 26

## **ATTACHMENT D – TEMPLATE FORMS FOR AFFIRMATION OF COMPLIANCE**

- Qualification and Financial Disclosure Documentation
- Affidavit of No Legal Proceedings or Judgements
- Affidavit of Ability to Obtain All Necessary Permits, Licenses, and Other Necessary Authorizations to Work in Texas
- Affidavit of No Debarment from Bidding
- Affidavit of No Fraud or Felony Collusion
- Code of Ethics Compliance Form

# Qualification and Financial Disclosure Statement

(Note: Proposer may provide their responses using this form or in a format of their own choosing)

## 1. ORGANIZATION

1.1 How many years has your organization been in business as a Contractor?

1.2 How many years has your organization been in business under its present business name?

1.2.1 Under what other or former names has your organization operated?

1.3 If your organization is a corporation, answer the following:

1.3.1 Date of incorporation: \_\_\_\_\_

1.3.2 State of incorporation: \_\_\_\_\_

1.3.3 President's name: \_\_\_\_\_

1.3.4 Vice-president's name(s): \_\_\_\_\_

1.3.5 Secretary's name: \_\_\_\_\_

1.3.6 Treasurer's name: \_\_\_\_\_

1.4 If your organization is a partnership, answer the following:

1.4.1 Date of organization: \_\_\_\_\_

1.4.2 Type of partnership (if applicable): \_\_\_\_\_

1.4.3 Name(s) of general partner(s): \_\_\_\_\_

1.5 If your organization is an individually owned sole proprietorship, answer the following:

1.5.1 Date of organization: \_\_\_\_\_

1.5.2 Name of owner: \_\_\_\_\_

1.6 If your organization is a Joint Venture, answer the following:

1.6.1 Date of Organization: \_\_\_\_\_

1.6.2 Names of Joint Venture Partner Organizations: \_\_\_\_\_

\_\_\_\_\_



1.6.3 Identify the Managing Partner

of the Joint Venture: \_\_\_\_\_

1.7 If the form of your organization is other than those listed above, describe it and name the principals:

## 2. LICENSING

2.1 List jurisdictions and trade categories in which your organization is legally qualified to do business, and indicate registration or license numbers, if applicable. Indicate name, and license number(s) and expiration dates.

2.2 List jurisdictions in which your organization's partnership or trade name is filed.

## 3. EXPERIENCE

3.1 List the categories of work that your organization normally performs with its own forces.

3.2 Claims and Suits. (If the answer to any of the questions below is yes, please attach details.)

3.2.1 Has your organization ever failed to complete any work awarded to it?

3.2.2 Are there any judgments, claims, arbitration proceedings, or suits pending or outstanding against your organization or its officers?

3.2.3 Has your organization filed any law suits or requested arbitration with regard to construction contracts within the last five years?

3.3 Within the last five years, has any officer or principal of your organization been an officer or principal of another organization when it failed to complete a construction contract? (If the answer is yes, please attach details.)

3.4 On a separate sheet, list major construction projects your organization has in progress, giving the name of project, owner, architect, contract amount, percent complete and scheduled completion date.

3.4.1 State total worth of work in progress and under contract.

## 4. REFERENCES

4.1 Trade References:

4.2 Bank References:

4.3 Surety:

Name and telephone number of Bonding Company: \_\_\_\_\_

Name, telephone, and address of Agent: \_\_\_\_\_

\_\_\_\_\_

**5. FINANCING**

5.1 Financial Statement

5.1.1 Attach the most recent audited financial statement including your organization's latest balance sheet and income statement showing the following items:

- a. Cash Flow Statement
- b. Notes to Financial Statement
- c. Auditor Statement
- d. Comparison Statements, if available

5.1.2 Name and address of firm preparing attached financial statement, and date thereof.

5.1.3 Is the attached financial statement for the identical organization named on page one?

5.1.4 If not, explain the relationship and financial responsibility of the organization whose financial statement is provided (e.g., parent-subsidiary).

5.2 Will the organization whose financial statement is attached act as guarantor of the contract for construction?

**6. SIGNATURE**

6.1 To be executed by a Principal of the firm authorized to certify the foregoing information:

\_\_\_\_\_, being duly sworn, deposes and says that the information provided herein is true and sufficiently complete so as not to be misleading.

6.2 Dated at \_\_\_\_\_ this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

Name of Organization: \_\_\_\_\_

By: \_\_\_\_\_

(Printed Name) \_\_\_\_\_

Title: \_\_\_\_\_

---

## Affidavit of No Legal Proceeding or Judgements

Insert addressee Information

The undersigned hereby certifies that, the undersigned firm has no legal proceeding and judgments or any contingent liability within the past 10 years, that could adversely affect the firm's ability to perform the contractual and financial commitments to the Owner for the above listed project.

Dated: \_\_\_\_\_ By: \_\_\_\_\_  
(Signature of Proposer's Authorized Representative)

By: \_\_\_\_\_  
(Printed Name of Proposer's Authorized Representative)

Title: \_\_\_\_\_  
(Title of Proposer's Authorized Representative)

For: \_\_\_\_\_  
(Proposer's Corporate Identity)

\_\_\_\_\_  
(Notary Public)

State of \_\_\_\_\_

County of \_\_\_\_\_

On this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, before me appeared \_\_\_\_\_, personally known to me to be the person described in and who executed this \_\_\_\_\_ and acknowledged that (she/he) signed the same freely and voluntarily for the uses and purposed therein described.

In witness thereof, I have hereunto set my hand and affixed my official seal the day and year last written above.

\_\_\_\_\_

Notary Public in and for the state of \_\_\_\_\_

(seal)

\_\_\_\_\_

(Printed Name)

# Affidavit of Ability to Obtain All Necessary Permits, Licenses, and Other Necessary Authorizations to Work in Texas

Insert Addressee Information

The undersigned hereby certifies that, the undersigned firm and its affiliates have the ability to obtain all necessary permits, licenses and other necessary authorizations to work in Texas.

Dated: \_\_\_\_\_ By: \_\_\_\_\_  
(Signature of Proposer's Authorized Representative)

By: \_\_\_\_\_  
(Printed Name of Proposer's Authorized Representative)

Title: \_\_\_\_\_  
(Title of Proposer's Authorized Representative)

For: \_\_\_\_\_  
(Proposer's Corporate Identity)

\_\_\_\_\_  
(Notary Public)

State of \_\_\_\_\_

County of \_\_\_\_\_

On this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, before me appeared  
\_\_\_\_\_, personally known to me to be the person described in and who  
executed this \_\_\_\_\_ and acknowledged that (she/he) signed the same freely and  
voluntarily for the uses and purposes therein described.

In witness thereof, I have hereunto set my hand and affixed my official seal the day and year last  
written above.

\_\_\_\_\_

Notary Public in and for the state of \_\_\_\_\_

(seal)

\_\_\_\_\_

(Printed Name)

# Affidavit of No Debarment from Bidding

Insert Addressee Information

The undersigned hereby certifies that, the undersigned firm has not been debarred within the past 10 years, nor under consideration for disbarment on public contracts by the federal government or any state.

Dated: \_\_\_\_\_ By: \_\_\_\_\_

(Signature of Proposer's Authorized Representative)

By: \_\_\_\_\_

(Printed Name of Proposer's Authorized Representative)

Title: \_\_\_\_\_

(Title of Proposer's Authorized Representative)

For: \_\_\_\_\_

(Proposer's Corporate Identity)

\_\_\_\_\_

(Notary Public)

State of \_\_\_\_\_

County of \_\_\_\_\_

On this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, before me appeared \_\_\_\_\_, personally known to me to be the person described in and who executed this \_\_\_\_\_ and acknowledged that (she/he) signed the same freely and voluntarily for the uses and purposed therein described.

In witness thereof, I have hereunto set my hand and affixed my official seal the day and year last written above.

\_\_\_\_\_  
Notary Public in and for the state of \_\_\_\_\_

(seal)

\_\_\_\_\_  
(Printed Name)



# Affidavit of No Fraud or Felony Conviction

Insert Addressee Information

The undersigned hereby certifies that, no officer of the undersigned firm nor officer of any affiliates of the undersigned firm have ever been convicted of fraud or a felony by any federal or state court.

Dated: \_\_\_\_\_ By: \_\_\_\_\_

(Signature of Proposer's Authorized Representative)

By: \_\_\_\_\_

(Printed Name of Proposer's Authorized Representative)

Title: \_\_\_\_\_

(Title of Proposer's Authorized Representative)

For: \_\_\_\_\_

(Proposer's Corporate Identity)

\_\_\_\_\_  
(Notary Public)

State of \_\_\_\_\_

County of \_\_\_\_\_

On this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, before me appeared \_\_\_\_\_, personally known to me to be the person described in and who executed this \_\_\_\_\_ and acknowledged that (she/he) signed the same freely and voluntarily for the uses and purposed therein described.

In witness thereof, I have hereunto set my hand and affixed my official seal the day and year last written above.

\_\_\_\_\_

Notary Public in and for the state of \_\_\_\_\_

(seal)

\_\_\_\_\_

(Printed Name)

# EPWater Code of Ethics Compliance Form

The undersigned, acknowledges that, the undersigned firm has read EPWater's Code of Ethics and are familiar with, and agree to be bound by, the standards that govern EPWater's ethical conduct of their consultants, contractors and suppliers. The undersigned, is responsible for compliance and administration of the Code, including any ethics matters that may arise thereunder. If those obligations reside with another representative of the firm, the contact information for that person has been provided below.

The undersigned acknowledges the code will be followed throughout the CMAR procurement for the **Haskell VIP**. The undersigned further acknowledges this code has been distributed to those persons who work for or represent the Contractor on EPWater matters. They have read this Code and are familiar with, and agree to be bound by, the standards that govern the conduct of Contractors. Further, if selected for this project, the Contractor shall distribute this Code (i) immediately to all personnel engaged by the Contractor who will be working on or representing the Contractor on EPWater matters.

Signature \_\_\_\_\_

Title \_\_\_\_\_

Printed Name \_\_\_\_\_

Contractor Entity Name \_\_\_\_\_

Contractor Contact for Code administration: \_\_\_\_\_

Phone number: \_\_\_\_\_

Email address: \_\_\_\_\_

(Notary Public)

State of \_\_\_\_\_

County of \_\_\_\_\_

On this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, before me appeared \_\_\_\_\_, personally known to me to be the person described in and who executed this \_\_\_\_\_ and acknowledged that (she/he) signed the same freely and voluntarily for the uses and purposed therein described.

In witness thereof, I have hereunto set my hand and affixed my official seal the day and year last written above.

\_\_\_\_\_  
Notary Public in and for the state of \_\_\_\_\_

(seal)

\_\_\_\_\_  
(Printed Name)

**ATTACHMENT E – COST PROPOSAL FORMS (SUBMITTED IN SEPARATE ENVELOPE)**

**Cost Element 1 – Preconstruction Services Fee**

Minimum Fee	\$ <u>150,000</u>
Additional Fee (Proposer's discretion, cannot be negative)	\$ _____
Total Preconstruction Services Fee	\$ _____

**Cost Element 2 – Salaried employee labor multiplier**

Provide the labor multiplier to be applied to raw salary rates for project site employees and home office staff supporting the project \_\_\_\_\_

**Cost Element 3 - Contractors Construction Fee Percentage**

The following table mirrors the format for development of the GMP proposal as described within the Preconstruction Services Agreement. Given this format for development of the GMP, Proposer is to identify their proposed Contractors Fee as a percentage value. This Fee will be the actual fee applied in the Haskell VIP GMP Proposal to be submitted at the conclusion of the projects' Preconstruction Phase.

<b>GMP Cost Element</b>	<b>Amount</b>
<b>1. Contractors General Conditions</b> <small>(See note 1)</small>	\$ -----
<b>2. Cost of Work</b> <small>(See note 2)</small>	
2.1. Early Work Packages	\$ -----
2.2. Balance of Work	\$ -----
2.3. Contractors Contingency	\$ -----
2.4. Contractors Fee <small>(see note 3)</small>	\$ -----
<b>GMP Subtotal (Items 1 + 2)</b>	\$ -----
<b>3. Allowances</b> <small>(See note 4)</small>	
3.1. Item	\$ -----
3.2. Item	\$ -----
3.3. Item	\$ -----
<b>Allowance Subtotal (Item 3)</b>	\$ -----
<b>GMP Total (Items 1 + 2 + 3)</b>	\$ -----

**Contractor Fee: %** \_\_\_\_\_

Notes (see next pages):

1. Contractor's General Conditions costs are defined within the Preconstruction Services Agreement, Exhibit 5.2.1, Article 2.
2. Cost of work are those costs defined within the Preconstruction Services Agreement, Exhibit 5.2.1, article 1.
3. Contractors Fee is defined within Preconstruction Services Agreement Article 1.
4. Allowances are defined within Preconstruction Services Agreement Article 1.

**EXHIBIT 5.2.1  
ELEMENTS OF THE GMP  
(DRAFT)**

**1. Cost of the Work.**

The term “Cost of the Work” shall mean costs reasonably and actually incurred by Contractor in the proper performance of the Work. The Cost of the Work shall include only the following:

.1 Wages of construction workers directly employed by Contractor to perform the Work at the Site or, with Owner’s agreement, at locations off the Site.

.2 A multiplier applied to the wages of the employees of Contractor covered under Section 1.1 above as compensation for the costs incurred or customarily paid for employee benefits, project-related bonuses, premiums, taxes, insurance, contributions and assessments required by law, and/or collective bargaining agreements. The multiplier for craft/field, hourly-based on-site personnel shall be \_\_\_\_%. The multiplier for all off-site personnel shall be \_\_\_\_%.

.3 Payments properly made by Contractor to Subcontractors for performance of portions of the Work, including any bond premiums incurred by Subcontractors.

.4 Costs incurred by Contractor in repairing or correcting defective, damaged or nonconforming Work (including any warranty or corrective Work performed after Substantial Completion), provided that such Work was beyond the reasonable control of Contractor, or caused by the ordinary mistakes or inadvertence, and not the negligence, of Contractor or those working by or through Contractor, and provided further that no Contractor’s Fee shall apply to such costs. If the costs associated with such Work are recoverable from insurance or Subcontractors, Contractor shall exercise reasonable commercial efforts to obtain recovery from the appropriate source and provide a credit to Owner if recovery is obtained, net of any costs and expenses reasonably incurred by Contractor in pursuing and obtaining such recovery.

.5 Costs, including transportation, inspection, testing, storage and handling, of materials, equipment and supplies incorporated or reasonably used in completing the Work.

.6 Costs (less salvage value) of Equipment and Materials, supplies, temporary facilities, machinery, equipment and hand tools not customarily owned by the workers that are not fully consumed in the performance of the Work and which remain the property of Contractor, including the costs of transporting, inspecting, testing, handling, installing, maintaining, dismantling and removing such items.

.7 Rental charges and the costs of transportation, installation, minor repairs and replacements, dismantling and removal of temporary facilities, machinery, equipment and hand tools not customarily owned by the workers, which are provided by Contractor at the Site, whether rented from Contractor or others, and incurred in the performance of the Work.

.8 Fuel and utility costs incurred in the performance of the Work.

.9 Costs for Governmental Approvals, permits, royalties, licenses, tests, and inspections incurred by the Contractor as a requirement of the Contract Documents.

.10 The cost of defending suits or claims for infringement of patent rights arising from the use of a particular design, process, or product required by the Owner, paying legal judgments against Contractor resulting from such suits or claims, and paying settlements with the Owner's consent, provided that no Contractor's Fee shall apply to such costs.

.11 Costs incurred in preventing damage, injury or loss in case of an emergency affecting the safety of persons and property.

.12 Premiums for the Performance and Payment Bonds, and Builder's Risk insurance.

.13 Sales, use or similar taxes, tariffs, or duties incurred in the performance of the Work.

.14 Other costs reasonably and properly incurred in the performance of the Work to the extent approved in writing by Owner.

## **2. Contractor's General Conditions.**

The term "Contractor's General Conditions" shall mean Contractor's costs reasonably and actually incurred by Contractor for supervisory, construction management and overhead-related items in connection with the proper performance of the Work and which are not covered by the Cost of the Work. Contractor's General Conditions shall include only the following, unless specifically agreed upon otherwise by Owner and Contractor during the development of the GMP Proposal and execution of the Construction Contract.

.1 Base wages or salaries of Contractor's supervisory and administrative personnel engaged in the performance of the Work and who are located at the Site or working off-Site to assist in the production or transportation of Equipment and Materials, or any material or equipment necessary for the Work.

.2 A multiplier applied to the wages of the employees of Contractor covered under Section 2.2 above as compensation for the costs incurred or customarily paid by Contractor for employee benefits, project-related bonuses, premiums, taxes, insurance, contributions and assessments required by law, and/or collective bargaining agreements. The multiplier for professional, salary-based on-site personnel shall be \_\_\_\_%. The multiplier for craft/field, hourly-based on-site personnel shall be \_\_\_\_%. The multiplier for all off-site personnel shall be \_\_\_\_%.

.3 Costs of removal of debris and waste from the Site not performed or required to be performed by Subcontractors.

.4 The reasonable costs and expenses incurred in establishing, operating and demobilizing the Site office, including the cost of facsimile transmissions, long distance telephone calls, postage and express delivery charges, telephone service, photocopying, reasonable petty cash expenses.

.5 Vehicles for the transport of persons, such as passenger cars and pick-up trucks, to the extent used by any of Contractor's personnel while performing their Project-related responsibilities.

.6 Accounting and data processing costs related to the Work where previously identified and approved by Owner.

### **7.3 Non-Reimbursable Costs.**

The Cost of the Work and Contractor's General Conditions shall not include the following:

- .1 Salaries and other compensation for Contractor personnel stationed at Contractor's principal or branch offices, except as specifically provided for in Sections 2.1 and 2.2 above.
- .2 Expenses of Contractor's principal office and offices other than the Project Site office.
- .3 Overhead and general expenses, except for Contractor's General Conditions.
- .4 Bonuses, profit sharing, thrift or similar plans paid to employees of Contractor, whether or not such employee worked on the Project, except as set forth in Sections 1.2 and 2.2 above.
- .5 The cost of Contractor's capital used in the performance of the Work.
- .6 Insurance premiums incurred or paid by Contractor, other than the Builder's Risk insurance.
- .7 Any costs not specifically set forth in the Cost of the Work (Section 1) and Contractor's General Conditions (Section 2).
- .8 Costs that would cause the GMP to be exceeded.
- .9 Costs and expenses incurred to obtain any Governmental Approval, permit, license, registration, or other approval, or fee or charge incurred, in connection with the general operations of Contractor and not required specifically and exclusively for the performance of the Work.
- .10 Any cost or expense incurred in connection with the performance of the Preconstruction Agreement.

**ATTACHMENT F – PROPOSAL TEMPLATE FORMS**

**Key Personnel Resume Template Requirements**

Resumes are limited to one page in length and shall cover the following six topics. Proposers shall utilize the following resume template for key personnel resumes identified in Part 3 of RFP section 6.

<p style="text-align: center;"><b>Photograph</b></p>	<p><b>Staff Name and Project Role</b></p>
	<p><b>Summary of Experience</b>          Years of experience, types of projects experience with alternative project delivery methods, technical and managerial skills</p>
<p><b>Education:</b></p> <ul style="list-style-type: none"> <li>• List...</li> </ul> <p><b>Licensing and Certifications:</b></p> <ul style="list-style-type: none"> <li>• List...</li> </ul> <p><b>Professional and Technical Affiliations:</b></p> <ul style="list-style-type: none"> <li>• List...</li> </ul> <p><b>Expected Time Commitment:</b></p> <ul style="list-style-type: none"> <li>• Preconstruction %</li> <li>• Construction %</li> </ul>	<p><b>Prior Project Experience</b>          Identify the project name, location, project size, delivery model, major elements of work and any unique challenges to construction. Describe staff member’s project role, and responsibility on the project and how this experience is relevant to the staff member’s role on the Haskell R. Street Various Improvements Project. If an alternative delivery project, elaborate on the staff member’s specific responsibilities during preconstruction and construction phases of the project.</p>



**Reference Project Experience Template Requirements**

Reference project descriptions are limited to one page in length. Proposers shall organize their information consistent with the following template.

<b>Project Name</b> <b>Role of Proposer</b>		
<b>Photo(s)</b>	<b>Owner Name:</b>  <b>Project Location:</b>  <b>Owner reference and contact information:</b> <ul style="list-style-type: none"> <li>• Name and title</li> <li>• Address</li> <li>• Phone</li> <li>• Email</li> </ul> <b>Engineer:</b>  <b>Delivery Model:</b>  <b>Contract Type (i.e. cost plus, fixed price, GMP)</b>	
<b>Project Summary</b>		
<b>Project Features, Highlights and Relevance to the Haskell R. Street Various Improvements Project</b>		
<b>Construction Cost</b> <ul style="list-style-type: none"> <li>• Initial</li> <li>• Final</li> </ul>	<b>Change orders</b> <ul style="list-style-type: none"> <li>• Value</li> <li>• Percentage of original cost</li> </ul>	<b>Completion Date</b> <ul style="list-style-type: none"> <li>• Scheduled</li> <li>• Actual</li> </ul>





**STANDARD FORM OF AGREEMENT BETWEEN OWNER AND CONTRACTOR  
FOR CONSTRUCTION CONTRACT**

**THIS AGREEMENT** (this “Agreement”) is made this \_\_\_ day of \_\_\_\_\_, 202\_ (“Effective Date”), by and between El Paso Water Utilities – Public Service Board, a component unit of the City of El Paso, Texas (“Owner”), and \_\_\_\_\_, a corporation organized under the laws of the state of \_\_\_\_\_ (“Contractor”), for certain services related to a construction project known as the “\_\_\_\_\_” (“Project”).

**WITNESSETH:**

**WHEREAS**, Owner and Contractor entered into a Preconstruction Services Agreement dated \_\_\_\_\_, 202\_, whereunder Contractor provided preconstruction services for the Project; and

**WHEREAS**, as part of its preconstruction services under the Preconstruction Services Agreement, Contractor submitted to Owner a proposal to perform the construction of the Project on a guaranteed maximum price basis (“GMP Proposal”) for the work or for a portion of the work (“Initial GMP Proposal); and

**WHEREAS**, on or about \_\_\_\_\_, Owner and Contractor agreed upon the terms of the GMP Proposal (or Initial GMP Proposal), for a portion of the work and Owner issued Contractor a notice of intent to award this Agreement; and

**WHEREAS**, on or about \_\_\_\_\_, the Public Service Board of the City of El Paso, Texas approved the award of this Agreement to Contractor; and

**WHEREAS**, Contractor has fulfilled all conditions precedent to the award of this Agreement, including but not limited to providing Owner with requisite performance and payment bonds.

**NOW, THEREFORE**, in consideration of the mutual covenants and obligations contained herein, Owner and Contractor hereby agree as follows:

**ARTICLE 1-WORK**

1.01 Contractor shall complete all Work as specified or indicated in the Contract Documents.

**ARTICLE 2- THE PROJECT**

2.01 The Project is described as the \_\_\_\_\_ Project (“Project”).

**ARTICLE 3-CONTRACTOR’S RESPONSIBILITIES**

3.01 The Contractor shall perform all preconstruction, procurement, construction, start-up and performance testing services required by the Contract Documents. The Contractor shall provide all material, equipment, tools, labor, and supervision and coordination necessary to complete the Work in full accord with and reasonably inferable from the Contract Documents. The Contractor shall be responsible for its own construction means, methods, techniques, sequences, and procedures unless the Contract Documents provide other specific instructions or requirements.

The Contractor shall permit only fit and skilled persons to perform the Work. The Contractor shall enforce safety procedures, discipline, security, and good order among persons performing all

aspects of the Work. The Contractor shall maintain good order and cleanliness at the site.

### 3.02 General Responsibilities

A. The Contractor shall comply with any and all applicable licensing requirements in the jurisdiction where the Project is located.

B. The Contractor, with the assistance of the Owner, shall prepare and file documents required to obtain necessary approvals of governmental authorities having jurisdiction over the Project.

C. The Contractor shall designate in writing a representative who is authorized to act on the Contractor's behalf with respect to the Project. Such designation may not be changed without written notice to and approval of the Owner, such approval may not be unreasonably withheld.

D. The Contractor shall perform the Work in strict accordance with the Contract Documents. The Contractor shall not be relieved of the obligation to perform the Work in accordance with the Contract Documents by the activities, tests, inspections or approvals of the Owner.

1. The Contractor shall perform the Work in compliance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities. If the Contractor performs Work contrary to applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities, the Contractor shall assume responsibility for such Work and shall bear the costs attributable to correction.

2. Neither the Contractor nor any Subcontractor, Consultant, Engineer, or Architect shall be obligated to perform any act which they believe will violate any applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities. If the Contractor determines that implementation of any instruction received from the Owner, including those from the Engineer, would cause a violation of any applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, the Contractor shall notify the Owner and the Engineer in writing. Upon verification by the Owner that a change to the Construction Documents is required to remedy the violation, the Owner and the Contractor shall execute a contract modification in accordance with the General Conditions.

E. The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Consultants, Subcontractors, and their agents and employees, and other persons or entities performing portions of the Work.

F. If part of the Work requires design, engineering, or other professional services of the Contractor or its consultants, or when applicable law requires that services be performed by licensed professionals, the Contractor shall provide those services through qualified, licensed professionals in accordance with the Texas Occupations Code and all applicable legal standards of care applicable to design professionals, including the standard of care described in the General Conditions.

G. The Owner and Contractor may agree, in consultation with the Engineer, for the Construction Phase to commence prior to completion of the Preconstruction Phase, in which case, both phases will proceed concurrently. The Contractor shall identify a representative authorized to act on behalf

of the Contractor with respect to the Project.

#### **ARTICLE 4- ENGINEER**

4.01 The Owner has retained \_\_\_\_\_ (“Engineer”) to act as Owner’s representative, assume all duties and responsibilities of Engineer, and have the rights and authority assigned to Engineer in the Contract Documents. The part of the Project that pertains to the Work has been designed by Engineer. The duties of each Engineer will be assigned by Owner as Owner sees fit.

#### **ARTICLE 5- CONTRACT TIMES**

##### *5.01 Time is of the Essence*

A. All of the Contract Times, individually and collectively, are of the essence of the Agreement. By executing this Agreement, the Contractor confirms that the Contract Times is reasonable period for performing the Work.

B. The Contractor shall not, except by agreement of the Owner in writing, commence the Work prior to the effective date of insurance, other than property insurance, required by this Agreement. The Contract Time shall not be adjusted as a result of the Contractor's failure to obtain insurance required under this Agreement.

C. The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion within the Contract Time.

D. The date of commencement of the Work shall be stated in a Notice to Proceed issued by the Owner. The date of commencement, as that term is used in the Contract Documents, shall mean the commencement of the Construction Phase which will be evidenced by the Owner's acceptance of the Contractor's GMP Proposal (or Initial GMP Proposal) or the Owner's issuance of a Notice to Proceed, whichever occurs earlier.

##### *5.02 Contract Times: Dates*

Contractor shall achieve Substantial Completion of the Work on or before the following date (“Scheduled Substantial Completion Date”):

- For Initial GMP: \_\_\_ calendar days from the issuance of the Notice to Proceed.
- For subsequent GMPs: TBD calendar days from the issuance of the Notice to Proceed.

Contractor shall achieve Final Completion of the Work as expeditiously as reasonably practicable, but in no event later than the following date after Substantial Completion (“Scheduled Final Completion Date”):

- For Initial GMP: \_\_\_ calendar days after Substantial Completion.
- For subsequent GMPs: TBD calendar days after Substantial Completion.

##### *5.03 Schedule Adjustments*

A. All of the scheduled completion dates set forth in Paragraphs 5.02 above (collectively the “Contract Times”) shall be subject to adjustment in accordance with the General Conditions.

5.04 *Liquidated Damages*

- A. Contractor and Owner recognize that time is of the essence as stated in Paragraph 5.01 above and that Owner will suffer financial and other losses if the Work is not completed and Milestones not achieved within the Contract Times, as duly modified. The parties also recognize the delays, expense, and difficulties involved in proving, in a legal proceeding, the actual loss suffered by Owner if the Work is not completed on time. Accordingly, instead of requiring any such proof, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty):

*Substantial Completion:* If Substantial Completion has not been achieved on or before the Scheduled Substantial Completion Date, then Contractor shall pay to Owner the following liquidated damages:

- For Initial GMP: \$ \_\_\_\_\_ per day for each day until Substantial Completion is achieved.
- For subsequent GMPs: \$TBD per day for each day until Substantial Completion is achieved.

*Final Completion:* If Final Completion has not been achieved on or before the Scheduled Final Completion Date, then Contractor shall pay to Owner the following liquidated damages:

- For Initial GMP: \$ \_\_\_\_\_ per day for each day until Final Completion is achieved is achieved.
- For subsequent GMPs: \$TBD per day for each day until Final Completion is achieved.

- B. The Parties acknowledge, recognize and agree on the following:

1. That because of the unique nature of the Project, it is difficult or impossible to determine with precision the amount of damages that would or might be incurred by Owner as a result of Contractor's failure to complete the Work on or before the applicable Contract Time(s);
2. That any sums which would be payable under Paragraph 5.04.A are in the nature of liquidated damages, and not a penalty, and are fair and reasonable and such payment represents a reasonable estimate of fair compensation for the losses that may reasonably be anticipated from such failure;
3. That any sums which would be payable herein shall be in lieu of all liability for any and all extra costs, losses, expenses, claims, penalties and any other damages, whether special or consequential, and of whatsoever nature incurred by Owner which are occasioned by any delay in achieving the applicable Contract Time(s) for the above-referenced Work. Notwithstanding the above, liquidated damages are not intended to excuse Contractor from liability for any other breach of its obligations under the Contract Documents; and
4. That, in recognition of the acknowledgments above, Contractor is expressly estopped from arguing, and waives any rights it may have to argue, that the liquidated damages in Paragraph 5.04.A are a penalty and that they are not enforceable.

C. Owner shall have the right to deduct the liquidated damages set forth in Paragraph 5.04.A from any monies unpaid, otherwise due, or to become due, to Contractor, to demand and receive payment from Contractor of such liquidated damages, and to initiate applicable dispute resolution procedures under the General Conditions to recover such liquidated damages. The deductions of such damages from any monies unpaid, otherwise due, or to become due shall be in addition to retainage under the Contract Documents. Owner has the discretion to allow liquidated damages to accrue without collecting and by doing so does not waive any rights to collect them at a later time.

D. Delays and Extension of Times: Unless otherwise set forth in this Section, Project delays shall be governed in accordance with the General Conditions.

1. Claims relating to time and adjustment to GMP shall be made in accordance with applicable provisions of the General Conditions.

2. This Section 5.04 does not preclude recovery of damages for delay by Owner under other provisions of the Contract Documents.

3. The procedure for the determination of time extensions for unusually severe weather is as described in this Section. In order for the Owner to award a time extension under this clause, the following conditions must be satisfied.

a. The weather experienced at the Project site during the Contract period must be found to be unusually severe, that is, more severe than the adverse weather anticipated for the Project location during any given month.

b. The unusually severe weather must actually cause a delay to the completion of the Project.

4. The following schedule of monthly anticipated adverse weather delays is based on National Oceanic and Atmospheric Administration (NOAA) or similar data for the Project location and will constitute the base line for monthly weather time evaluations. The Contractor's activity durations provided in the progress schedule must reflect these anticipated adverse weather delays in all weather dependent activities.

MONTHLY ANTICIPATED ADVERSE WEATHER DELAY WORK DAYS  
BASED ON FIVE (5) DAY WORK WEEK

JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
(4)	(3)	(3)	(2)	(3)	(4)	(8)	(8)	(6)	(5)	(3)	(4)

5. For the duration of the Agreement, the Contractor shall maintain in its daily reports an accurate and contemporaneous record of the occurrence of adverse weather and resultant impact to normally scheduled Work. Delay from adverse weather unless Work on the overall Project's critical activities is prevented for 50 percent or more of the Contractor's scheduled workday. The number of actual adverse weather days shall be calculated monthly. If the number of actual adverse weather delay days in a month exceed the number of days for that month as referenced above, the Owner upon notification by the Contractor, will convert any qualifying delays to calendar days, giving full consideration for equivalent



fair weather workdays, and a modification shall be issued in accordance with the Agreement.

## **ARTICLE 6- CONTRACT PRICE**

### **6.01 Contract Price.**

A. Owner shall pay Contractor a contract price for the proper performance of the Work and all other obligations under the Contract Documents (the "Contract Price"). The Contract Price is comprised of, and equals the sum of, the following:

1. The Cost of the Work, as defined in Paragraph 7.01 below;
2. Contractor's General Conditions, as defined in Paragraph 7.02 below; and
3. Contractor's Fee, as defined in Article 8 below.

B. Owner's obligation to pay Contractor is subject to the Guaranteed Maximum Price and the limitations set forth in Article 9 below.

## **ARTICLE 7- COST OF THE WORK AND CONTRACTOR'S GENERAL CONDITIONS**

7.01 The term "Cost of the Work" shall mean costs reasonably and actually incurred by Contractor in the proper performance of the Work and, except as otherwise may be agreed to in writing by Owner, will be in amounts no higher than those commonly incurred in the locality of the Project. The Cost of the Work shall include only the items set forth in Exhibit 9.01.

7.02 The term "Contractor's General Conditions" shall mean Contractor's costs reasonably and actually incurred by Contractor for supervisory, construction management and overhead-related items in connection with the proper performance of the Work and which are not covered by the Cost of the Work. Except as otherwise may be agreed to in writing by Owner, the items set forth in Contractor's General Conditions will be in amounts no higher than those commonly incurred in the locality of the Project, and shall only include the items set forth in Exhibit 9.01.

7.03 The term "Non-Reimbursable Costs" shall mean costs set forth in Exhibit 9.01 of this Agreement, which costs are: (a) not included as either a Cost of the Work or Contractor's General Conditions; and (b) compensated to Contractor through Contractor's Fee.

## **ARTICLE 8- CONTRACTOR'S FEE**

8.01 Contractor's Fee shall be \$\_\_\_\_\_ and represents the compensation to Contractor for profit and the Non-Reimbursable Costs.

8.02 Contractor's Fee will be adjusted as follows for the following:

- A. For additive Change Orders, including additive Change Orders arising from both additive and deductive items, it is agreed that Contractor shall receive a Fee not to exceed \_\_\_ percent (\_\_\_%) of the additional Costs of the Work incurred for that Change Order.
- B. For Costs of the Work that are drawn from the Owner Contingency or Project Contingency, it is agreed that Contractor shall receive a Fee not to exceed \_\_\_\_\_ percent (\_\_\_\_%) of such Costs of the Work.

- C. For deductive Change Orders, including deductive Change Orders arising from both additive and deductive items, an amount equal to \_\_\_\_\_ percent (\_%) applied to the direct costs of the net reduction (which amount will account for a reduction associated with Contractor's Fee).

## **ARTICLE 9- GUARANTEED MAXIMUM PRICE**

### *9.01 Guaranteed Maximum Price.*

- A. Contractor guarantees that the maximum amount payable by Owner (Guaranteed Maximum Price, or GMP) for the sum of the Cost of the Work, Contractor's General Conditions and Contractor's Fee will not exceed the following, subject to increases or decreases to the GMP made in accordance with the General Conditions:

- Initial GMP not exceed \$\_\_\_\_\_ for the portion of the Work identified by Owner and Contractor as more fully described in Exhibit 9.01.

The Parties agree that the Initial GMP will be amended, through a Guaranteed Maximum Price Amendment to the Standard Form of Agreement Between Owner and Construction Manager, when the Owner accepts Contractor's subsequent GMP Proposal(s) for the remainder of the Work pursuant to the Preconstruction Services Agreement between the parties.

- B. Contractor shall be responsible for paying all costs of completing the Work which exceed the accepted GMP(s). The GMP may only be adjusted as allowed in the Contract Documents.

### *9.02 Owner Contingency.*

- A. The Owner Contingency will be used by Owner to fund items that would otherwise be subject to a Change Order. If the Owner Contingency is totally depleted, the Owner will fund these items, or replenish the Owner Contingency, by increasing the GMP by Change Order in accordance with the General Conditions. Neither Owner nor Contractor's rights or obligations under the Contract Documents shall be affected by the Owner Contingency.
- B. For the avoidance of doubt, for all items covered by the Owner Contingency, Contractor shall be obligated to comply with all of the requirements set forth in the General Conditions, with respect to the item that forms the basis for the Change Order.
- C. Any unused amounts of the Owner Contingency shall be reflected in a Change Order that increases or decreases the GMP by such amounts, with the understanding that Contractor shall not be entitled to share in any savings on this contingency.

### *9.03 Project Contingency.*

- A. The Initial GMP and subsequent GMPs include a project contingency line item ("Project Contingency"). The Project Contingency is available for Contractor's exclusive use for unanticipated Costs of the Work that it has incurred that are not the basis for a Change Order under the Contract Documents, plus the applicable Contractor's Fee. By way of example, and not as a limitation, such costs may include: (a) trade buy-out differentials; (b) overtime or acceleration; (c) escalation of labor and material costs; (d) correction of defective, damaged or nonconforming Work; (e) Subcontractor defaults; and (f) deductibles incurred by Contractor under the insurance required under the Contract Documents (but not to exceed \$25,000 per occurrence). The Project Contingency is not available to Owner for any reason, including, but

not limited to, changes in scope or any other item which would enable Contractor to increase the GMP under the Contract Documents.

- B. Contractor may draw upon the Project Contingency by making a written request to Owner, identifying the reason and amount of the draw, and by obtaining Owner's written approval, which shall not be unreasonably withheld. If Owner approves a draw against the Project Contingency, Contractor shall, in its Applications for Payment, show an increase in the relevant line item by the amount drawn and a decrease in the line item for the Project Contingency.
- C. Contractor agrees that with respect to any expenditure from the Project Contingency relating to a Subcontractor default for which insurance or bond may provide reimbursement, Contractor will in good faith exercise reasonable steps to obtain performance from the Subcontractor and/or recovery from any surety or insurance. If Contractor is subsequently reimbursed for said costs, then said recovery will be credited back to the Project Contingency, net of any reasonable costs and expenses incurred by Contractor in pursuing such recovery.

9.04 *Allocation of Savings.*

- A. If upon Final Completion the sum of: (1) the actual Cost of the Work incurred by Contractor (e.g., not including any unused portions of the Contingency, Allowance Payment Values, or Project Contingency Allowance); (2) Contractor's General Conditions; and (3) Contractor's Fee, is less than the GMP(s), as such GMP may have been adjusted over the course of the Project, then the difference ("Savings") shall be treated as follows: Savings will be returned or credited to Owner.

**ARTICLE 10- SUBCONTRACTORS**

10.01 *Subcontractor Default.*

- A. If there is Subcontractor selected to perform any elements of the Work and the selected Subcontractor defaults in the performance of its work or fails to execute a subcontract after being selected in accordance with the process set forth above, Contractor may itself fulfill, without advertising, the contract requirements or select a replacement Subcontractor to fulfill the contract requirements.

**ARTICLE 11- CONSULTATION AND SCHEDULING**

11.01. The Contractor shall schedule and conduct progress meetings with the Owner, on a weekly basis, to review matters such as procedures, progress in construction, coordination, and scheduling of the Work.

11.02 *Progress Reports.*

A. The Contractor shall keep the Owner informed of the progress and quality of the Work. On a monthly basis, or otherwise as agreed to by the Owner and Contractor, the Contractor shall submit written progress reports to the Owner. The reports shall be generated using the software specified by the Owner. The reports shall show estimated percentages of completion and other information identified below:

- a. Work completed for the period;
- b. Project schedule status;

- c. Submittal schedule and status report, including a summary of outstanding Submittals;
- d. Responses to requests for information to be provided by the Owner;
- e. Approved Change Orders and Change Directives;
- f. Pending Change Order and Change Directive status reports;
- g. Tests and inspection reports;
- h. Status report of Work rejected by the Owner;
- i. Status of Claims previously submitted;
- j. Cumulative total of the Cost of the Work to date including the Construction Manager's compensation and Reimbursable Expenses, if any;
- k. Current Project cash-flow and forecast reports; and
- l. Additional information as agreed to by the Owner and Contractor.

B. In addition, where the Contract Price is the Cost of the Work, the Contractor shall include the following additional information in its progress reports:

- a. Contractor's work force report;
- b. Equipment utilization report; and
- c. Cost summary, comparing actual costs to updated cost estimates.

C. The Contractor shall perform the Work in general accordance with the most recent schedules submitted to and approved by the Owner. The schedule shall be updated regularly and in advance of periodic Project meetings with the Owner and Owner's Engineer. Such schedules shall be posted at the Project meetings in a convenient location for review and approval by the Owner. Contractor shall request approval of Owner of any change to the approved schedule. Subcontractors completing the scope of work are also subject to the approved schedules.

D. The Contractor shall exercise reasonable care in preparing schedules and estimates. The Contractor, however, does not warrant or guarantee estimates and schedules except as may be included as part of the Guaranteed Maximum Price. The Contractor is not required to ascertain that the Drawings and Specifications are in accordance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, but the Contractor shall promptly report to the Engineer and Owner any nonconformity discovered by or made known to the Contractor as a request for information in such form as the Engineer may require. Any failure by Contractor to report known deviations or noncompliance will result in a waiver of any associated claims by the Contractor and shall require the Contractor to indemnify and hold the Owner harmless for any costs associated with the Contractor's failure in this regard.

## **ARTICLE 12- CERTIFICATIONS**

12.01 If applicable and upon the Owner's written request, the Contractor shall obtain from its Consultants and Subcontractors, and furnish to the Owner, certifications with respect to the documents and services provided by Contractor's Consultants and Subcontractors that, to the best of their knowledge, information and belief, the documents or services to which the certifications relate (1) are consistent with the Contract Documents, except to the extent specifically identified in the certificate, and (2) comply with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities governing the design of the Project; and (3) that the Owner and Owner's Engineer shall be entitled to rely upon the accuracy of the representations and statements contained in the certifications.

## **ARTICLE 13- CONTRACTOR'S SUBMITTALS**

- 13.01 Prior to submission of any Submittals, the Contractor shall prepare a Submittal schedule, and shall submit the schedule for the Owner's and Engineer's approval. The Owner's approval shall not unreasonably be delayed or withheld. The Submittal schedule shall (1) be coordinated with the Engineer's schedule provided in this Section, (2) allow the Owner and Engineer reasonable time to review Submittals, and (3) be periodically updated to reflect the progress of the Work. If the Contractor fails to submit a Submittal schedule, the Contractor shall not be entitled to any increase in Contract Price or extension of Contract Time based on the time required for review of Submittals.
- 13.02 By providing Submittals the Contractor represents to the Owner that it has (1) reviewed and approved them, (2) determined and verified materials, field measurements and field construction criteria related thereto, and (3) checked and coordinated the information contained within such Submittals with the requirements of the Work and of the Contract Documents.
- 13.03 The Contractor shall perform no portion of the Work for which the Contract Documents require Submittals until the Owner and Engineer have approved the respective Submittal.
- 13.04 The Work shall be in accordance with approved Submittals. Work done in compliance of an approved Submittal does not relieve the Contractor of its responsibility to perform the Work consistent with the requirements of the Contract Documents and the design intent if the Work subject to an approved Submittal fails or is deemed defective by the Owner or Owner's Engineer. The Work may deviate from the Contract Documents only if the Contractor has notified the Owner and Owner's Engineer in writing of a deviation from the Contract Documents at the time of the Submittal and a Modification is executed authorizing the identified deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Submittals or by the Owner's or Engineer's approval of the Submittals.
- 13.05 Any professional design services or certifications to be provided by the Contractor, including all drawings, calculations, specifications, certifications, shop drawings and other Submittals, shall contain the signature and seal of the licensed design professional preparing them. Submittals related to the Work designed or certified by the licensed design professionals, if prepared by others, shall bear the licensed design professional's written approval. The Owner and Engineer shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications or approvals performed by such design professionals. All design work product shall be generated using the software specified by Owner.

## **ARTICLE 14- OWNER'S RESPONSIBILITIES**

- 14.01 The Owner's responsibilities shall be governed in accordance with the General Conditions.

## **ARTICLE 15-PAYMENT PROCEDURES**

- 15.01 *Submittal and Processing of Payments.*

Contractor shall submit Applications for Payment in accordance with the General Conditions. Applications for Payment will indicate the amount of Contractor's Fee then payable. Applications for Payment will be processed by Construction Manager as provided in the General Conditions.

15.02 *Progress Payments; Retainage.*

- A. Owner shall make progress payments on the basis of Contractor's Applications for Payment as recommended by Construction Manager in accordance with the General Conditions. All such payments will be measured by the Schedule of Values established as provided in the General Conditions or, in the event there is no Schedule of Values, as provided elsewhere in the Contract.
- B. Owner will withhold retainage in the amount of five percent (5%) on progress payments due Contractor. Upon Substantial Completion, Owner shall pay an amount sufficient to increase total payments to Contractor to one hundred percent (100%) of the Work completed, less such amounts set off by Owner pursuant to the General Conditions, which will be considered valid reasons for a bona fide dispute, and less two hundred percent (200%) of Engineer's estimate of the value of Work to be completed or corrected as shown on the punch list of items to be completed or corrected prior to final payment.

15.03 *Final Payment.*

Upon final completion and acceptance of the Work, Owner shall pay the remainder of the Contract Price in accordance with the General Conditions.

15.04 *Consent of Surety.*

Owner will not make final payment, or return or release retainage at Substantial Completion or any other time, unless Contractor submits written consent of the surety to such payment, return, or release.

15.05 *Interest.*

Timelines and interest due on payments to the Contractor are subject to the and controlled by Chapter 2251 of the Texas Government Code.

**ARTICLE 16- BOOKS AND RECORDS**

16.01 *Retention and Audit of Books and Records.*

- A. Contractor shall keep full and detailed accounts and exercise such controls as may be necessary for proper financial management, using accounting and control systems in accordance with generally accepted accounting principles, consistently applied, and as may be provided in the Contract Documents. During the Book and Records Period, Owner and its accountants shall be afforded access to, and the right to audit from time-to-time, upon reasonable notice, all Books and Records relating to the Work, all of which Contractor shall preserve during the Books and Record Period. Such inspection shall take place at Contractor's offices during normal business hours unless another location and time is agreed to by the Parties. Owner may take possession of such Books and Records by reproducing such Books and Records for off-site review or audit. When requested in Owner's written notice of examination and/or audit, Contractor shall provide Owner with copies of electronic and electronically stored Books and Records in a reasonably usable format that allows Owner to access and analyze all such Books and Records. For Books and Records that require proprietary software to access and analyze, Contractor shall provide Owner with the means to do so, including a license authorizing Owner to access and analyze all such Books and Records.

16.02 *Items Not Subject to Audit.*

- A. For the avoidance of doubt, Owner shall not have the right to audit any items for which it has accepted a lump sum proposal or agreed upon a fixed price/lump sum, including, but not limited to any multipliers or markups agreed to by the Owner and Contractor as part of this Agreement, which are only subject to audit to confirm that such multiplier or markup has been charged in accordance with this Agreement.

16.03 *Flow-Down into Subcontracts.*

- A. Contractor shall insert a clause containing all the provisions of this Article 16 in all Subcontracts.

**ARTICLE 17-CONTRACT DOCUMENTS**

17.01 *Contents.*

- A. The Contract Documents consist of all of the following:

1. This Agreement.
2. General Conditions.
3. GMP Proposal or Initial GMP Proposal and subsequent GMP Proposals
4. Exhibits to this Agreement.
5. The following which shall be designated, completed, delivered, prepared, issued and incorporated to the Contract Documents after the Effective Date of the Agreement and are not attached hereto:
  - The Construction Documents
  - Guaranteed Maximum Price Amendment(s) to the Standard Form of Agreement Between Owner and Construction Manager
  - Work Change Directives
  - Change Orders
  - Field Orders

- B. The Contract Documents listed in Paragraph 17.01.A are attached to this Agreement (except as expressly noted otherwise above).

- C. There are no Contract Documents other than those listed above in this Article 17.

- D. The Contract Documents may only be amended, modified, or supplemented as provided in the Contract Documents.

17.02 *Order of Precedence.*

- A. The Contract Documents are complementary; what is called for by one is as binding as if called for by all. The following order of precedence shall apply in the case of direct, irresolvable conflicts between or among Contract Documents:

1. Change Orders
2. Work Change Directives
3. Field Orders
4. Written amendments
5. This Agreement, and all of the Exhibits except for Exhibit 9.01 (GMP Proposal)
6. General Conditions of Contract
7. The Construction Documents
8. GMP Proposal or Initial GMP Proposal (Exhibit 9.01)

## **ARTICLE 18- REPRESENTATIONS, CERTIFICATIONS, AND STIPULATIONS**

### **18.01 Contractor's Representations.**

- A. In order to induce Owner to enter into this Agreement, Contractor makes the following representations:
  1. Contractor has examined and carefully studied the Contract Documents.
  2. Contractor has visited the Plant, conducted a thorough visual examination of the Plant, including the Site and adjacent areas, and become familiar with the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
  3. Contractor is familiar with all Laws and Regulations that may affect cost, progress, and performance of the Work.
  4. Contractor has carefully studied the reports of explorations and tests of subsurface conditions at or adjacent to the Site and the drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the GMP Proposal or Initial GMP Proposal.
  5. Contractor has carefully studied the reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the GMP Proposal or Initial GMP Proposal.
  6. Contractor has considered the information known to Contractor itself; information commonly known to contractors doing business in the locality of the Plant; information and observations obtained from visits to the Plant, including the Site; and the Contract Documents, with respect to the effect of such information and observations, on: (a) the cost, progress, and performance of the Work; (b) the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor; and (c) Contractor's safety precautions and programs.
  7. Based on the information and observations referred to in the preceding paragraph, Contractor agrees that no further examinations, investigations, explorations, tests, studies,



or data are necessary for the performance of the Work within the GMP(s), within the Contract Times, and in accordance with the other terms and conditions of the Contract.

8. Contractor is aware of the general nature of work to be performed by Owner and others at the Plant that relates to the Work as indicated in the Contract Documents.
9. Contractor has given Owner and Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and of discrepancies between Site conditions and the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.
10. The Contract Documents are sufficiently complete to indicate and convey an understanding of all terms and conditions for performance and furnishing of the Work, including having enabled Contractor to establish the GMP(s).
11. The GMP(s) contain sufficient monies to perform all Work, including Contractor's obligation to provide and construct any items that are not explicitly contained in the GMP Proposal Design Documents but which are reasonably inferable from the GMP Proposal Design Documents and necessary to provide a fully-functioning Project meeting the intent of the Contract Documents.

18.02 *Contractor's Certifications.*

- A. Contractor certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing the Contract. For the purposes of this Paragraph 18.02:
  1. The term "corrupt practice" means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process or in the Contract execution;
  2. The term "fraudulent practice" means an intentional misrepresentation of facts made; (a) to influence the bidding process or the execution of the Contract to the detriment of Owner; (b) to establish Bid or Contract prices at artificial non-competitive levels; or (c) to deprive Owner of the benefits of free and open competition;
  3. The term "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish Bid prices at artificial, non-competitive levels; and
  4. The term "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

**ARTICLE 19-MISCELLANEOUS**

19.01 *Compliance with Owner's Policies.*

A. Drug and Alcohol-Free Workplace.

Owner maintains a drug and alcohol-free workplace in accordance with the Drug-Free Workplace Act of 1988. Contractor shall publicize a statement notifying its employees that the

unlawful manufacture, distribution, dispensation, possession, or use of a controlled substance is prohibited in the workplace, including at the Plant.

B. Smoking.

Owner maintains specific rules regarding smoking on Owner's properties. Contractor shall adhere to such rules at the Plant.

C. Firearms.

Owner maintains specific rules regarding firearms and Contractor shall adhere to such rules at the Plant.

Additionally, in accordance with Section 2274.002 of the Texas Government Code, Contractor does not have a practice, policy, guidance or directive that discriminates against a firearm entity or firearm trade association and will not discriminate during the term of the contract against a firearm entity or firearm trade association.

D. Good Faith Efforts to Obtain Minority Participation in the Project.

Owner encourages the participation of Small Locally-Owned Businesses, Minority Business Enterprises and Women-Owned Business Enterprises. The goals and requirements of this program are set forth in Exhibit 19.01(D), and Contractor shall comply with the terms of such Exhibit.

E. Owner's Safety Requirements.

While at the Plant, Contractor shall comply with Owner's Safety Manual (dated June 12, 2018).

F. Israel.

Contractor confirms that it does not boycott Israel and will not do so during the term of this Agreement.

G. Traffic Safety.

Owner maintains specific rules regarding traffic safety on Owner's properties. Contractor shall adhere to such rules at the Plant.

H. Project Wage Rates.

The wage rates and other requirements of Exhibit 19.01(H) are applicable to all Work performed under the Contract Documents. Contractor and any subcontractor shall pay not less than the general prevailing wage rates in the Exhibit to all laborers, workmen and mechanics employed by Contractor and any subcontractor. Contractor confirms that it will comply with the terms of such Exhibit.

I. Energy Companies.

In accordance with Chapter 2274 of the Texas Government Code, Contractor does not boycott energy companies and will not boycott energy companies during the term of the contract.

- 19.02 *Governing Law.* The Contract shall be governed by the law of the state of Texas.
- 19.03 *Venue.* This Agreement is entered into and performed in El Paso County, Texas, and the Contractor and the Owner agree that mandatory venue for any legal action related to this contract shall be in the court of competent jurisdiction sitting in El Paso County, Texas.
- 19.04 *Successors and Assigns.* The Owner and Contractor, respectively, bind themselves, their partners, successors, assigns and legal representatives to the covenants, agreements and obligations contained in the Contract Documents. Neither party to the Contract shall assign the Contract in whole or in part without the express written consent of the other. If either party attempts to make such an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract and the attempted assignment shall be of no legal force or effect as to the other party.
- 19.05 *Notice.*

- A. Whenever the Contract Documents require that notice be provided to the other Party, notice will be deemed to have been validly given: (a) if delivered in person to the individual intended to receive such notice; or (b) four (4) days after being sent by registered or certified mail, postage pre-paid, with return receipt requested, to the address indicated in the Agreement, or (c) one (1) business day after being sent by overnight delivery via a nationally recognized courier service (e.g., FedEx or UPS), postage, transmittal or shipping charges prepaid, to the address set forth below:

If to Contractor:

\_\_\_\_\_  
\_\_\_\_\_

If to Owner:

El Paso Water Utilities – Public Service Board  
John E. Balliew, President/CEO  
1154 Hawkins Blvd.  
El Paso, Texas 79925

- 19.06 *Insurance and Bonds.*
- A. *Insurance.* Contractor shall obtain and maintain, at its own cost and expense, the insurance coverages specified in Exhibit 19.06, which insurance shall be in accordance with the requirements of the General Conditions.
- B. *Bonds and Other Performance Security.* In accordance with the General Conditions and Texas Government Code Chapter 2253, Contractor shall provide performance bond and labor and material payment bonds.

19.07 *Right and Remedies.*

A. Duties and obligations imposed by the Contract Documents, and rights and remedies available thereunder, shall be in addition to and not a limitation of duties, obligations, rights and remedies otherwise imposed or available by law.

B. No action or failure to act by the Owner or Contractor shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach thereunder, except as may be specifically agreed in writing.

19.08 *Interpretation.*

Unless otherwise stated in the Contract Documents, words which have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

19.09 *Independent Contractor.*

The Contractor is an independent contractor and shall not act on behalf of or in the name of the Owner except as may be provided in this Agreement or the Contract Documents and as expressly authorized by the Owner's Representative. The relationship of the parties is not intended in any way to create a fiduciary obligation between them.

19.10 *Confidential Information.*

A. Confidential Information is defined as information which is determined by the transmitting Party to be of a confidential or proprietary nature and: (a) the transmitting Party identifies as either confidential or proprietary; (b) the transmitting Party takes steps to maintain the confidential or proprietary nature of the information; and (c) the document is not otherwise available in or considered to be in the public domain. The receiving Party agrees to maintain the confidentiality of the Confidential Information and agrees to use the Confidential Information solely in connection with the Project.

B. A party receiving Confidential Information may disclose the Confidential Information as required by law or court order, including a subpoena or other form of compulsory legal process issued by a court or governmental entity. A party receiving Confidential Information may also disclose the Confidential Information to its employees, consultants or contractors in order to perform services or work solely and exclusively for the Project, provided those employees, consultants and contractors are subject to the restrictions on the disclosure and use of Confidential Information as set forth in this Contract.

19.11 *Open Records Act/Texas Public Information Act Requests.*

The Contractor recognizes that this Project is publicly owned and the Owner is subject to the disclosure requirements of the Texas Public Information Act ("Act"). As part of its obligations within the Contract Documents, the Contractor agrees, at no additional cost to the Owner, to cooperate with the Owner for any particular needs or obligations arising out of the Owner's obligations under the Act. This acknowledgement and obligation are in addition to and complimentary to the Owner's audit rights in the General Conditions. Additionally, notwithstanding this section or any other language of this Agreement, Contractor acknowledges that Owner is subject to the Texas Public Information Act ("Act") and Owner will comply with the Act. Owner will not be liable for disclosure of information pursuant to the Act or under court order.

19.12 *Contracting Information.*

Contractor must preserve all contracting information related to this Agreement as provided by the records retention schedule requirements applicable to the Owner for the duration of this Agreement. Contractor will promptly provide the Owner any contracting information related to this Agreement that is in the custody or possession of the Contractor on request of the Owner. On completion of this Agreement, Contractor will either provide at no cost to the Owner all contracting information related to this Agreement that is in the custody or possession of the Contractor or preserve the contracting information related to this Agreement as provided by the records retention requirements applicable to the Owner.

19.13 *TERMINATION FOR FAILURE TO COMPLY WITH SUBCHAPTER J, CHAPTER 552, GOVERNMENT CODE.*

The requirements of subchapter J, Chapter 552, Government Code, may apply to this Agreement and the CONTRACTOR or vendor agrees that the Agreement can be terminated if the contractor or vendor knowingly or intentionally fails to comply with a requirement of that subchapter.

19.14 *Exhibits.*

A. The following exhibits (“Exhibits”) are specifically made part of, and incorporated by reference into, this Agreement:

Exhibit 9.01	GMP Proposal or Initial GMP Proposal
Exhibit 19.01(D)	Good Faith Efforts to Obtain Minority Participation in the Project
Exhibit 19.01(H)	Project Wage Rates
Exhibit 19.06	Contractor’s Insurance Requirements

**IN WITNESS WHEREOF**, intending to be bound, the Parties have entered into this Agreement as of the Effective Date of the Agreement.

**CONTRACTOR:**

\_\_\_\_\_

By:\_\_\_\_\_

**OWNER:**

**EL PASO WATER UTILITIES – PUBLIC SERVICE BOARD**

\_\_\_\_\_  
John E. Balliew  
President/CEO

**APPROVED AS TO FORM:**

\_\_\_\_\_  
Sol M. Cortez  
Deputy General Counsel

**APPROVED AS TO CONTENT:**

\_\_\_\_\_  
Irazema S. Rojas  
Interim Chief Technical Officer

# GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

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SAMPLE

# GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

## ARTICLE 1—DEFINITIONS AND TERMINOLOGY

### 1.01 *Defined Terms*

- A. Wherever used in the Contract Documents, a term printed with initial capital letters, including the term's singular and plural forms, will have the meaning indicated in the definitions below. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.
1. *Affiliate* – Means, with respect to any particular company or entity, a company or entity that: (a) owns and controls, directly or indirectly, such company or entity; (b) is owned and controlled, directly or indirectly, by such company or entity; or (c) is owned and controlled, directly or indirectly, by the same company or entity that owns and controls such company or entity. The term “control” for purposes of this definition means: (i) ownership, directly or indirectly, of fifty percent (50%) or more of the issued voting shares of a company or entity or ownership of equivalent rights to determine the decisions of such company or entity; or (ii) having the right to appoint at least fifty percent (50%) of the members of the board of directors or equivalent governing body of such company or entity.
  2. *Agreement*—The written instrument, executed by Owner and Contractor, that sets forth the GMP and Contract Times, identifies the parties and the Engineer, and designates the specific items that are Contract Documents.
  3. *Allowance Payment Item* – If applicable, those items of Work set forth in the Agreement.
  4. *Allowance Payment Value* – If applicable, those monetary values for Allowance Payment Items set forth in the Agreement.
  5. *Application for Payment*—The document prepared by Contractor, in a form acceptable to Engineer, to request progress or Final Payment, and which is to be accompanied by such supporting documentation as is required by the Contract Documents.
  6. *Books and Records* – All documents (whether paper, electronic, or other media) and electronically stored information, including, but not limited to, any and all books, correspondence, receipts, vouchers, estimates, records, contracts, cost data, schedules, subcontracts, schedules, job cost reports, and other data, including computations and projections, of Contractor related to bidding, negotiating, pricing, or performing the Preconstruction Services and/or Work.
  7. *Books and Records Period* – That period starting on the Effective Date of Contract and ending at the later of four (4) years after Final Payment, provided, however, that if litigation, a claim, or an audit is in process, or if audit findings are not resolved, such Books and Records Period shall be extended until the later of the final conclusion of the litigation, claim, audit, or audit finding resolution.

8. *Change Order*—A document which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work or an adjustment in the GMP or the Contract Times, or other revision to the Contract, issued on or after the Effective Date of the Contract.
9. *Change Proposal*—A written request by Contractor, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment in the GMP or Contract Times; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; challenging a set-off against payments due; or seeking other relief with respect to the terms of the Contract.
10. *Claim*
  - a. A demand or assertion by Contractor directly to Owner, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment of the GMP, Contract Price or Contract Times; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; contesting Engineer's decision regarding a Change Proposal; seeking resolution of a contractual issue that Engineer has declined to address; or seeking other relief with respect to the terms of the Contract.
  - b. A demand or assertion by Contractor directly to Owner, duly submitted in compliance with the procedural requirements set forth herein, contesting Engineer's decision regarding a Change Proposal, or seeking resolution of a contractual issue that Engineer has declined to address.
  - c. A demand or assertion by Owner or Contractor, duly submitted in compliance with the procedural requirements set forth herein, made pursuant to Paragraph 12.01.A.4, concerning disputes arising after Engineer has issued a recommendation of Final Payment.
  - d. A demand for money or services by a third party is not a Claim.
11. *Constituent of Concern*—Asbestos, petroleum, radioactive materials, polychlorinated biphenyls (PCBs), lead-based paint (as defined by the HUD/EPA standard), hazardous waste, and any substance, product, waste, or other material of any nature whatsoever that is or becomes listed, regulated, or addressed pursuant to Laws and Regulations regulating, relating to, or imposing liability or standards of conduct concerning, any hazardous, toxic, or dangerous waste, substance, or material.
12. *Confidential Information* – Has the meaning set forth in the Agreement.
13. *Contingency* – Has the meaning set forth in the Agreement.
14. *Construction Documents* – Those Drawings and Specifications signed and sealed by Engineer and to be used by Contractor in performing the Work.
15. *Contract*—The entire and integrated written contract between Owner and Contractor concerning the Work.
16. *Contract Documents*—Those items so designated in the Agreement, and which together comprise the Contract.

17. *Contract Price*—The money that Owner has agreed to pay Contractor for completion of the Work in accordance with the Contract Documents, as defined in the Agreement.
18. *Contract Times*—The Scheduled Substantial Completion Date, Scheduled Final Completion Date, and, if applicable, the completion dates set forth in the Agreement by which Contractor shall achieve milestones.
19. *Contractor*—The entity identified as “Contractor” in the Agreement.
20. *Contractor-Related Entity* – Subcontractors, Sub-Subcontractors, Suppliers and anyone for whose acts any of them may be legally or contractually responsible.
21. *Contractor’s Fee* – Has the meaning set forth in the Agreement.
22. *Contractor’s General Conditions* – Has the meaning set forth in the Agreement.
23. *Cost of the Work*—Has the meaning set forth in the Agreement.
24. *Drawings*—The part of the Contract that graphically shows the scope, extent, and character of the Work to be performed by Contractor.
25. *Effective Date of the Contract*—The date, indicated in the Agreement, on which the Contract becomes effective.
26. *Electronic Document*—Any Project-related correspondence, attachments to correspondence, data, documents, drawings, information, or graphics, including but not limited to Shop Drawings and other Submittals, that are in an electronic or digital format.
27. *Electronic Means*—Electronic mail (email), upload/download from a secure Project website, or other communications methods that allow: (a) the transmission or communication of Electronic Documents; (b) the documentation of transmissions, including sending and receipt; (c) printing of the transmitted Electronic Document by the recipient; (d) the storage and archiving of the Electronic Document by sender and recipient; and (e) the use by recipient of the Electronic Document for purposes permitted by this Contract. Electronic Means does not include the use of text messaging, or of Facebook, Twitter, Instagram, or similar social media services for transmission of Electronic Documents.
28. *Engineer*—The individual or entity named as such in the Agreement.
29. *Equipment and/or Material* – All of the equipment, materials, machinery, apparatus, structures, supplies and other goods required by the Contract Documents to complete the Work and to be incorporated into the Project or provided to Owner. The term “Equipment and/or Materials” shall not be construed to include any construction equipment, supplies, materials, apparatus or tools owned by Contractor or any Contractor-Related Entity that are used to complete the Work but are not contemplated under the Contract Documents to become incorporated into the Project or to be provided to Owner.
30. *Field Order*—A written order issued by Engineer which requires minor changes in the Work but does not change the GMP or the Contract Times.
31. *Final Completion* – The event set forth in Paragraph 15.06.D below.
32. *Final Payment* – Has the meaning set forth in Paragraph 15.06 below.
33. *Guaranteed Maximum Price (GMP)* – Has the meaning set forth in of the Agreement.

34. *GMP Proposal* – That document attached as an Exhibit of the Agreement.
35. *GMP Proposal Design Documents* – Those design documents referenced as such in the GMP Proposal.
36. *Governmental Approval* – Any authorization, consent, approval, license, lease, ruling, permit, certification, exemption, or registration by or with any Governmental Unit.
37. *Governmental Unit* – Any national, state or local government, any political subdivision thereof, or any governmental, quasi-governmental, judicial, public or statutory instrumentality, administrative agency, authority, body or other person and/or entity having jurisdiction over the Site, performance of the Work, the Project or the Parties.
38. *Hazardous Environmental Condition*—The presence at the Site of Constituents of Concern in such quantities or circumstances that may present a danger to persons or property exposed thereto.
  - a. The presence at the Site of materials that are necessary for the execution of the Work, or that are to be incorporated into the Work, and that are controlled and contained pursuant to industry practices, Laws and Regulations, and the requirements of the Contract, is not a Hazardous Environmental Condition.
  - b. The presence of Constituents of Concern that are to be removed or remediated as part of the Work is not a Hazardous Environmental Condition.
  - c. The presence of Constituents of Concern as part of the routine, anticipated, and obvious working conditions at the Site, is not a Hazardous Environmental Condition.
39. *Health and Safety Plan* – the document referenced as such in the GMP Proposal.
40. *Laws and Regulations; Laws or Regulations*—Any and all applicable federal, state and local laws, codes, ordinances, rules, statutes, regulations, orders and decrees, and other requirements of any Governmental Unit, including, without limitation, any interpretation of such items by the applicable Governmental Unit.
41. *Liens*—Charges, security interests, or encumbrances upon Contract-related funds, real property, or personal property.
42. *Milestone*— Those elements of the Work set forth in the Agreement if applicable.
43. *Non-Reimbursable Costs* – Those costs set forth in Agreement.
44. *Notice to Proceed*—A written notice by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work.
45. *Open Book Basis* – Means allowing Owner to review all underlying assumptions, records, stand-alone Subcontractor and Supplier quotes, and other data associated with each element of pricing, or any adjustment thereto, including assumptions as to Costs of the Work, schedule, composition of equipment, equipment rates, labor rates and burdens, production rates, estimating factors, contingency and indirect costs, risk pricing, inflation and deflation rates, profit, home office overhead rates, fees, charges, levies, incentives, and other items reasonably required by Owner to satisfy itself as to the reasonableness and accuracy of the amounts proposed by Contractor.

46. *Owner*— El Paso Water Utilities – Public Service Board, a component of the City of El Paso, Texas.
47. *Owner Indemnitee* – Each of Owner and Engineer and, with respect to each of the foregoing, each of its respective representatives, officers, employees, members or other constituent entities, authorized agents, and other duly authorized representatives.
48. *Party or Parties* – Owner or Contractor singularly, and Owner and Contractor in plural.
49. *Plant* – means the Roberto R. Bustamante Wastewater Treatment Plant.
50. *Preconstruction Services* – Those services performed by Contractor under the Preconstruction Services Agreement.
51. *Preconstruction Services Agreement* – That agreement referenced in Preamble to the Agreement.
52. *Progress Schedule*—A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising Contractor’s plan to accomplish the Work within the Contract Times.
53. *Project*—The project identified in the Agreement.
54. *Project Contingency*— Has the meaning set forth in the Agreement.
55. *Resident Project Representative*—The authorized representative of Engineer assigned to assist Engineer at the Site. As used herein, the term Resident Project Representative (RPR) includes any assistants or field staff of Resident Project Representative.
56. *Samples*—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and that establish the standards by which such portion of the Work will be judged.
57. *Savings* -- Has the meaning set forth in the Agreement.
58. *Schedule of Submittals*—A schedule, prepared and maintained by Contractor, of required submittals and the time requirements for Engineer’s review of the submittals.
59. *Schedule of Values*—A schedule, prepared and maintained by Contractor, allocating portions of the GMP to various portions of the Work and used as the basis for reviewing Contractor’s Applications for Payment.
60. *Scheduled Final Completion Date* – Has the meaning set forth in the Agreement.
61. *Scheduled Substantial Completion Date* – Has the meaning set forth in the Agreement.
62. *Self-Perform* – Work performed by employees of the Contractor or any of its Affiliates.
63. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information that are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work. Shop Drawings, whether approved or not, are not Drawings and are not Contract Documents.
64. *Site*— the area of the Plant upon which the Project is located, as set forth in the Construction Documents.



65. *Specifications*—The part of the Contract that consists of written requirements for materials, equipment, systems, standards, and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable to the Work.
66. *Subcontractor*—An individual or entity having a direct contract with Contractor as an independent contractor for the performance of a part of the Work, and shall include materialmen and Suppliers.
67. *Sub-Subcontractor* – Any person or entity having a direct contract with a Subcontractor.
68. *Submittal*—A written or graphic document, prepared by or for Contractor, which the Contract Documents require Contractor to submit to Engineer, or that is indicated as a Submittal in the Schedule of Submittals accepted by Engineer. Submittals may include Shop Drawings and Samples; schedules; product data; Owner-delegated designs; sustainable design information; information on special procedures; testing plans; results of tests and evaluations, source quality-control testing and inspections, and field or Site quality-control testing and inspections; warranties and certifications; Suppliers’ instructions and reports; records of delivery of spare parts and tools; operations and maintenance data; Project photographic documentation; record documents; and other such documents required by the Contract Documents. Submittals, whether or not approved or accepted by Engineer, are not Contract Documents. Change Proposals, Change Orders, Claims, notices, Applications for Payment, and requests for interpretation or clarification are not Submittals.
69. *Substantial Completion*—The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms “substantially complete” and “substantially completed” as applied to all or part of the Work refer to Substantial Completion of such Work.
70. *Supplier*—A manufacturer, fabricator, supplier, distributor, or vendor having a direct contract with Contractor or any Contractor-Related Entity to provide Equipment and Materials, or construction equipment, supplies or other goods to be used in the performance of the Work but not incorporated into the Work.
71. *Technical Data*
- a. Those items expressly identified as Technical Data in the GMP Proposal, with respect to either: (1) existing subsurface conditions at or adjacent to the Site, or existing physical conditions at or adjacent to the Site including existing surface or subsurface structures (except Underground Facilities); or (2) Hazardous Environmental Conditions at the Site.
  - b. If no such express identifications of Technical Data have been made with respect to conditions at the Site, then Technical Data is defined, with respect to conditions at the Site under Paragraphs 5.03, 5.04, and 5.06, as the data contained in boring logs, recorded measurements of subsurface water levels, assessments of the condition of subsurface facilities, laboratory test results, and other factual, objective information regarding conditions at the Site that are set forth in any geotechnical, environmental, or other Site or facilities conditions report prepared for the Project and made available to Contractor.

- c. Information and data regarding the presence or location of Underground Facilities are not intended to be categorized, identified, or defined as Technical Data, and instead Underground Facilities are shown or indicated on the Drawings.
72. *Underground Facilities*—All active or not-in-service underground lines, pipelines, conduits, ducts, encasements, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or systems at the Site, including but not limited to those facilities or systems that produce, transmit, distribute, or convey telephone or other communications, cable television, fiber optic transmissions, power, electricity, light, heat, gases, oil, crude oil products, liquid petroleum products, water, steam, waste, wastewater, storm water, other liquids or chemicals, or traffic or other control systems. An abandoned facility or system is not an Underground Facility.
73. *Work*—The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction; furnishing, installing, and incorporating all Equipment and Materials into such construction; and may include related services such as testing, start-up, and commissioning, all as required by the Contract Documents.
74. *Work Change Directive*—A written directive to Contractor issued on or after the Effective Date of the Contract, signed by Owner and recommended by Engineer, ordering an addition, deletion, or revision in the Work.
75. *Work Product* – All cost estimates, schedules, bid packages, studies, data, models, documents, photographs, videos, and work developed or produced by or on behalf of Contractor, whether in hard-copy, digital or electronic data, or any other medium, and whether completed or not completed, including all Work Product developed or produced by or on behalf of Contractor under the Preconstruction Agreement.
76. *Unit Price Work*—Work to be paid for on the basis of unit prices.

## 1.02 Terminology

- A. The words and terms discussed in Paragraphs 1.02.B, C, D, and E are not defined terms that require initial capital letters, but, when used in the Contract Documents, have the indicated meaning.
- B. *Intent of Certain Terms or Adjectives*: The Contract Documents include the terms “as allowed,” “as approved,” “as ordered,” “as directed” or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives “reasonable,” “suitable,” “acceptable,” “proper,” “satisfactory,” or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action, or determination will be solely to evaluate, in general, the Work for compliance with the information in the Contract Documents and with the design concept of the Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility contrary to the provisions of Article 10 or any other provision of the Contract Documents.

- C. *Day*: The word “day” means a calendar day of 24 hours measured from midnight to the next midnight.
- D. *Defective*: The word “defective,” when modifying the word “Work,” refers to Work that is unsatisfactory, faulty, or deficient in that it:
  - 1. does not conform to the Contract Documents;
  - 2. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or
  - 3. has been damaged prior to Engineer’s recommendation of Final Payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 15.03 or Paragraph 15.04).
- E. *Furnish, Install, Perform, Provide*
  - 1. The word “furnish,” when used in connection with services, Equipment and Materials, means to supply and deliver said services, Equipment or Materials to the Site (or some other specified location) ready for use or installation and in usable or operable condition.
  - 2. The word “install,” when used in connection with services, Equipment and Materials, means to put into use or place in final position said services, Equipment or Materials, complete and ready for intended use.
  - 3. The words “perform” or “provide,” when used in connection with services, Equipment and Materials, means to furnish and install said services, Equipment or Materials, complete and ready for intended use.
  - 4. If the Contract Documents establish an obligation of Contractor with respect to specific services, Equipment or Materials, but do not expressly use any of the four words “furnish,” “install,” “perform,” or “provide,” then Contractor shall furnish and install said services, Equipment or Materials, complete and ready for intended use.
- F. *GMP or Contract Times*: References to a change in “GMP or Contract Times” or “Contract Times or GMP” or similar, indicate that such change applies to: (1) the GMP; (2) Contract Times; or (3) both the GMP and Contract Times, as warranted, even if the term “or both” is not expressed.
- G. Unless stated otherwise in the Contract Documents, words or phrases that have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

## **ARTICLE 2—PRELIMINARY MATTERS**

### **2.01 *Delivery of Performance and Payment Bonds; Evidence of Insurance***

- A. *Performance and Payment Bonds*: When Contractor delivers the signed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner the performance bond and payment bond.
- B. *Evidence of Contractor’s Insurance*: When Contractor delivers the signed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner, with copies to each additional insured (as identified in Paragraph 6.02.K below), the certificates, endorsements, and other evidence of insurance required to be provided by Contractor in accordance with Article 6.

2.02 *Copies of Documents*

- A. Owner shall furnish to Contractor four printed copies of the Contract (including one fully signed counterpart of the Agreement), and one copy in electronic portable document format (PDF). Additional printed copies will be furnished upon request at the cost of reproduction.
- B. Owner shall maintain and safeguard at least one original printed record version of the Contract, including Drawings and Specifications signed and sealed by Engineer and other design professionals. Owner shall make such original printed record version of the Contract available to Contractor for review. Owner may delegate the responsibilities under this provision to Engineer.

2.03 *Preconstruction Conference; Designation of Authorized Representatives*

- A. Before any Work at the Site is started, a conference attended by Owner, Contractor, Engineer, and others as appropriate will be held to establish a working understanding among the parties as to the Work, and to discuss procedures for handling Shop Drawings, Samples, and other Submittals, processing Applications for Payment, electronic or digital transmittals, and maintaining required records.
- B. At this conference Owner and Contractor each shall designate, in writing, a specific individual to act as its authorized representative with respect to the services and responsibilities under the Contract. Such individuals shall have the authority to transmit and receive information, render decisions relative to the Contract, and otherwise act on behalf of each respective party.

2.04 *Key Personnel*

- A. Contractor's Key Personnel are set forth in Contractor's GMP Proposal. Contractor acknowledges that the qualifications of its Key Personnel were an essential element to Contractor being awarded the Agreement, and further acknowledges the importance of its Key Personnel in successfully performing the Work. Absent separation of employment, none of the Key Personnel may be withdrawn from the Project without prior written approval of Owner, with it being understood and agreed that Contractor will provide Owner with at least thirty (30) days written notice of any request to withdraw any Key Personnel. Any replacement personnel shall have equivalent skill, experience and reputation. Contractor shall remove or replace, or have removed or replaced, any personnel performing the work if Owner has a reasonable objection to such individual.

2.05 *Electronic Transmittals*

- A. Except as otherwise stated elsewhere in the Contract, the Owner, Engineer, and Contractor may send, and shall accept, Electronic Documents transmitted by Electronic Means.
- B. If the Contract does not establish protocols for Electronic Means, then Owner, Engineer, and Contractor shall jointly develop such protocols.
- C. Subject to any governing protocols for Electronic Means, when transmitting Electronic Documents by Electronic Means, the transmitting party makes no representations as to long-term compatibility, usability, or readability of the Electronic Documents resulting from the recipient's use of software application packages, operating systems, or computer hardware differing from those used in the drafting or transmittal of the Electronic Documents.

## ARTICLE 3—CONTRACT DOCUMENTS: INTENT, REQUIREMENTS, REUSE

### 3.01 *Intent*

- A. The Contract Documents are complementary; what is required by one Contract Document is as binding as if required by all. In the case of direct, irresolvable conflicts between or among Contract Documents, the conflict shall be resolved through the order of precedence set forth in the Agreement.
- B. It is the intent of the Contract Documents to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents.
- C. Unless otherwise stated in the Contract Documents, if there is a discrepancy between the electronic versions of the Contract Documents (including any printed copies derived from such electronic versions) and the printed record version, the printed record version will govern.
- D. The Contract supersedes prior negotiations, representations, and agreements, whether written or oral, including but not limited to the Preconstruction Agreement.
- E. Engineer will issue clarifications and interpretations of the Contract Documents as provided herein.
- F. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation will be deemed stricken, and all remaining provisions will continue to be valid and binding upon Owner and Contractor, which agree that the Contract Documents will be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.
- G. Nothing in the Contract Documents creates:
  1. any contractual relationship between Owner or Engineer and any Contractor-Related Entity; or
  2. any obligation on the part of Owner or Engineer to pay or to see to the payment of any money due any Contractor-Related Entity, except as may otherwise be required by Laws and Regulations.

### 3.02 *Reference Standards*

- A. *Standards Specifications, Codes, Laws and Regulations*
  1. Reference in the Contract Documents to standard specifications, manuals, reference standards, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, means the standard specification, manual, reference standard, code, or Laws or Regulations in effect on the Effective Date of the Contract, except as may be otherwise specifically stated in the Contract Documents.
  2. No provision of any such standard specification, manual, reference standard, or code, and no instruction of a Supplier, will be effective to change the duties or responsibilities of Owner, Contractor, or Engineer from those set forth in the part of the Contract Documents prepared by or for Engineer. No such provision or instruction shall be effective to assign to Owner or Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility

inconsistent with the provisions of the part of the Contract Documents prepared by or for Engineer.

### 3.03 *Reporting and Resolving Discrepancies*

#### A. *Reporting Discrepancies*

1. *Contractor's Verification of Figures and Field Measurements:* Before undertaking each part of the Work, Contractor shall carefully study the Contract Documents, and check and verify pertinent figures and dimensions therein, particularly with respect to applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy that Contractor discovers, or has actual knowledge of, and shall not proceed with any Work affected thereby until the conflict, error, ambiguity, or discrepancy is resolved by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract issued pursuant to Paragraph 11.01.
2. *Contractor's Review of Contract Documents:* If, before or during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents, or between the Contract Documents and (a) any applicable Law or Regulation, (b) actual field conditions, (c) any standard specification, manual, reference standard, or code, or (d) any instruction of any Supplier, then Contractor shall promptly report it to Engineer in writing. Contractor shall not proceed with the Work affected thereby (except in an emergency as required by Paragraph 7.15) until the conflict, error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract issued pursuant to Paragraph 11.01.
3. Contractor shall not be liable to Owner or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Contractor had actual knowledge thereof.

#### B. *Resolving Discrepancies*

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the part of the Contract Documents prepared by or for Engineer take precedence in resolving any conflict, error, ambiguity, or discrepancy between such provisions of the Contract Documents and:
  - a. the provisions of any standard specification, manual, reference standard, or code, or the instruction of any Supplier (whether or not specifically incorporated by reference as a Contract Document); or
  - b. the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

### 3.04 *Requirements of the Contract Documents*

- A. During the performance of the Work and until Final Payment, Contractor shall submit to the Engineer in writing all matters in question concerning the requirements of the Contract Documents (sometimes referred to as requests for information or interpretation—RFIs), or relating to the acceptability of the Work under the Contract Documents, as soon as possible after such matters arise. Engineer will be the initial interpreter of the requirements of the Contract Documents, and judge of the acceptability of the Work.

- B. Engineer will, within fourteen (14) days of Contractor's submission, render a written clarification, interpretation, or decision on the issue submitted, or initiate an amendment or supplement to the Contract Documents. Engineer's written clarification, interpretation, or decision will be final and binding on Contractor, unless it appeals by submitting a Change Proposal, and on Owner, unless it appeals by filing a Claim.
- C. If a submitted matter in question concerns terms and conditions of the Contract Documents that do not involve: (1) the performance or acceptability of the Work under the Contract Documents; (2) the design (as set forth in the Drawings, Specifications, or otherwise); or (3) other engineering or technical matters, then Engineer will promptly notify Owner and Contractor in writing that Engineer is unable to provide a decision or interpretation. If Owner and Contractor are unable to agree on resolution of such a matter in question, either party may pursue resolution as provided in Article 12.

### 3.05 *Reuse of Documents*

- A. Contractor and its Subcontractors and Suppliers shall not:
  - 1. have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or its consultants, including electronic media versions, or reuse any such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Owner and Engineer and specific written verification or adaptation by Engineer; or
  - 2. have or acquire any title or ownership rights in any other Contract Documents, reuse any such Contract Documents for any purpose without Owner's express written consent, or violate any copyrights pertaining to such Contract Documents.
- B. The prohibitions of this Paragraph 3.05 will survive Final Payment, or termination of the Contract. Nothing herein precludes Contractor from retaining copies of the Contract Documents for record purposes.

## **ARTICLE 4—COMMENCEMENT AND PROGRESS OF THE WORK**

### 4.01 *Notice to Proceed*

- A. A Notice to Proceed may be given at any time within 30 days after the Effective Date of the Contract.

### 4.02 *Starting the Work*

- A. Contractor shall start to perform the Work on the date set forth in the Notice to Proceed. No Work may be done at the Site prior to such date.

### 4.03 *Reference Points*

- A. Owner shall provide engineering surveys to establish reference points for construction which in Engineer's judgment are necessary to enable Contractor to proceed with the Work. Contractor shall be responsible for laying out the Work, shall protect and preserve the established reference points and property monuments, and shall make no changes or relocations without the prior written approval of Owner. Contractor shall report to Engineer whenever any reference point or property monument is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for

the accurate replacement or relocation of such reference points or property monuments by professionally qualified personnel.

#### 4.04 *Progress Schedule*

- A. Contractor shall adhere to the Progress Schedule set forth in the GMP Proposal, as it may be adjusted from time to time as provided below.
  - 1. Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.05) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times.
  - 2. Proposed adjustments in the Progress Schedule that will change the Contract Times must be submitted in accordance with the requirements of Article 11.
- B. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with Owner. No Work will be delayed or postponed pending resolution of any disputes or disagreements, or during any appeal process, except as permitted by Paragraph 16.04, or as Owner and Contractor may otherwise agree in writing.

#### 4.05 *Delays in Contractor's Progress*

- A. If Owner, Engineer, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in the GMP or Contract Times. The equitable adjustment in the GMP will be for the categories of costs identified in the Agreement.
- B. Contractor shall not be entitled to an adjustment in the GMP or Contract Times for delay, disruption, or interference caused by or within the control of Contractor or any Contractor-Related Entity.
- C. If Contractor's performance or progress is delayed, disrupted, or interfered with by unanticipated causes not the fault of and beyond the control of Owner, Contractor, and those for which they are responsible (including Contractor-Related Entities), then Contractor shall be entitled to an equitable adjustment in Contract Times. Such an adjustment will be Contractor's sole and exclusive remedy for the delays, disruption, and interference described in this paragraph. Causes of delay, disruption, or interference that may give rise to an adjustment in Contract Times under this paragraph include but are not limited to the following:
  - 1. Severe and unavoidable natural catastrophes such as fires, floods, epidemics, and earthquakes;
  - 2. Abnormal weather conditions;
  - 3. Acts or failures to act of third-party utility owners or other third-party entities (other than those third-party utility owners or other third-party entities performing other work at or adjacent to the Site as arranged by or under contract with Owner, as contemplated in Article 8); and
  - 4. Acts of war or terrorism.



- D. Contractor's entitlement to an adjustment of the Contract Times or the GMP is limited as follows:
1. Contractor's entitlement to an adjustment of the Contract Times is conditioned on the delay, disruption, or interference adversely affecting an activity on the critical path to completion of the Work, as of the time of the delay, disruption, or interference.
  2. Contractor shall not be entitled to an adjustment in the GMP for any delay, disruption, or interference if such delay is concurrent with a delay, disruption, or interference caused by or within the control of Contractor. Such a concurrent delay by Contractor shall not preclude an adjustment of Contract Times to which Contractor is otherwise entitled.
  2. Adjustments of the Contract Times are subject to the provisions of Article 11.
- E. Each Contractor request or Change Proposal seeking an increase in the Contract Times or the GMP must be supplemented by supporting data that sets forth in detail the following:
1. The circumstances that form the basis for the requested adjustment;
  2. The date upon which each cause of delay, disruption, or interference began to affect the progress of the Work;
  3. The date upon which each cause of delay, disruption, or interference ceased to affect the progress of the Work;
  4. The number of days' increase in Contract Times claimed as a consequence of each such cause of delay, disruption, or interference; and
  5. The impact on the GMP, in accordance with the provisions of Paragraph 11.07.
- Contractor shall also furnish such additional supporting documentation as Owner or Engineer may require including, where appropriate, a revised progress schedule indicating all the activities affected by the delay, disruption, or interference, and an explanation of the effect of the delay, disruption, or interference on the critical path to completion of the Work.
- F. Delays, disruption, and interference to the performance or progress of the Work resulting from the existence of a differing subsurface or physical condition, an Underground Facility that was not shown or indicated by the Contract Documents, or not shown or indicated with reasonable accuracy, and those resulting from Hazardous Environmental Conditions, are governed by Article 5, together with the provisions of Paragraphs 4.05.D and 4.05.E.
- G. Paragraph 8.03 addresses delays, disruption, and interference to the performance or progress of the Work resulting from the performance of certain other work at or adjacent to the Site.

## **ARTICLE 5—SITE; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS**

### **5.01 *Availability of Lands***

- A. Owner shall furnish the Site. Owner shall notify Contractor in writing of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work.
- B. Upon reasonable written request, Owner shall furnish Contractor with a current statement of record legal title and legal description of the lands upon which permanent improvements are

to be made and Owner's interest therein as necessary for giving notice of or filing a mechanic's or construction lien against such lands in accordance with applicable Laws and Regulations.

- C. Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of Equipment and Materials.

## 5.02 *Use of Site and Other Areas*

### A. *Limitation on Use of Site and Other Areas*

- 1. Contractor shall confine construction equipment, temporary construction facilities, the storage of Equipment and Materials, and the operations of workers to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and such other adjacent areas with construction equipment or Equipment or Materials. Contractor shall assume full responsibility for: (a) damage to the Site; (b) damage to any such other adjacent areas used for Contractor's operations; (c) damage to any other adjacent land or areas, or to improvements, structures, utilities, or similar facilities located at such adjacent lands or areas; and (d) for injuries and losses sustained by the owners or occupants of any such land or areas; provided that such damage or injuries result from the performance of the Work or from other actions or conduct of the Contractor or those for which Contractor is responsible.

- 2. If a damage or injury claim is made by the owner or occupant of any such land or area because of the performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible, Contractor shall: (a) take immediate corrective or remedial action as required by Paragraph 7.13, or otherwise; (b) promptly attempt to settle the claim as to all parties through negotiations with such owner or occupant, or otherwise resolve the claim by arbitration or other dispute resolution proceeding, or in a court of competent jurisdiction; and (c) **TO THE FULLEST EXTENT PERMITTED BY LAWS AND REGULATIONS, INDEMNIFY AND HOLD HARMLESS THE OWNER INDEMNITEES FROM AND AGAINST ANY SUCH CLAIM, AND AGAINST ALL COSTS, LOSSES, AND DAMAGES (INCLUDING BUT NOT LIMITED TO ALL FEES AND CHARGES OF ENGINEERS, ARCHITECTS, ATTORNEYS, AND OTHER PROFESSIONALS AND ALL COURT OR ARBITRATION OR OTHER DISPUTE RESOLUTION COSTS) ARISING OUT OF OR RELATING TO ANY CLAIM OR ACTION, LEGAL OR EQUITABLE, BROUGHT BY ANY SUCH OWNER OR OCCUPANT AGAINST THE OWNER INDEMNITEES TO THE EXTENT CAUSED DIRECTLY OR INDIRECTLY, IN WHOLE OR IN PART BY, OR BASED UPON, CONTRACTOR'S PERFORMANCE OF THE WORK, OR BECAUSE OF OTHER ACTIONS OR CONDUCT OF CONTRACTOR OR ANY CONTRACTOR-RELATED ENTITY.**

- B. *Removal of Debris During Performance of the Work:* During the progress of the Work the Contractor shall keep the Site and other adjacent areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris will conform to applicable Laws and Regulations.

- C. *Cleaning:* Prior to Substantial Completion of the Work Contractor shall clean the Site and the Work and make it ready for utilization by Owner. At the completion of the Work Contractor shall remove from the Site and adjacent areas all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.

- D. *Loading of Structures*: Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent structures or land to stresses or pressures that will endanger them.

#### 5.03 *Subsurface and Physical Conditions*

- A. *Reports and Drawings*: The GMP Proposal identifies:
  - 1. Those reports of explorations and tests of subsurface conditions at or adjacent to the Site that contain Technical Data;
  - 2. Those drawings of existing physical conditions at or adjacent to the Site, including those drawings depicting existing surface or subsurface structures at or adjacent to the Site (except Underground Facilities), that contain Technical Data; and
  - 3. Technical Data contained in such reports and drawings.
- B. *Underground Facilities*: Underground Facilities are shown or indicated on the Drawings, pursuant to Paragraph 5.05, and not in the drawings referred to in Paragraph 5.03.A. Information and data regarding the presence or location of Underground Facilities are not intended to be categorized, identified, or defined as Technical Data.
- C. *Reliance by Contractor on Technical Data*: Contractor may reasonably rely upon the accuracy of the Technical Data expressly identified in the GMP Proposal.
- D. *Limitations of Other Data and Documents*: Except for reliance on Technical Data as set forth in Paragraph C above, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, with respect to:
  - 1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto;
  - 2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings;
  - 3. the contents of other Site-related documents made available to Contractor, such as record drawings from other projects at or adjacent to the Site, or Owner's archival documents concerning the Site; or
  - 4. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions, or information.

#### 5.04 *Differing Subsurface or Physical Conditions*

- A. *Notice by Contractor*: If Contractor believes that any subsurface or physical condition that is uncovered or revealed at the Site:
  - 1. is of such a nature as to establish that any Technical Data on which Contractor is entitled to rely as provided in Paragraph 5.03 is materially inaccurate;
  - 2. is of such a nature as to require a change in the Drawings or Specifications;
  - 3. differs materially from that shown or indicated in the Contract Documents; or

4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except with respect to an emergency) until receipt of a written statement permitting Contractor to do so.

- B. *Engineer's Review:* After receipt of written notice as required by the preceding paragraph, Engineer will promptly review the subsurface or physical condition in question; determine whether it is necessary for Owner to obtain additional exploration or tests with respect to the condition; conclude whether the condition falls within any one or more of the differing site condition categories in Paragraph 5.04.A; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the subsurface or physical condition in question and the need for any change in the Drawings or Specifications; and advise Owner in writing of Engineer's findings, conclusions, and recommendations.
- C. *Owner's Statement to Contractor Regarding Site Condition:* After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the subsurface or physical condition in question, addressing the resumption of Work in connection with such condition, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations, in whole or in part.
- D. *Early Resumption of Work:* If at any time Engineer determines that Work in connection with the subsurface or physical condition in question may resume prior to completion of Engineer's review or Owner's issuance of its statement to Contractor, because the condition in question has been adequately documented, and analyzed on a preliminary basis, then the Engineer may at its discretion instruct Contractor to resume such Work.
- E. *Possible Price and Times Adjustments*
  1. Contractor shall be entitled to an equitable adjustment in the GMP or Contract Times, to the extent that the existence of a differing subsurface or physical condition, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:
    - a. Such condition must fall within any one or more of the categories described in Paragraph 5.04.A;
    - b. With respect to Work that is paid for on a unit price basis, any adjustment in the GMP will be subject to the provisions of Paragraph 13.03; and,
    - c. Contractor's entitlement to an adjustment of the Contract Times is subject to the provisions of Paragraphs 4.05.D and 4.05.E.

2. Contractor shall not be entitled to any adjustment in the GMP or Contract Times with respect to a subsurface or physical condition if:
    - a. Contractor knew of the existence of such condition as of the Effective Date of the Contract;
    - b. The existence of such condition reasonably could have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas expressly required by the Contract Documents to be conducted by or for Contractor prior to the Effective Date of the Contract; or
    - c. Contractor failed to give the written notice required by Paragraph 5.04.A.
  3. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the GMP or Contract Times, then any such adjustment will be set forth in a Change Order.
  4. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the GMP or Contract Times, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the subsurface or physical condition in question.
- F. *Underground Facilities; Hazardous Environmental Conditions:* Paragraph 5.05 governs rights and responsibilities regarding the presence or location of Underground Facilities. Paragraph 5.06 governs rights and responsibilities regarding Hazardous Environmental Conditions. The provisions of Paragraphs 5.03 and 5.04 are not applicable to the presence or location of Underground Facilities, or to Hazardous Environmental Conditions.

5.05 *Underground Facilities*

- A. *Contractor's Responsibilities:* Unless it is otherwise expressly provided in the GMP Proposal, the cost of all of the following are included in the GMP, and Contractor shall have full responsibility for:
1. reviewing and checking all information and data regarding existing Underground Facilities at the Site;
  2. complying with applicable state and local utility damage prevention Laws and Regulations;
  3. verifying the actual location of those Underground Facilities shown or indicated in the Contract Documents as being within the area affected by the Work, by exposing such Underground Facilities during the course of construction;
  4. coordination of the Work with the owners (including Owner) of such Underground Facilities, during construction; and
  5. the safety and protection of all existing Underground Facilities at the Site, and repairing any damage thereto resulting from the Work.
- B. *Notice by Contractor:* If Contractor believes that an Underground Facility that is uncovered or revealed at the Site was not shown or indicated on the Drawings, or was not shown or indicated on the Drawings with reasonable accuracy, then Contractor shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), notify Owner and Engineer in writing regarding such Underground Facility.

C. *Engineer's Review*: Engineer will:

1. promptly review the Underground Facility and conclude whether such Underground Facility was not shown or indicated on the Drawings, or was not shown or indicated with reasonable accuracy;
2. identify and communicate with the owner of the Underground Facility; prepare recommendations to Owner (and if necessary issue any preliminary instructions to Contractor) regarding the Contractor's resumption of Work in connection with the Underground Facility in question;
3. obtain any pertinent cost or schedule information from Contractor; determine the extent, if any, to which a change is required in the Drawings or Specifications to reflect and document the consequences of the existence or location of the Underground Facility; and
4. advise Owner in writing of Engineer's findings, conclusions, and recommendations.

During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.

D. *Owner's Statement to Contractor Regarding Underground Facility*: After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the Underground Facility in question addressing the resumption of Work in connection with such Underground Facility, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations in whole or in part.

E. *Early Resumption of Work*: If at any time Engineer determines that Work in connection with the Underground Facility may resume prior to completion of Engineer's review or Owner's issuance of its statement to Contractor, because the Underground Facility in question and conditions affected by its presence have been adequately documented, and analyzed on a preliminary basis, then the Engineer may at its discretion instruct Contractor to resume such Work.

F. *Possible Price and Times Adjustments*

1. Contractor shall be entitled to an equitable adjustment in the GMP or Contract Times, to the extent that any existing Underground Facility at the Site that was not shown or indicated on the Drawings, or was not shown or indicated with reasonable accuracy, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:
  - a. With respect to Work that is paid for on a unit price basis, any adjustment in the GMP will be subject to the provisions of Paragraph 13.03;
  - b. Contractor's entitlement to an adjustment of the Contract Times is subject to the provisions of Paragraphs 4.05.D and 4.05.E; and
  - c. Contractor gave the notice required in Paragraph 5.05.B.
2. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the GMP or Contract Times, then any such adjustment will be set forth in a Change Order.

3. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the GMP or Contract Times, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the Underground Facility in question.
4. The information and data shown or indicated on the Drawings with respect to existing Underground Facilities at the Site is based on information and data (a) furnished by the owners of such Underground Facilities, or by others, (b) obtained from available records, or (c) gathered in an investigation conducted in accordance with the current edition of ASCE 38, Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data, by the American Society of Civil Engineers. If such information or data is incorrect or incomplete, Contractor's remedies are limited to those set forth in this Paragraph 5.05.F.

5.06 *Hazardous Environmental Conditions at Site*

- A. *Reports and Drawings:* The GMP Proposal identifies:
  1. those reports known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site;
  2. drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site; and
  3. Technical Data contained in such reports and drawings.
- B. *Reliance by Contractor on Technical Data Authorized:* Contractor may reasonably rely upon the accuracy of the Technical Data expressly identified in the GMP Proposal with respect to such reports and drawings. Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, with respect to:
  1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto;
  2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or
  3. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions or information.
- C. Where Owner has advised Contractor of known Constituents of Concern or Hazardous Environmental Conditions at the Site, these Constituents of Concern and Hazardous Environmental Conditions are part of the Work and Contractor shall take such action as is necessary, in accordance with applicable Laws and/or Regulations, to plan for and to remediate and render harmless all such Constituents of Concern and Hazardous Environmental Conditions. Remediation plans for such known Constituents of Concern and Hazardous Environmental Conditions shall be provided to the Owner for approval prior to undertaking the remediation.
- D. If Contractor encounters any unknown Hazardous Environmental Conditions at the Site, it shall stop Work immediately in the affected part of the Work to the extent required to avoid

any such safety or health hazard until it has taken such action as is necessary, in accordance with applicable Laws and/or Regulations, to protect the interests of any affected party. Contractor shall, immediately upon encountering any Hazardous Environmental Conditions at the Site, notify Owner and, if required by Laws and/or Regulations, assist Owner in providing notifications to all Governmental Units having jurisdiction over the Project or Site.

- E. Contractor, working with Owner, shall take all necessary measures required to ensure that Hazardous Environmental Conditions are remediated or rendered harmless in accordance with applicable Laws and/or Regulations. Contractor shall, as may be directed by Owner and prior to proceeding with any such work: (a) obtain all environmental site assessments of the affected property and submit copies of such assessments to Owner for its approval; (b) develop remediation plans for the Hazardous Environmental Conditions, subject to Owner's approval; and (c) obtain on Owner's behalf all applicable Governmental Approvals to implement such plans. During the period of any investigation and remediation efforts, Contractor shall take all necessary measures to isolate and contain such Hazardous Environmental Conditions from the unaffected parts of the Work, and shall continue the Work to the maximum extent possible on unaffected parts of the Work.
- F. Except for those Hazardous Environmental Conditions and Constituents of Concern set forth in Paragraph G below, Contractor will be entitled to submit a request for an adjustment to the Contract Price and/or Contract Times, in accordance with the requirements of Article 4 above and Article 11 below, to the extent Contractor's cost and/or time of performance have been adversely impacted by the presence, removal or remediation of unknown Hazardous Environmental Conditions.
- G. Notwithstanding anything to the contrary in this Paragraph 5.06, Contractor shall bear full responsibility for the handling, treatment, storage, removal, remediation, avoidance, or other appropriate action (if any), with respect to: (a) any Constituents of Concern or Hazardous Environmental Condition present at, on, in or under, or migrating and/or emanating to or from the Site, that were brought or caused to be brought on the Site due to the breach of contract, negligence, recklessness or willful misconduct of Contractor or any Contractor-Related Entity; (b) Constituents of Concern or Hazardous Environmental Conditions that are expressly provided in the Contract Documents to be part of the Work; and (c) the creation or exacerbation of any Hazardous Environmental Condition due to the breach of contract, negligence, recklessness or willful misconduct of Contractor or any Contractor-Related Entity. **TO THE FULLEST EXTENT PERMITTED BY LAWS AND/OR REGULATIONS, CONTRACTOR SHALL INDEMNIFY, DEFEND AND HOLD HARMLESS EACH OWNER INDEMNITEE FROM AND AGAINST ALL CLAIMS, LOSSES, DAMAGES, LIABILITIES AND EXPENSES, INCLUDING ATTORNEYS' FEES AND EXPENSES, ARISING OUT OF OR RESULTING FROM ITEMS (A), (B) AND/OR (C) ABOVE.**
- H. Nothing contained in this Paragraph 5.06 is intended to identify the Contractor as the generator of any pre-existing Constituents of Concern or Hazardous Environmental Condition, except as set forth in applicable Laws and/or Regulations.

## **ARTICLE 6—BONDS AND INSURANCE**

### *6.01 Performance, Payment, and Other Bonds*

- A. Contractor has, as of the Effective Date, furnished a performance bond and a payment bond, each in an amount at least equal to the GMP, as security for the faithful performance and



payment of Contractor's obligations under the Contract. These bonds must remain in effect until one year after the date when Final Payment becomes due or until completion of the correction period specified in Paragraph 15.08, whichever is later, except as provided otherwise by Laws or Regulations.

- B. If the surety on a bond furnished by Contractor is declared bankrupt or becomes insolvent, or the surety ceases to meet the requirements above, then Contractor shall promptly notify Owner and Engineer in writing and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which must comply with the bond and surety requirements that was applicable for the original surety.
- F. If Contractor has failed to obtain a required bond, Owner may exclude the Contractor from the Site and exercise Owner's termination rights under Article 16.
- G. Upon request to Owner from any Contractor-Related Entity claiming to have furnished labor, services, materials, or equipment used in the performance of the Work, Owner shall provide a copy of the payment bond to such person or entity.
- H. Upon request to Contractor from any Contractor-Related Entity claiming to have furnished labor, services, materials, or equipment used in the performance of the Work, Contractor shall provide a copy of the payment bond to such person or entity.

#### 6.02 *Insurance—General Provisions*

- A. Contractor shall obtain and maintain, at its own cost and expense, the insurance coverages specified in the Agreement, which insurance shall be in accordance with this Paragraph 6.02.
- B. All insurance required by this Paragraph 6.02 shall be from insurance companies that have at least an A.M. Best's Insurance Guide ("Best's Guide") Rating of A- and Financial Size Category of Class VII or better, according to the most current edition of the Best's Guide, and are an eligible, admitted and duly licensed insurer authorized to do business in the state of Texas.
- C. Contractor shall deliver to Owner, with copies to each additional insured identified in Paragraph 6.02.K below, the following:
  - 1. Certificates of insurance and endorsements establishing that Contractor has obtained and is maintaining the policies and coverages required hereunder, with the understanding that updated, compliant certificates of insurance and endorsements shall be delivered annually, at least ten (10) days prior to the expiration of any policy, to evidence renewal of the required insurance coverages.
  - 2. Upon request by Owner or any additional insured, other evidence of such required insurance, including but not limited to copies (including electronic copies) of policies, documentation of applicable self-insured retentions (if allowed) and deductibles, full disclosure of all relevant exclusions, and evidence of insurance required to be purchased and maintained by Contractor and its Subcontractors. In any documentation furnished under this provision, Contractor or its Subcontractors may block out (redact) any confidential premium or pricing information or other information not applicable to this Project or Contract.

Failure of Owner or additional insured to demand the documents required by this Paragraph 6.02.C, or failure of Owner to identify a deficiency in compliance from the evidence provided, will not be construed as a waiver of the obligation of the relevant party (i.e., Contractor or its Subcontractor) to obtain and maintain such insurance.

- D. Contractor shall require its Subcontractors to purchase and maintain the insurance coverages specified under the Agreement.
- E. Without prejudice to any other right or remedy, if Contractor has failed to obtain required insurance, Owner may elect (but is in no way obligated) to obtain equivalent insurance to protect Owner and additional insureds' interests at the expense of Contractor, and the GMP and Contract Price will be adjusted accordingly.
- F. Owner does not represent that insurance coverage and limits established in the Agreement will be adequate to protect the interests of Contractor or any of its Subcontractors. Each such party is responsible for determining whether such coverage and limits are adequate to protect its interests, and for obtaining and maintaining any additional insurance that Contractor deems necessary.
- G. The insurance and insurance limits required under this Paragraph 6.02 are minimums and shall not be deemed as a limitation on Contractor's liability, or that of its Subcontractors, under the indemnities granted to the Owner Indemnitees.
- H. If in any instance Contractor has not performed its obligations respecting obtaining and maintaining insurance coverage required hereunder, or is unable to enforce and collect any such insurance for failure to assert claims in accordance with the terms of the insurance policies, then for purposes of determining Contractor's liability and the limits thereon or determining reductions in compensation due from Owner to Contractor on account of available insurance, Contractor shall be treated as if it has elected to self-insure up to the full amount of insurance coverage that would have been available had Contractor performed such obligations and not committed such failure.
- I. Contractor and its Subcontractors shall be solely responsible for any and all deductibles or self-insured retentions that shall apply under any required, or otherwise purchased, insurances and shall have no recourse against Owner for any such costs.
- J. All policies of insurance that Contractor is required to purchase and maintain under this Paragraph 6.02 shall:
  - 1. Contain a provision requiring the insurer to give not less than thirty (30) days' prior notice to Owner whenever the insurer gives Contractor a notice of cancellation or non-renewal with respect to the policy (except in the case of any non-premium payment, not less than ten (10) days' prior notice, which the insurer shall be obligated to give to Owner simultaneously with providing such notice to Contractor). The provision required by the preceding sentence shall not be deemed to infer a right of cancellation that would otherwise not exist in the absence of such provision.
  - 2. Contain coverage terms and conditions that reflect the industry standard for projects of a similar size, scope, and nature of this Project that the commercial market will provide and support as of the date of such insurance procurement and any subsequent renewals.
  - 3. Other than worker's compensation/employer's liability insurance and builder's risk insurance, include cross-liability clauses allowing one insured to bring a claim against another insured party. With regard to pollution liability insurance, a cross-liability clause will be allowed as long as it does not impact Owner's ability to sue another insured party and collect under the policy.

4. Be endorsed so that the insurer agrees to waive, to the extent permitted by law, all rights of subrogation or action that it may have or acquire against any Owner Indemnitee.
  5. Other than for professional liability insurance, worker's compensation/employer's liability insurance, automobile liability insurance, and contractor pollution liability insurance, contain a provision under which the insurer agrees that the failure of one insured to observe and fulfill the terms of the policy will not prejudice the coverage of the other insureds.
  6. With regard to builder's risk and any other first-party property insurance, have each policy endorsed to contain a standard mortgagee clause to the effect that Owner and other insureds will not be prejudiced by an unintended and/or inadvertent error, omission or mistaken description of the risk interest in property insured under the policies, incorrect declaration of values, failure to advise insurers of any change of risk interest or property insured, or failure to comply with a statutory requirement.
  7. Not include defense costs within the limits of coverage or permit erosion of coverage limits by defense costs, except that defense costs may be included within the limits of coverage of the contractor pollution liability policy.
- K. Contractor's commercial general liability, automobile liability, umbrella or excess, pollution liability, and marine protection and indemnity policies must:
1. Include and list as additional insureds Owner and other Owner-Related Parties;
  2. Include coverage for the respective officers, directors, members, partners, employees, and consultants of all such additional insureds;
  3. Afford primary coverage to these additional insureds for all claims covered thereby (including as applicable those arising from both ongoing and completed operations);
  4. Not seek contribution from insurance maintained by the additional insured; and
  5. As to commercial general liability insurance, apply to additional insureds with respect to liability caused in whole or in part by Contractor's acts or omissions, or the acts and omissions of Contractor-Related Entities, in the performance of Contractor's operations.

## **ARTICLE 7—CONTRACTOR'S RESPONSIBILITIES**

### **7.01 *Contractor's Means and Methods of Construction***

- A. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction.
- B. If the Contract Documents note, or Contractor determines, that professional engineering or other design services are needed to carry out Contractor's responsibilities for construction means, methods, techniques, sequences, and procedures, or for Site safety, then Contractor shall cause such services to be provided by a properly licensed design professional, at Contractor's expense. Such services are not Owner-delegated professional design services under this Contract, and neither Owner nor Engineer has any responsibility with respect to (1) Contractor's determination of the need for such services, (2) the qualifications or licensing of the design professionals retained or employed by Contractor, (3) the performance of such services, or (4) any errors, omissions, or defects in such services.

7.02 *Supervision and Superintendence*

- A. Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents.
- B. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who will not be replaced without written notice to Owner and Engineer except under extraordinary circumstances.

7.03 *Labor; Working Hours*

- A. Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall maintain good discipline and order at the Site.
- B. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of Contractor's employees, Contractor-Related Entities and their employees.
- C. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site will be performed during regular working hours, Monday through Friday. Contractor will not perform Work on a Saturday, Sunday, or any legal holiday. Contractor may perform Work outside regular working hours or on Saturdays, Sundays, or legal holidays only with Owner's written consent, which will not be unreasonably withheld.

7.04 *Services, Materials, and Equipment*

- A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, Equipment and Materials, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start up, and completion of the Work, whether or not such items are specifically called for in the Contract Documents.
- B. All Equipment and Materials must be new and of good quality, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications will expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of Equipment and Materials.
- C. All Equipment and Materials must be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

7.05 *"Or Equals"*

- A. *Contractor's Request; Governing Criteria:* Whenever an item of Equipment or Material is specified or described in the Contract Documents by using the names of one or more proprietary items or specific Suppliers, the GMP has been based upon Contractor furnishing such item as specified. The specification or description of such an item is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or equal" item is permitted, Contractor may request that Engineer authorize the use of other items of

Equipment or Material, or items from other proposed Suppliers, under the circumstances described below.

1. If Engineer in its sole discretion determines that an item of Equipment or Material proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, Engineer will deem it an “or equal” item. For the purposes of this paragraph, a proposed item of Equipment or Material will be considered functionally equal to an item so named if:
  - a. in the exercise of reasonable judgment Engineer determines that the proposed item:
    - 1) is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;
    - 2) will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole;
    - 3) has a proven record of performance and availability of responsive service; and
    - 4) is not objectionable to Owner.
  - b. Contractor certifies that, if the proposed item is approved and incorporated into the Work:
    - 1) there will be no increase in cost to the Owner or increase in Contract Times; and
    - 2) the item will conform substantially to the detailed requirements of the item named in the Contract Documents.
- B. *Contractor’s Expense*: Contractor shall provide all data in support of any proposed “or equal” item at Contractor’s expense.
- C. *Engineer’s Evaluation and Determination*: Engineer will be allowed a reasonable time to evaluate each “or-equal” request. Engineer may require Contractor to furnish additional data about the proposed “or-equal” item. Engineer will be the sole judge of acceptability. No “or-equal” item will be ordered, furnished, installed, or utilized until Engineer’s review is complete and Engineer determines that the proposed item is an “or-equal,” which will be evidenced by an approved Shop Drawing or other written communication. Engineer will advise Contractor in writing of any negative determination.
- D. *Effect of Engineer’s Determination*: Neither approval nor denial of an “or-equal” request will result in any change in the GMP. The Engineer’s denial of an “or-equal” request will be final and binding, and may not be reversed through an appeal under any provision of the Contract.
- E. *Treatment as a Substitution Request*: If Engineer determines that an item of Equipment or Material proposed by Contractor does not qualify as an “or-equal” item, Contractor may request that Engineer consider the item a proposed substitute pursuant to Paragraph 7.06.

#### 7.06 *Substitutes*

- A. *Contractor’s Request; Governing Criteria*: Unless the specification or description of an item of Equipment or Material required to be furnished under the Contract Documents contains or is followed by words reading that no substitution is permitted, Contractor may request that Engineer authorize the use of other items of Equipment or Material under the circumstances described below. To the extent possible such requests must be made before commencement of related construction at the Site.

1. Contractor shall submit sufficient information as provided below to allow Engineer to determine if the item of Equipment or Material proposed is functionally equivalent to that named and an acceptable substitute therefor. Engineer will not accept requests for review of proposed substitute items of Equipment or Material from anyone other than Contractor.
  2. The requirements for review by Engineer will be as set forth in Paragraph 7.06.B, as supplemented by the Specifications, and as Engineer may decide is appropriate under the circumstances.
  3. Contractor shall make written application to Engineer for review of a proposed substitute item of Equipment or Material that Contractor seeks to furnish or use. The application:
    - a. will certify that the proposed substitute item will:
      - 1) perform adequately the functions and achieve the results called for by the general design;
      - 2) be similar in substance to the item specified; and
      - 3) be suited to the same use as the item specified.
    - b. will state:
      - 1) the extent, if any, to which the use of the proposed substitute item will necessitate a change in Contract Times;
      - 2) whether use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed substitute item; and
      - 3) whether incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty.
    - c. will identify:
      - 1) all variations of the proposed substitute item from the item specified; and
      - 2) available engineering, sales, maintenance, repair, and replacement services.
    - d. will contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including but not limited to changes in the GMP, shared savings, costs of redesign, and claims of other contractors affected by any resulting change.
- B. *Engineer's Evaluation and Determination:* Engineer will be allowed fourteen (14) days to evaluate each substitute request, and to obtain comments and direction from Owner. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No substitute will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an acceptable substitute. Engineer's determination will be evidenced by a Field Order or a proposed Change Order accounting for the substitution itself and all related impacts, including changes the GMP or Contract Times. Engineer will advise Contractor in writing of any negative determination.

- C. *Special Guarantee*: Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.
- D. *Reimbursement of Engineer's Cost*: Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor. Whether or not Engineer approves a substitute so proposed or submitted by Contractor, Contractor shall reimburse Owner for the reasonable charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the reasonable charges of Engineer for making changes in the Contract Documents (or in the provisions of any other direct contract with Owner) resulting from the acceptance of each proposed substitute.
- E. *Contractor's Expense*: Contractor shall provide all data in support of any proposed substitute at Contractor's expense.
- F. *Effect of Engineer's Determination*: If Engineer approves the substitution request, Contractor shall execute the proposed Change Order and proceed with the substitution. The Engineer's denial of a substitution request will be final and binding, and may not be reversed through an appeal under any provision of the Contract. Contractor may challenge the scope of reimbursement costs imposed under Paragraph 7.06.D, by timely submittal of a Change Proposal.

7.07 *Concerning Subcontractors and Suppliers*

- A. Contractor may retain Subcontractors and Suppliers for the performance of parts of the Work, in accordance with the Agreement. Such Subcontractors and Suppliers must be acceptable to Owner. The Contractor's retention of a Subcontractor or Supplier for the performance of parts of the Work will not relieve Contractor's obligation to Owner to perform and complete the Work in accordance with the Contract Documents.
- B. Contractor shall retain specific Subcontractors and Suppliers for the performance of designated parts of the Work if required by the Contract to do so.
- C. Owner may not require Contractor to retain any Subcontractor or Supplier to furnish or perform any of the Work against which Contractor has reasonable objection.
- D. Owner may require the replacement of any Subcontractor or Supplier. Owner also may require Contractor to retain specific replacements; provided, however, that Owner may not require a replacement to which Contractor has a reasonable objection. If Contractor has submitted the identity of certain Subcontractors or Suppliers for acceptance by Owner, and Owner has accepted it (either in writing or by failing to make written objection thereto), then Owner may subsequently revoke the acceptance of any such Subcontractor or Supplier so identified solely on the basis of substantive, reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor or Supplier.
- E. If Owner requires the replacement of any Subcontractor or Supplier retained by Contractor to perform any part of the Work, then Contractor shall be entitled to an adjustment to the GMP or Contract Times, with respect to the replacement; and Contractor shall initiate a Change Proposal for such adjustment within 30 days of Owner's requirement of replacement.
- F. No acceptance by Owner of any such Subcontractor or Supplier, whether initially or as a replacement, will constitute a waiver of the right of Owner to the completion of the Work in accordance with the Contract Documents.

- G. On a monthly basis, Contractor shall submit to Engineer a complete list of all Subcontractors and Suppliers having a direct contract with Contractor, and of all other Subcontractors and Suppliers known to Contractor at the time of submittal.
- H. Contractor shall be fully responsible to Owner for all acts and omissions of the Contractor-Related Entities, just as Contractor is responsible to Owner for Contractor's own acts and omissions.
- I. Contractor is solely responsible for scheduling and coordinating the work of Subcontractors and Suppliers.
- J. The divisions and sections of the Specifications and the identifications of any Drawings do not control Contractor in dividing the Work among Subcontractors or Suppliers, or in delineating the Work to be performed by any specific trade.
- K. All Work performed for Contractor by a Subcontractor or Supplier must be pursuant to an appropriate contractual agreement that specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract for the benefit of Owner and Engineer.
- L. Owner may furnish to any Subcontractor or Supplier, to the extent practicable, information about amounts paid to Contractor for Work performed for Contractor by the Subcontractor or Supplier.
- M. Contractor shall restrict all Subcontractors and Suppliers from communicating with Engineer or Owner, except through Contractor or in case of an emergency, or as otherwise expressly allowed in this Contract.

7.08 *Patent Fees and Royalties*

- A. Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If an invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if, to the actual knowledge of Owner or Engineer, its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights will be disclosed in the Contract Documents.
- B. TO THE FULLEST EXTENT PERMITTED BY LAWS AND REGULATIONS, CONTRACTOR SHALL INDEMNIFY AND HOLD HARMLESS THE OWNER INDEMNITEES FROM AND AGAINST ALL CLAIMS, COSTS, LOSSES, AND DAMAGES (INCLUDING BUT NOT LIMITED TO ALL FEES AND CHARGES OF ENGINEERS, ARCHITECTS, ATTORNEYS, AND OTHER PROFESSIONALS AND ALL COURT OR ARBITRATION OR OTHER DISPUTE RESOLUTION COSTS) ARISING OUT OF OR RELATING TO ANY INFRINGEMENT OF PATENT RIGHTS OR COPYRIGHTS INCIDENT TO THE USE IN THE PERFORMANCE OF THE WORK OR RESULTING FROM THE INCORPORATION IN THE WORK OF ANY INVENTION, DESIGN, PROCESS, PRODUCT, OR DEVICE NOT SPECIFIED IN THE CONTRACT DOCUMENTS.**

7.09 *Permits*

- A. Unless otherwise provided in the GMP Documents, Contractor shall obtain and pay for all construction permits, licenses, and certificates of occupancy. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable



as of the Effective Date of the Contract. Owner shall pay all charges of utility owners for connections for providing permanent service to the Work.

7.10 *Taxes*

- A. Contractor shall pay all sales, consumer, use, and other similar taxes required to be paid by Contractor in accordance with the Laws and Regulations which are applicable during the performance of the Work.

7.11 *Laws and Regulations*

- A. Contractor shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of the Work. Neither Owner nor Engineer shall be responsible for monitoring Contractor's compliance with any Laws or Regulations.
- B. **IF CONTRACTOR PERFORMS ANY WORK OR TAKES ANY OTHER ACTION KNOWING OR HAVING REASON TO KNOW THAT IT IS CONTRARY TO LAWS OR REGULATIONS, CONTRACTOR SHALL BEAR ALL RESULTING COSTS AND LOSSES, AND SHALL INDEMNIFY AND HOLD HARMLESS THE OWNER INDEMNITEES FROM AND AGAINST ALL CLAIMS, COSTS, LOSSES, AND DAMAGES (INCLUDING BUT NOT LIMITED TO ALL FEES AND CHARGES OF ENGINEERS, ARCHITECTS, ATTORNEYS, AND OTHER PROFESSIONALS AND ALL COURT OR ARBITRATION OR OTHER DISPUTE RESOLUTION COSTS) ARISING OUT OF OR RELATING TO SUCH WORK OR OTHER ACTION. IT IS NOT CONTRACTOR'S RESPONSIBILITY TO MAKE CERTAIN THAT THE WORK DESCRIBED IN THE CONTRACT DOCUMENTS IS IN ACCORDANCE WITH LAWS AND REGULATIONS, BUT THIS DOES NOT RELIEVE CONTRACTOR OF ITS OBLIGATIONS UNDER PARAGRAPH 3.03.**
- C. Changes in Laws and Regulations that occur after the Effective Date of the Contract and affect the cost or time of performance shall be the subject of an equitable adjustment in the GMP or Contract Times, provided, however, that Contractor requests such equitable adjustment in accordance with Articles 4 and 11 hereunder. Notwithstanding anything to the contrary, the relief afforded by this Paragraph C shall not apply to the creation of or changes in any Laws or Regulations relating to: (a) any federal, state or local income or gross receipts tax; (b) any Contractor-Related Entity's corporate existence or the maintenance of its business; or (c) labor or employment matters.

7.12 *Record Documents*

- A. Contractor shall maintain in a safe place at the Site one printed record copy of all Drawings, Specifications, Addenda, Change Orders, Work Change Directives, Field Orders, written interpretations and clarifications, and approved Shop Drawings. Contractor shall keep such record documents in good order and annotate them to show changes made during construction. These record documents, together with all approved Samples, will be available to Engineer for reference. Upon completion of the Work, Contractor shall deliver these record documents to Engineer.

7.13 *Safety and Protection*

- A. Contractor shall be solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the Work. Such responsibility does not relieve any Contractor-Related Entity of its responsibility for the safety of persons or property in the performance of their work, nor for compliance with applicable safety Laws and Regulations.

- B. Contractor has designated in its GMP Proposal as part of its Key Personnel a qualified and experienced safety representative whose duties and responsibilities are the prevention of Work-related accidents and the maintenance and supervision of safety precautions and programs.
- C. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury, or loss to:
  - 1. all persons on the Site or who may be affected by the Work;
  - 2. all the Work and Equipment and Materials, whether in storage on or off the Site; and
  - 3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, other work in progress, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.
- D. All damage, injury, or loss to any property referred to in Paragraph 7.13.C.2 or 7.13.C.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor at its expense (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Engineer or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).
- E. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection.
- F. Contractor shall notify Owner; the owners of adjacent property; the owners of Underground Facilities and other utilities (if the identity of such owners is known to Contractor); and other contractors and utility owners performing work at or adjacent to the Site, in writing, when Contractor knows that prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property or work in progress.
- G. Contractor shall comply with the Health and Safety Plan. Any Owner's safety programs that are applicable to the Work are identified or included in the Specifications.
- H. Contractor shall inform Owner and Engineer of the specific requirements of the Health and Safety Plan with which Owner's and Engineer's employees and representatives must comply while at the Site.
- I. Contractor's duties and responsibilities for safety and protection will continue until all the Work is completed, Engineer has issued a written notice to Owner and Contractor in accordance with Paragraph 15.06.C that the Work is acceptable, and Contractor has left the Site (except as otherwise expressly provided in connection with Substantial Completion).
- J. Contractor's duties and responsibilities for safety and protection will resume whenever Contractor or any Subcontractor or Supplier returns to the Site to fulfill warranty or correction obligations, or to conduct other tasks arising from the Contract Documents.

- K. Within twenty-four (24) hours of receiving a request from Owner, Contractor shall furnish to Owner documentation substantiating representations made in the Health and Safety Plan including, but not limited to, that each of the Contractor's employees has received training on the Health and Safety Plan as well as any other training necessary to competently effectuate the Health and Safety Plan.

7.14 *Hazard Communication Programs*

- A. Contractor shall be responsible for coordinating any exchange of safety data sheets (formerly known as material safety data sheets) or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with Laws or Regulations.

7.15 *Emergencies*

- A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, Contractor is obligated to act to prevent damage, injury, or loss. Contractor shall give Engineer written notice no later than seven (7) days from the date of the emergency if Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused by an emergency, or are required as a result of Contractor's response to an emergency. If Engineer determines that a change in the Contract Documents is required because of an emergency or Contractor's response, a Work Change Directive or Change Order will be issued.

7.16 *Submittals*

A. *Shop Drawing and Sample Requirements*

1. Before submitting a Shop Drawing or Sample, Contractor shall:
  - a. review and coordinate the Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents;
  - b. determine and verify:
    - 1) all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect to the Submittal;
    - 2) the suitability of all Equipment and Materials offered with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work; and
    - 3) all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto;
  - c. confirm that the Submittal is complete with respect to all related data included in the Submittal.
2. Each Shop Drawing or Sample must bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review of that Submittal, and that Contractor approves the Submittal.

3. With each Shop Drawing or Sample, Contractor shall give Engineer specific written notice of any variations that the Submittal may have from the requirements of the Contract Documents. This notice must be set forth in a written communication separate from the Submittal; and, in addition, in the case of a Shop Drawing by a specific notation made on the Shop Drawing itself.
- B. *Submittal Procedures for Shop Drawings and Samples:* Contractor shall label and submit Shop Drawings and Samples to Engineer for review and approval in accordance with the accepted Schedule of Submittals.
1. *Shop Drawings*
    - a. Contractor shall submit the number of copies required in the Specifications.
    - b. Data shown on the Shop Drawings must be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, Equipment and Materials Contractor proposes to provide, and to enable Engineer to review the information for the limited purposes required by Paragraph 7.16.C.
  2. *Samples*
    - a. Contractor shall submit the number of Samples required in the Specifications.
    - b. Contractor shall clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the Submittal for the limited purposes required by Paragraph 7.16.C.
  3. Where a Shop Drawing or Sample is required by the Contract Documents or the Schedule of Submittals, any related Work performed prior to Engineer's review and approval of the pertinent submittal will be at the sole expense and responsibility of Contractor.
- C. *Engineer's Review of Shop Drawings and Samples*
1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the accepted Schedule of Submittals, provided, however, that unless stated differently in the Schedule of Submittals, Engineer shall provide its review no later than fourteen (14) days from the date it has received the Shop Drawing or Sample. Engineer's review and approval will be only to determine if the items covered by the Submittals will, after installation or incorporation in the Work, comply with the requirements of the Contract Documents, and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.
  2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction, or to safety precautions or programs incident thereto.
  3. Engineer's review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.
  4. Engineer's review and approval of a Shop Drawing or Sample will not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 7.16.A.3 and Engineer has given written approval of each such variation by specific written notation

thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer will document any such approved variation from the requirements of the Contract Documents in a Field Order or other appropriate Contract modification.

5. Engineer's review and approval of a Shop Drawing or Sample will not relieve Contractor from responsibility for complying with the requirements of Paragraphs 7.16.A and B.
6. Engineer's review and approval of a Shop Drawing or Sample, or of a variation from the requirements of the Contract Documents, will not, under any circumstances, change the Contract Times or the GMP, unless such changes are included in a Change Order.
7. Neither Engineer's receipt, review, acceptance, or approval of a Shop Drawing or Sample will result in such item becoming a Contract Document.
8. Contractor shall perform the Work in compliance with the requirements and commitments set forth in approved Shop Drawings and Samples, subject to the provisions of Paragraph 7.16.C.4.

*D. Resubmittal Procedures for Shop Drawings and Samples*

1. Contractor shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous Submittals.
2. Contractor shall furnish required Shop Drawing and Sample submittals with sufficient information and accuracy to obtain required approval of an item with no more than two resubmittals. Engineer will record Engineer's time for reviewing a third or subsequent resubmittal of a Shop Drawing or Sample, and Contractor shall be responsible for Engineer's charges to Owner for such time. Owner may impose a set-off against payments due Contractor to secure reimbursement for such charges.
3. If Contractor requests a change of a previously approved Shop Drawing or Sample, Contractor shall be responsible for Engineer's charges to Owner for its review time, and Owner may impose a set-off against payments due Contractor to secure reimbursement for such charges, unless the need for such change is beyond the control of Contractor.

*E. Submittals Other than Shop Drawings, Samples, and Owner-Delegated Designs*

1. The following provisions apply to all Submittals other than Shop Drawings, Samples, and Owner-delegated designs:
  - a. Contractor shall submit all such Submittals to the Engineer in accordance with the Schedule of Submittals and pursuant to the applicable terms of the Contract Documents.
  - b. Engineer will provide timely review of all such Submittals in accordance with the Schedule of Submittals, provided, however, that unless stated differently in the Schedule of Submittals, Engineer shall provide its review no later than fourteen (14) days from the date it has received the Submittal. Engineer shall return such Submittals with a notation of either Accepted or Not Accepted. Any such Submittal that is not returned within the time established in the Schedule of Submittals will be deemed accepted.

- c. Engineer's review will be only to determine if the Submittal is acceptable under the requirements of the Contract Documents as to general form and content of the Submittal.
  - d. If any such Submittal is not accepted, Contractor shall confer with Engineer regarding the reason for the non-acceptance, and resubmit an acceptable document.
- F. Owner-delegated Designs: Submittals pursuant to Owner-delegated designs are governed by the provisions of Paragraph 7.19.

7.17 *Contractor's General Warranty and Guarantee*

- A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Engineer is entitled to rely on Contractor's warranty and guarantee.
- B. Owner's rights under this warranty and guarantee are in addition to, and are not limited by, Owner's rights under the correction period provisions of Paragraph 15.08. The time in which Owner may enforce its warranty and guarantee rights under this Paragraph 7.17 is limited only by applicable Laws and Regulations restricting actions to enforce such rights; provided, however, that after the end of the correction period under Paragraph 15.08:
  - 1. Owner shall give Contractor written notice of any defective Work within 60 days of the discovery that such Work is defective; and
  - 2. Such notice will be deemed the start of an event giving rise to a Claim under Paragraph 12.01.B, such that any related Claim must be brought within 30 days of the notice.
- C. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:
  - 1. abuse, or improper modification, maintenance, or operation, by persons other than Contractor or any Contractor-Related Entity; or
  - 2. normal wear and tear under normal usage.
- D. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents is absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents, a release of Contractor's obligation to perform the Work in accordance with the Contract Documents, or a release of Owner's warranty and guarantee rights under this Paragraph 7.17:
  - 1. Observations by Engineer;
  - 2. Recommendation by Engineer or payment by Owner of any progress or Final Payment;
  - 3. The issuance of a certificate of Substantial Completion by Engineer or any payment related thereto by Owner;
  - 4. Use or occupancy of the Work or any part thereof by Owner;
  - 5. Any review and approval of a Shop Drawing or Sample submittal;
  - 6. The issuance of a notice of acceptability by Engineer;
  - 7. The end of the correction period established in Paragraph 15.08;
  - 8. Any inspection, test, or approval by others; or

9. Any correction of defective Work by Owner.
- E. If the Contract requires the Contractor to accept the assignment of a contract entered into by Owner, then the specific warranties, guarantees, and correction obligations contained in the assigned contract will govern with respect to Contractor's performance obligations to Owner for the Work described in the assigned contract.

**7.18 INDEMNIFICATION**

- A. **TO THE FULLEST EXTENT PERMITTED BY LAWS AND REGULATIONS, AND IN ADDITION TO ANY OTHER OBLIGATIONS OF CONTRACTOR UNDER THE CONTRACT OR OTHERWISE, CONTRACTOR SHALL INDEMNIFY AND HOLD HARMLESS THE OWNER INDEMNITEES FROM LOSSES, CLAIMS, SUITS, DAMAGES, LIABILITIES, CAUSES OF ACTION, COSTS, AND JUDGMENTS (INCLUDING BUT NOT LIMITED TO ALL FEES AND CHARGES OF ENGINEERS, ARCHITECTS, ATTORNEYS, AND OTHER PROFESSIONALS, AND ALL COURT OR ARBITRATION OR OTHER DISPUTE RESOLUTION COSTS) ARISING FROM THIRD-PARTY CLAIMS OR ACTIONS RELATING TO OR RESULTING FROM THE PERFORMANCE OR FURNISHING OF THE WORK, PROVIDED THAT ANY SUCH CLAIM, ACTION, LOSS, COST, JUDGMENT OR DAMAGE IS ATTRIBUTABLE TO BODILY INJURY, SICKNESS, DISEASE, OR DEATH, OR TO DAMAGE TO OR DESTRUCTION OF TANGIBLE PROPERTY (OTHER THAN THE WORK ITSELF), INCLUDING THE LOSS OF USE RESULTING THEREFROM, BUT ONLY TO THE EXTENT CAUSED BY ANY NEGLIGENT ACT OR OMISSION, OR RECKLESSNESS OR INTENTIONAL MISCONDUCT, OF CONTRACTOR OR ANY CONTRACTOR-RELATED ENTITY.**
- B. **IN ANY AND ALL CLAIMS AGAINST AN OWNER INDEMNITEE BY ANY EMPLOYEE (OR THE SURVIVOR OR PERSONAL REPRESENTATIVE OF SUCH EMPLOYEE) OF CONTRACTOR OR ANY CONTRACTOR-RELATED ENTITY, THE INDEMNIFICATION OBLIGATION UNDER PARAGRAPH 7.18.A WILL NOT BE LIMITED IN ANY WAY BY ANY LIMITATION ON THE AMOUNT OR TYPE OF DAMAGES, COMPENSATION, OR BENEFITS PAYABLE BY OR FOR CONTRACTOR OR ANY CONTRACTOR-RELATED ENTITY UNDER WORKERS' COMPENSATION ACTS, DISABILITY BENEFIT ACTS, OR OTHER EMPLOYEE BENEFIT ACTS. THE PURPOSE OF THIS PROVISION IS NOT TO CHANGE ANY LIABILITY/BENEFIT BETWEEN CONTRACTOR-RELATED ENTITY AND ITS EMPLOYEE, BUT TO PROTECT THE OWNER INDEMNITEES TO THE FULL EXTENT TO WHICH AN EMPLOYEE MAY ASSERT A CLAIM AGAINST AN OWNER INDEMNITEE ARISING UNDER PARAGRAPH 7.18.A ABOVE.**

**7.19 *Delegation of Professional Design Services***

- A. Owner may require Contractor to provide professional design services for a portion of the Work by express delegation in the Contract Documents. Such delegation will specify the performance and design criteria that such services must satisfy, and the Submittals that Contractor must furnish to Engineer with respect to the Owner-delegated design.
- B. Contractor shall cause such Owner-delegated professional design services to be provided pursuant to the professional standard of care by a properly licensed design professional, whose signature and seal must appear on all drawings, calculations, specifications, certifications, and Submittals prepared by such design professional. Such design professional must issue all certifications of design required by Laws and Regulations.
- C. If a Shop Drawing or other Submittal related to the Owner-delegated design is prepared by Contractor or a Contractor-Related Entity for submittal to Engineer, then such Shop Drawing

or other Submittal must bear the written approval of Contractor's design professional when submitted by Contractor to Engineer.

- D. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy, and completeness of the services, certifications, and approvals performed or provided by the design professionals retained or employed by Contractor under an Owner-delegated design, subject to the following professional standard of care and the performance and design criteria: architectural or engineering services must be performed with the professional skill and care ordinarily provided by competent architects or engineers practicing under the same or similar circumstances and professional license.
- E. Pursuant to this Paragraph 7.19, Engineer's review, approval, and other determinations regarding design drawings, calculations, specifications, certifications, and other Submittals furnished by Contractor pursuant to an Owner-delegated design will be only for the following limited purposes:
  - 1. Checking for conformance with the requirements of this Paragraph 7.19;
  - 2. Confirming that Contractor (through its design professionals) has used the performance and design criteria specified in the Contract Documents; and
  - 3. Establishing that the design furnished by Contractor is consistent with the design concept expressed in the Contract Documents.
- F. Contractor shall not be responsible for the adequacy of performance or design criteria specified by Owner or Engineer. However, Contractor retains the responsibility of providing written disclosure of known defects within a reasonable time after such defects are discovered or reasonably should have been discovered using ordinary diligence before or during construction.
- G. Contractor is not required to provide professional services in violation of applicable Laws and Regulations.

## **ARTICLE 8—OTHER WORK AT THE SITE**

### **8.01 *Other Work***

- A. In addition to and apart from the Work under the Contract Documents, the Owner may perform other work at or adjacent to the Site. Such other work may be performed by Owner's employees, or through contracts between the Owner and third parties. Owner may also arrange to have third-party utility owners perform work on their utilities and facilities at or adjacent to the Site.
- B. If Owner performs other work at or adjacent to the Site with Owner's employees, or through contracts for such other work, then Owner shall give Contractor written notice thereof prior to starting any such other work. If Owner has advance information regarding the start of any third-party utility work that Owner has arranged to take place at or adjacent to the Site, Owner shall provide such information to Contractor.
- C. Contractor shall afford proper and safe access to the Site to each contractor that performs such other work, each utility owner performing other work, and Owner, if Owner is performing other work with Owner's employees, and provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work.



- D. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering such work; provided, however, that Contractor may cut or alter others' work with the written consent of Engineer and the others whose work will be affected.
- E. If the proper execution or results of any part of Contractor's Work depends upon work performed by others, Contractor shall inspect such other work and promptly report to Engineer in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of Contractor's Work. Contractor's failure to so report will constitute an acceptance of such other work as fit and proper for integration with Contractor's Work except for latent defects and deficiencies in such other work.
- F. The provisions of this article are not applicable to work that is performed by third-party utilities or other third-party entities without a contract with Owner, or that is performed without having been arranged by Owner. If such work occurs, then any related delay, disruption, or interference incurred by Contractor is governed by the provisions of Paragraph 4.05.C.3.

#### 8.02 *Coordination*

- A. If Owner intends to contract with others for the performance of other work at or adjacent to the Site, to perform other work at or adjacent to the Site with Owner's employees, or to arrange to have utility owners perform work at or adjacent to the Site, the following will be provided to Contractor prior to the start of any such other work:
  - 1. The identity of the individual or entity that will have authority and responsibility for coordination of the activities among the various contractors;
  - 2. An itemization of the specific matters to be covered by such authority and responsibility; and
  - 3. The extent of such authority and responsibilities.
- B. Owner shall have sole authority and responsibility for such coordination.

#### 8.03 *Legal Relationships*

- A. If, in the course of performing other work for Owner at or adjacent to the Site, the Owner's employees, any other contractor working for Owner, or any utility owner that Owner has arranged to perform work, causes damage to the Work or to the property of Contractor or its Subcontractors, or delays, disrupts, interferes with, or increases the scope or cost of the performance of the Work, through actions or inaction, then Contractor shall be entitled to an equitable adjustment in the GMP or the Contract Times. Contractor must submit any Change Proposal seeking an equitable adjustment or the Contract Times under this paragraph within 30 days of the damaging, delaying, disrupting, or interfering event. The entitlement to, and extent of, any such equitable adjustment will take into account information (if any) regarding such other work that was provided to Contractor in the Contract Documents prior to the Effective Date of the Contract, and any remedies available to Contractor under Laws or Regulations concerning utility action or inaction. When applicable, any such equitable adjustment to the GMP will be conditioned on Contractor assigning to Owner all Contractor's

rights against such other contractor or utility owner with respect to the damage, delay, disruption, or interference that is the subject of the adjustment. Contractor's entitlement to an adjustment of the Contract Times or the GMP is subject to the provisions of Paragraphs 4.05.D and 4.05.E.

- B. Contractor shall take reasonable and customary measures to avoid damaging, delaying, disrupting, or interfering with the work of Owner, any other contractor, or any utility owner performing other work at or adjacent to the Site.
  - 1. If Contractor fails to take such measures and as a result damages, delays, disrupts, or interferes with the work of any such other contractor or utility owner, then Owner may impose a set-off against payments due Contractor, and assign to such other contractor or utility owner the Owner's contractual rights against Contractor with respect to the breach of the obligations set forth in this Paragraph 8.03.B.
  - 2. When Owner is performing other work at or adjacent to the Site with Owner's employees, Contractor shall be liable to Owner for damage to such other work, and for the reasonable direct delay, disruption, and interference costs incurred by Owner as a result of Contractor's failure to take reasonable and customary measures with respect to Owner's other work. In response to such damage, delay, disruption, or interference, Owner may impose a set-off against payments due Contractor.
- C. If Contractor damages, delays, disrupts, or interferes with the work of any other contractor, or any utility owner performing other work at or adjacent to the Site, through Contractor's failure to take reasonable and customary measures to avoid such impacts, or if any claim arising out of Contractor's actions, inactions, or negligence in performance of the Work at or adjacent to the Site is made by any such other contractor or utility owner against Contractor, Owner, or Engineer, then Contractor shall (1) promptly attempt to settle the claim as to all parties through negotiations with such other contractor or utility owner, or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law, and **(2) INDEMNIFY AND HOLD HARMLESS OWNER INDEMNITEES FROM AND AGAINST ANY SUCH CLAIMS, AND AGAINST ALL COSTS, LOSSES, AND DAMAGES (INCLUDING BUT NOT LIMITED TO ALL FEES AND CHARGES OF ENGINEERS, ARCHITECTS, ATTORNEYS, AND OTHER PROFESSIONALS AND ALL COURT OR ARBITRATION OR OTHER DISPUTE RESOLUTION COSTS) ARISING OUT OF OR RELATING TO SUCH DAMAGE, DELAY, DISRUPTION, OR INTERFERENCE.**

## ARTICLE 9—OWNER'S RESPONSIBILITIES

### 9.01 *Communications to Contractor*

- A. Except as otherwise provided in these General Conditions, Owner shall issue all communications to Contractor through Engineer.

### 9.02 *Replacement of Engineer*

- A. Owner may at its discretion appoint an engineer to replace Engineer, provided Contractor makes no reasonable objection to the replacement engineer. The replacement engineer's status under the Contract Documents will be that of the former Engineer.

### 9.03 *Furnish Data*

- A. Owner shall promptly furnish the data required of Owner under the Contract Documents.

- 9.04 *Pay When Due*
- A. Owner shall make payments to Contractor when they are due as provided in the Agreement.
- 9.05 *Lands and Easements; Reports, Tests, and Drawings*
- A. Owner's duties with respect to providing lands and easements are set forth in Paragraph 5.01.
- B. Owner's duties with respect to providing engineering surveys to establish reference points are set forth in Paragraph 4.03.
- C. Article 5 refers to Owner's identifying and making available to Contractor copies of reports of explorations and tests of conditions at the Site, and drawings of physical conditions relating to existing surface or subsurface structures at the Site.
- 9.06 *Change Orders*
- A. Owner's responsibilities with respect to Change Orders are set forth in Article 11.
- 9.07 *Inspections, Tests, and Approvals*
- A. Owner's responsibility with respect to certain inspections, tests, and approvals is set forth in Paragraph 14.02.B.
- 9.08 *Limitations on Owner's Responsibilities*
- A. The Owner shall not supervise, direct, or have control or authority over, nor be responsible for, Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Owner will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.
- 9.09 *Undisclosed Hazardous Environmental Condition*
- A. Owner's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 5.06.
- 9.10 *Evidence of Financial Arrangements*
- A. Upon request of Contractor, Owner shall furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner's obligations under the Contract (including obligations under proposed changes in the Work).
- 9.11 *Safety Programs*
- A. While at the Site, Owner's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Owner has been informed.
- B. Owner shall furnish copies of any applicable Owner safety programs to Contractor.

## **ARTICLE 10—ENGINEER'S STATUS DURING CONSTRUCTION**

- 10.01 *Owner's Representative*
- A. Engineer will be Owner's representative during the construction period. The duties and responsibilities and the limitations of authority of Engineer as Owner's representative during construction are set forth in the Contract.

#### 10.02 *Visits to Site*

- A. Engineer will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe, as an experienced and qualified design professional, the progress that has been made and the quality of the various aspects of Contractor's executed Work. Based on information obtained during such visits and observations, Engineer, for the benefit of Owner, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. Engineer's efforts will be directed toward providing for Owner a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, Engineer will keep Owner informed of the progress of the Work and will endeavor to guard Owner against defective Work.
- B. Engineer's visits and observations are subject to all the limitations on Engineer's authority and responsibility set forth in Paragraph 10.07. Particularly, but without limitation, during or as a result of Engineer's visits or observations of Contractor's Work, Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

#### 10.03 *Resident Project Representative*

- A. If Owner and Engineer have agreed that Engineer will furnish a Resident Project Representative to represent Engineer at the Site and assist Engineer in observing the progress and quality of the Work, then the authority and responsibilities of any such Resident Project Representative will be as provided in writing by Owner to Contractor.
- B. If Owner designates an individual or entity who is not Engineer's consultant, agent, or employee to represent Owner at the Site, then the responsibilities and authority of such individual or entity will be as provided in writing by Owner to Contractor.

#### 10.04 *Engineer's Authority*

- A. Engineer has the authority to reject Work in accordance with Article 14.
- B. Engineer's authority as to Submittals is set forth in Paragraph 7.16.
- C. Engineer's authority as to design drawings, calculations, specifications, certifications and other Submittals from Contractor in response to Owner's delegation (if any) to Contractor of professional design services, is set forth in Paragraph 7.19.
- D. Engineer's authority as to changes in the Work is set forth in Article 11.
- E. Engineer's authority as to Applications for Payment is set forth in Article 15.

#### 10.05 *Determinations for Unit Price Work*

- A. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor as set forth in Paragraph 13.03.

#### 10.06 *Decisions on Requirements of Contract Documents and Acceptability of Work*

- A. Engineer will render decisions regarding the requirements of the Contract Documents, and judge the acceptability of the Work, pursuant to the specific procedures set forth herein for

initial interpretations, Change Proposals, and acceptance of the Work. In rendering such decisions and judgments, Engineer will not show partiality to Owner or Contractor, and will not be liable to Owner, Contractor, or others in connection with any proceedings, interpretations, decisions, or judgments conducted or rendered in good faith.

**10.07** *Limitations on Engineer's Authority and Responsibilities*

- A. Neither Engineer's authority or responsibility under this Article 10 or under any other provision of the Contract, nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer, will create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor or any Contractor-Related Entity.
- B. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.
- C. Engineer will not be responsible for the acts or omissions of Contractor or of any Contractor-Related Entity.
- D. Engineer's review of the Application for Final Payment and accompanying documentation, and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Contractor under Paragraph 15.06.A, will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals, that the results certified indicate compliance with the Contract Documents.
- E. The limitations upon authority and responsibility set forth in this Paragraph 10.07 also apply to the Resident Project Representative, if any.

**10.08** *Compliance with Safety Program*

- A. While at the Site, Engineer's employees and representatives will comply with the specific applicable requirements of Owner's and Contractor's safety programs of which Engineer has been informed.

**ARTICLE 11—CHANGES TO THE CONTRACT**

**11.01** *Amending and Supplementing the Contract*

- A. The Contract may be amended or supplemented by a Change Order, a Work Change Directive, or a Field Order.
- B. If an amendment or supplement to the Contract includes a change in the GMP or the Contract Times, such amendment or supplement must be set forth in a Change Order.
- C. All changes to the Contract that involve: (1) the performance or acceptability of the Work; (2) the design (as set forth in the Drawings, Specifications, or otherwise); or (3) other engineering or technical matters, must be supported by Engineer's recommendation. Owner and Contractor may amend other terms and conditions of the Contract without the recommendation of the Engineer.

#### 11.02 *Change Orders*

- A. Owner and Contractor shall execute appropriate Change Orders covering:
  - 1. Changes the GMP or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive;
  - 2. Changes the GMP resulting from an Owner set-off, unless Contractor has duly contested such set-off;
  - 3. Changes in the Work which are: (a) ordered by Owner pursuant to Paragraph 11.05, (b) required because of Owner's acceptance of defective Work under Paragraph 14.04 or Owner's correction of defective Work under Paragraph 14.07, or (c) agreed to by the parties, subject to the need for Engineer's recommendation if the change in the Work involves the design (as set forth in the Drawings, Specifications, or otherwise) or other engineering or technical matters; and
  - 4. Changes that embody the substance of any final and binding results under: Paragraph 11.03.B, resolving the impact of a Work Change Directive; Paragraph 11.09, concerning Change Proposals; Article 12, Claims; Paragraph 13.02.D, final adjustments resulting from Allowance Payment Items; Paragraph 13.03.D, final adjustments relating to determination of quantities for Unit Price Work; and similar provisions.
- B. If Owner or Contractor refuses to execute a Change Order that is required to be executed under the terms of Paragraph 11.02.A, it will be deemed to be of full force and effect, as if fully executed.

#### 11.03 *Work Change Directives*

- A. A Work Change Directive will not change the GMP or the Contract Times but is evidence that the parties expect that the modification ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order, following negotiations by the parties as to the Work Change Directive's effect, if any, on the GMP and Contract Times; or, if negotiations are unsuccessful, by a determination under the terms of the Contract Documents governing adjustments, expressly including Paragraph 11.07 regarding change of the GMP.
- B. If Owner has issued a Work Change Directive and:
  - 1. Contractor believes that an adjustment in the Contract Times or the GMP is necessary, then Contractor shall submit any Change Proposal seeking such an adjustment no later than 30 days after the completion of the Work set out in the Work Change Directive.
  - 2. Owner believes that an adjustment in the Contract Times or the GMP is necessary, then Owner shall submit any Claim seeking such an adjustment no later than 60 days after issuance of the Work Change Directive.

#### 11.04 *Field Orders*

- A. Engineer may authorize minor changes in the Work if the changes do not involve an adjustment in the GMP or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Such changes will be accomplished by a Field Order and will be binding on Owner and also on Contractor, which shall perform the Work involved promptly.

- B. If Contractor believes that a Field Order justifies an adjustment in the GMP or Contract Times, then before proceeding with the Work at issue, Contractor shall submit a Change Proposal as provided herein.

11.05 *Owner-Authorized Changes in the Work*

- A. Without invalidating the Contract and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work. Changes involving the design (as set forth in the Drawings, Specifications, or otherwise) or other engineering or technical matters will be supported by Engineer's recommendation.
- B. Such changes in the Work may be accomplished by a Change Order, if Owner and Contractor have agreed as to the effect, if any, of the changes on the Contract Times or the GMP; or by a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved; or, in the case of a deletion in the Work, promptly cease construction activities with respect to such deleted Work. Added or revised Work must be performed under the applicable conditions of the Contract Documents.
- C. Nothing in this Paragraph 11.05 obligates Contractor to undertake work that Contractor reasonably concludes cannot be performed in a manner consistent with Contractor's safety obligations under the Contract Documents or Laws and Regulations.

11.06 *Unauthorized Changes in the Work*

- A. Contractor shall not be entitled to an increase in the GMP or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents, as amended, modified, or supplemented, except in the case of an emergency as provided in Paragraph 7.15 or in the case of uncovering Work as provided in Paragraph 14.05.C.2.

11.07 *Change of the GMP*

- A. The GMP may only be changed by a Change Order. Any Change Proposal for an adjustment in the GMP must comply with the provisions of Paragraph 11.09. Any Claim for an adjustment of the GMP must comply with the provisions of Article 12.
- B. An adjustment in the GMP will be determined as follows:
  - 1. Where the Work involved is covered by unit prices contained in the Contract Documents, then by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 13.03);
  - 2. Where the Work involved is not covered by unit prices contained in the Contract Documents, then by a mutually agreed lump sum (which may include an allowance for Contractor's Fee; or
  - 3. Where the Work involved is not covered by unit prices contained in the Contract Documents and the parties do not reach mutual agreement to a lump sum, then on the basis of the Cost of the Work (determined as provided in Paragraph 13.01) plus Contractor's Fee, as determined in Paragraph 7.02 of the Agreement.
  - 4. Where the Work involved results in an extension of the Contract Times as set forth in Paragraph 11.08 below, Contractor's General Conditions may be subject to an adjustment: (a) to the extent that Contractor demonstrates that Contractor's General Conditions have been increased as a result of such time extension; and (b) provided,

however that the basis for the time extension does not arise from the events set forth in Paragraph 4.05.C above.

11.08 *Change of the Contract Times*

- A. The Contract Times may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Times must comply with the provisions of Paragraph 11.09. Any Claim for an adjustment in the Contract Times must comply with the provisions of Article 12.
- B. Delay, disruption, and interference in the Work, and any related changes in Contract Times, are addressed in and governed by Paragraph 4.05.

11.09 *Change Proposals*

A. *Purpose and Content:* Contractor shall submit a Change Proposal to Engineer to request an adjustment in the Contract Times or the GMP; contest an initial decision by Engineer concerning the requirements of the Contract Documents or relating to the acceptability of the Work under the Contract Documents; challenge a set-off against payment due; or seek other relief under the Contract. The Change Proposal will specify any proposed change in Contract Times or the GMP, or other proposed relief, and explain the reason for the proposed change, with citations to any governing or applicable provisions of the Contract Documents. Each Change Proposal will address only one issue, or a set of closely related issues.

B. *Change Proposal Procedures*

- 1. *Submittal:* Contractor shall submit each Change Proposal to Engineer within 30 days after the start of the event giving rise thereto, or after such initial decision.
- 2. *Supporting Data:* The Contractor shall submit supporting data, including the proposed change the GMP or Contract Time (if any), to the Engineer and Owner within 15 days after the submittal of the Change Proposal.
  - a. Change Proposals based on or related to delay, interruption, or interference must comply with the provisions of Paragraphs 4.05.D and 4.05.E.
  - b. Change proposals related to a change of the GMP must include full and detailed accounts of Equipment and Materials and labor and equipment used for the subject Work.

The supporting data must be accompanied by a written statement that the supporting data are accurate and complete, and that any requested time or price adjustment is the entire adjustment to which Contractor believes it is entitled as a result of said event.

- 3. *Engineer's Initial Review:* Engineer will advise Owner regarding the Change Proposal, and consider any comments or response from Owner regarding the Change Proposal. If in its discretion Engineer concludes that additional supporting data is needed before conducting a full review and making a decision regarding the Change Proposal, then Engineer may request that Contractor submit such additional supporting data by a date specified by Engineer, prior to Engineer beginning its full review of the Change Proposal.
- 4. *Engineer's Full Review and Action on the Change Proposal:* Upon receipt of Contractor's supporting data (including any additional data requested by Engineer), Engineer will conduct a full review of each Change Proposal and, within 30 days after such receipt of the Contractor's supporting data, either approve the Change Proposal in whole, deny it in whole, or approve it in part and deny it in part. Such actions must be in writing, with a



copy provided to Owner and Contractor. If Engineer does not take action on the Change Proposal within 30 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of Engineer's inaction the Change Proposal is deemed denied, thereby commencing the time for appeal of the denial under Article 12.

5. *Binding Decision*: Engineer's decision is final and binding upon Owner and Contractor, unless Owner or Contractor appeals the decision by filing a Claim under Article 12.
- C. *Resolution of Certain Change Proposals*: If the Change Proposal does not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters, then Engineer will notify the parties in writing that the Engineer is unable to resolve the Change Proposal. For purposes of further resolution of such a Change Proposal, such notice will be deemed a denial, and Contractor may choose to seek resolution under the terms of Article 12.
- D. *Post-Completion*: Contractor shall not submit any Change Proposals after Engineer issues a written recommendation of Final Payment pursuant to Paragraph 15.06.B.

#### 11.10 *Notification to Surety*

- A. If the provisions of any bond require notice to be given to a surety of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, the GMP or Contract Times), the giving of any such notice will be Contractor's responsibility. The amount of each applicable bond will be adjusted to reflect the effect of any such change.

### **ARTICLE 12—CLAIMS**

#### 12.01 *Claims*

- A. *Claims Process*: The following disputes between Owner and Contractor are subject to the Claims process set forth in this article:
  1. Appeals by Owner or Contractor of Engineer's decisions regarding Change Proposals;
  2. Owner demands for adjustments in the GMP or Contract Times, or other relief under the Contract Documents;
  3. Disputes that Engineer has been unable to address because they do not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters; and
  4. Subject to the waiver provisions of Paragraph 15.07, any dispute arising after Engineer has issued a written recommendation of Final Payment pursuant to Paragraph 15.06.B.
- B. *Submittal of Claim*: The party submitting a Claim shall deliver it directly to the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto; in the case of appeals regarding Change Proposals within 30 days of the decision under appeal. The party submitting the Claim shall also furnish a copy to the Engineer, for its information only. The responsibility to substantiate a Claim rests with the party making the Claim. In the case of a Claim by Contractor seeking an increase in the Contract Times or the GMP, Contractor shall certify that the Claim is made in good faith, that the supporting data are accurate and complete, and that to the best of Contractor's knowledge and belief the

amount of time or money requested accurately reflects the full amount to which Contractor is entitled.

- C. *Review and Resolution:* The party receiving a Claim shall review it thoroughly, giving full consideration to its merits. The two parties shall seek to resolve the Claim through the exchange of information and direct negotiations, with the understanding that such exchange and negotiations will initially take place between the authorized representatives of Owner and Contractor, and then, if the Claim is not resolved, by negotiations between senior representatives of Owner and Contractor. All actions taken on a Claim will be stated in writing and submitted to the other party, with a copy to Engineer.
- D. *Mediation*
  - 1. At any time after initiation of a Claim, Owner and Contractor may mutually agree to mediation of the underlying dispute. The agreement to mediate will stay the Claim submittal and response process.
  - 2. If Owner and Contractor agree to mediation, then after 60 days from such agreement, either Owner or Contractor may unilaterally terminate the mediation process, and the Claim submittal and decision process will resume as of the date of the termination. If the mediation proceeds but is unsuccessful in resolving the dispute, the Claim submittal and decision process will resume as of the date of the conclusion of the mediation, as determined by the mediator.
  - 3. Owner and Contractor shall each pay one-half of the mediator's fees and costs.
- E. *Partial Approval:* If the party receiving a Claim approves the Claim in part and denies it in part, such action will be final and binding, subject to the right of the other party to invoke the procedure set forth in Article 17 for final resolution of disputes.
- F. *Denial of Claim:* If efforts to resolve a Claim are not successful, the party receiving the Claim may deny it by giving written notice of denial to the other party. If the receiving party does not take action on the Claim within 90 days, as may be extended by mutual agreement of the parties, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of the inaction, the Claim is deemed denied, subject to the right of the parties to invoke the procedure set forth in Article 17 for the final resolution of disputes.
- G. *Final and Binding Results:* If the parties reach a mutual agreement regarding a Claim, whether through approval of the Claim, direct negotiations, mediation, or otherwise; or if a Claim is approved in part and denied in part, or denied in full, and such actions become final and binding; then the results of the agreement or action on the Claim will be incorporated in a Change Order or other written document to the extent they affect the Contract, including the Work, the Contract Times, or the GMP.

**ARTICLE 13—COST OF THE WORK; CONTRACTOR’S GENERAL CONDITIONS; ALLOWANCES; UNIT PRICE WORK**

**13.01 *Cost of the Work and Contractor’s General Conditions***

- A. *Purposes for Determination of Cost of the Work and Contractor’s General Conditions:* The terms “Cost of the Work” and “Contractor’s General Conditions” are used for two distinct purposes:
  - 1. To determine Cost of the Work and Contractor’s General Conditions as components of the GMP; and
  - 2. When needed to determine the value of a Change Order, Change Proposal, Claim, set-off, or other adjustment to the GMP. When the value of any such adjustment is determined on the basis of Cost of the Work and/or Contractor’s General Conditions, Contractor is entitled only to those additional costs directly required because of the change in the Work or because of the event giving rise to the adjustment.
- B. *Costs Included:* The costs included as Cost of the Work and Contractor’s General Conditions are identified in the Agreement.
- C. *Costs Excluded:* The Cost of the Work and Contractor’s General Conditions shall not include any Non-Reimbursable Costs.
- D. *Documentation and Audit:* For the avoidance of doubt, all of the Costs of the Work and Contractor’s General Conditions shall be made available to Owner on an Open Book Basis, and subject to the Books and Records requirements of the Agreement to Owner, and preserve such documents, to the same extent required of Contractor.

**13.02 *Allowances***

- A. If Applicable, it is understood that Contractor has included in the GMP Allowance Payment Items, with corresponding Allowance Payment Values. The administration of such items shall be as set forth in the Agreement.
- B. *Owner Contingency:* Contractor agrees that an Owner Contingency, if any, is for the sole use of Owner to cover unanticipated costs.

**13.03 *Unit Price Work***

- A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the GMP will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.
- B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of determining the GMP. Payments to Contractor for Unit Price Work will be based on actual quantities.
- C. Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor’s overhead and profit for each separately identified item.
- D. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor. Engineer will review with Contractor the Engineer’s preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). Engineer’s written decision

thereon will be final and binding (except as modified by Engineer to reflect changed factual conditions or more accurate data) upon Owner and Contractor, and the final adjustment of the GMP will be set forth in a Change Order, subject to the provisions of the following paragraph.

E. *Adjustments in Unit Price*

1. Contractor or Owner shall be entitled to an adjustment in the unit price with respect to an item of Unit Price Work if:
  - a. the quantity of the item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement; and
  - b. Contractor's unit costs to perform the item of Unit Price Work have changed materially and significantly as a result of the quantity change.
2. The adjustment in unit price will account for and be coordinated with any related changes in quantities of other items of Work, and in Contractor's costs to perform such other Work, such that the resulting overall change the GMP is equitable to Owner and Contractor.
3. Adjusted unit prices will apply to all units of that item.

**ARTICLE 14—TESTS AND INSPECTIONS; CORRECTION, REMOVAL, OR ACCEPTANCE OF DEFECTIVE WORK**

14.01 *Access to Work*

- A. Owner, Engineer, their consultants and other representatives and personnel of Owner, independent testing laboratories, and authorities having jurisdiction have access to the Site and the Work at reasonable times for their observation, inspection, and testing. Contractor shall provide them proper and safe conditions for such access and advise them of Contractor's safety procedures and programs so that they may comply with such procedures and programs as applicable.

14.02 *Tests, Inspections, and Approvals*

- A. Contractor shall give Engineer timely notice of readiness of the Work (or specific parts thereof) for all required inspections and tests, and shall cooperate with inspection and testing personnel to facilitate required inspections and tests.
- B. Owner shall retain and pay for the services of an independent inspector, testing laboratory, or other qualified individual or entity to perform all inspections and tests expressly required by the Contract Documents to be furnished and paid for by Owner, except that costs incurred in connection with tests or inspections of covered Work will be governed by the provisions of Paragraph 14.05.
- C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish Engineer the required certificates of inspection or approval.

- D. Contractor shall be responsible for arranging, obtaining, and paying for all inspections and tests required:
1. by the Contract Documents, unless the Contract Documents expressly allocate responsibility for a specific inspection or test to Owner;
  2. to attain Owner's and Engineer's acceptance of Equipment and Materials;
  3. by manufacturers of Equipment furnished under the Contract Documents;
  4. for testing, adjusting, and balancing of mechanical, electrical, and other Equipment; and
  5. for acceptance of Materials, mix designs, or Equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work.
- Such inspections and tests will be performed by independent inspectors, testing laboratories, or other qualified individuals or entities acceptable to Owner and Engineer.
- E. If the Contract Documents require the Work (or part thereof) to be approved by Owner, Engineer, or another designated individual or entity, then Contractor shall assume full responsibility for arranging and obtaining such approvals.
- F. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, Contractor shall, if requested by Engineer, uncover such Work for observation. Such uncovering will be at Contractor's expense unless Contractor had given Engineer timely notice of Contractor's intention to cover the same and Engineer had not acted with reasonable promptness in response to such notice.

#### 14.03 *Defective Work*

- A. *Contractor's Obligation*: It is Contractor's obligation to assure that the Work is not defective.
- B. *Engineer's Authority*: Engineer has the authority to determine whether Work is defective, and to reject defective Work.
- C. *Notice of Defects*: Prompt written notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor.
- D. *Correction, or Removal and Replacement*: Promptly after receipt of written notice of defective Work, Contractor shall correct all such defective Work, whether or not fabricated, installed, or completed, or, if Engineer has rejected the defective Work, remove it from the Project and replace it with Work that is not defective.
- E. *Preservation of Warranties*: When correcting defective Work, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.
- F. *Costs and Damages*: In addition to its correction, removal, and replacement obligations with respect to defective Work, Contractor shall pay all claims, costs, losses, and damages arising out of or relating to defective Work, including but not limited to the cost of the inspection, testing, correction, removal, replacement, or reconstruction of such defective Work, fines levied against Owner by governmental authorities because the Work is defective, and the costs of repair or replacement of work of others resulting from defective Work. Prior to Final Payment, if Owner and Contractor are unable to agree as to the measure of such claims, costs, losses, and damages resulting from defective Work, then Owner may impose a reasonable set-off against payments due under Article 15.

#### 14.04 *Acceptance of Defective Work*

- A. If, instead of requiring correction or removal and replacement of defective Work, Owner prefers to accept it, Owner may do so (subject, if such acceptance occurs prior to Final Payment, to Engineer's confirmation that such acceptance is in general accord with the design intent and applicable engineering principles, and will not endanger public safety). Contractor shall pay all claims, costs, losses, and damages attributable to Owner's evaluation of and determination to accept such defective Work (such costs to be approved by Engineer as to reasonableness), and for the diminished value of the Work to the extent not otherwise paid by Contractor. If any such acceptance occurs prior to Final Payment, the necessary revisions in the Contract Documents with respect to the Work will be incorporated in a Change Order. If the parties are unable to agree as to the decrease in the GMP, reflecting the diminished value of Work so accepted, then Owner may impose a reasonable set-off against payments due under Article 15. If the acceptance of defective Work occurs after Final Payment, Contractor shall pay an appropriate amount to Owner.

#### 14.05 *Uncovering Work*

- A. Engineer has the authority to require additional inspection or testing of the Work, whether or not the Work is fabricated, installed, or completed.
- B. If any Work is covered contrary to the written request of Engineer, then Contractor shall, if requested by Engineer, uncover such Work for Engineer's observation, and then replace the covering, all at Contractor's expense.
- C. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, then Contractor, at Engineer's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Engineer may require, that portion of the Work in question, and provide all necessary labor, Equipment and Material.
  - 1. If it is found that the uncovered Work is defective, Contractor shall be responsible for all claims, costs, losses, and damages arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and pending Contractor's full discharge of this responsibility the Owner shall be entitled to impose a reasonable set-off against payments due under Article 15.
  - 2. If the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the GMP or an extension of the Contract Times, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, then Contractor may submit a Change Proposal within 30 days of the determination that the Work is not defective.

#### 14.06 *Owner May Stop the Work*

- A. If the Work is defective, or Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, then Owner may order Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of Owner to stop the Work will not give rise to any duty on the part of Owner to exercise this

right for the benefit of Contractor, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

**14.07 Owner May Correct Defective Work**

- A. Contractor shall, within seven (7) days of receipt of written notice from Engineer that the Work is defective, take meaningful steps to commence correction of such nonconforming Work, including the correction, removal or replacement of the defective Work and any damage caused to other parts of the Work affected by the nonconforming Work. If Contractor fails to commence the necessary steps within such seven (7) day period, then Owner, in addition to any other remedies provided under the Contract Documents, may send a seven (7) days' written notice to Contractor, for Contractor to correct or remedy any such deficiency.
- B. In exercising the rights and remedies under this Paragraph 14.07, Owner shall proceed expeditiously. In connection with such corrective or remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's services related thereto, and incorporate in the Work all Equipment and Materials stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner's representatives, agents and employees, Owner's other contractors, and Engineer and Engineer's consultants access to the Site to enable Owner to exercise the rights and remedies under this paragraph.
- C. All claims, costs, losses, and damages incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 14.07 will be charged against Contractor as set-offs against payments due under Article 15. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's defective Work.
- D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner's rights and remedies under this Paragraph 14.07.

**ARTICLE 15—PAYMENTS TO CONTRACTOR; SET-OFFS; COMPLETION; CORRECTION PERIOD**

**15.01 Progress Payments**

- A. *Basis for Progress Payments:* The Schedule of Values established as provided in Article 2 will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments for Unit Price Work will be based on the number of units completed during the pay period, as determined under the provisions of Paragraph 13.03. Progress payments for cost-based Work will be based on Cost of the Work completed by Contractor during the pay period.
- B. *Applications for Payments*
  - 1. On or about the first (1<sup>st</sup>) day of each month, Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents.
  - 2. If payment is requested on the basis of Equipment or Materials not yet incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment must also be accompanied by: (a) a bill of sale,

invoice, copies of subcontract or purchase order payments, or other documentation establishing full payment by Contractor for the Equipment and Materials; (b) at Owner's request, documentation warranting that Owner has received the Equipment and Materials free and clear of all Liens; and (c) evidence that the Equipment and Materials are covered by appropriate property insurance, a warehouse bond, or other arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner.

3. Beginning with the second Application for Payment, each Application must include an affidavit of Contractor stating that all previous progress payments received by Contractor have been applied to discharge Contractor's legitimate obligations associated with prior Applications for Payment.
4. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.

C. *Review of Applications*

1. Engineer will, within 10 days after receipt of each Application for Payment, including each resubmittal, either indicate in writing a recommendation of payment and present the Application to Owner, or return the Application to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.
2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer's observations of the executed Work as an experienced and qualified design professional, and on Engineer's review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:
  - a. the Work has progressed to the point indicated;
  - b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, the results of any subsequent tests called for in the Contract Documents, a final determination of quantities and classifications for Unit Price Work under Paragraph 13.03, and any other qualifications stated in the recommendation); and
  - c. the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Work.
3. By recommending any such payment Engineer will not thereby be deemed to have represented that:
  - a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract; or
  - b. there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.



4. Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment, including Final Payment, will impose responsibility on Engineer:
  - a. to supervise, direct, or control the Work;
  - b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto;
  - c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work;
  - d. to make any examination to ascertain how or for what purposes Contractor has used the money paid by Owner; or
  - e. to determine that title to any of the Work, Equipment and Materials has passed to Owner free and clear of any Liens.
5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Owner stated in Paragraph 15.01.C.2.
6. Engineer will recommend reductions in payment (set-offs) necessary in Engineer's opinion to protect Owner from loss because:
  - a. the Work is defective, requiring correction or replacement;
  - b. the GMP has been reduced by Change Orders;
  - c. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;
  - d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible; or
  - e. Engineer has actual knowledge of the occurrence of any of the events that would constitute a default by Contractor and therefore justify termination for cause under the Contract Documents.

**D. *Payment Becomes Due***

1. Twenty (20) days after presentation of the Application for Payment to Owner with Engineer's recommendation, the amount recommended (subject to any Owner set-offs) will become due, and when due will be paid by Owner to Contractor.

**E. *Reductions in Payment by Owner***

1. In addition to any reductions in payment (set-offs) recommended by Engineer, Owner is entitled to impose a set-off against payment based on any of the following:
  - a. Claims have been made against Owner based on Contractor's conduct in the performance or furnishing of the Work, or Owner has incurred costs, losses, or damages resulting from Contractor's conduct in the performance or furnishing of the Work, including but not limited to claims, costs, losses, or damages from workplace injuries, adjacent property damage, non-compliance with Laws and Regulations, and patent infringement;

- b. Contractor has failed to take reasonable and customary measures to avoid damage, delay, disruption, and interference with other work at or adjacent to the Site;
  - c. Contractor has failed to provide and maintain required bonds or insurance;
  - d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible;
  - e. Owner has incurred extra charges or engineering costs related to submittal reviews, evaluations of proposed substitutes, tests and inspections, or return visits to manufacturing or assembly facilities;
  - f. The Work is defective, requiring correction or replacement;
  - g. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;
  - h. The GMP has been reduced by Change Orders;
  - i. An event has occurred that would constitute a default by Contractor and therefore justify a termination for cause;
  - j. Liquidated or other damages have accrued as a result of Contractor's failure to achieve Milestones, Substantial Completion, or Final Completion;
  - k. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens; or
  - l. Other items entitle Owner to a set-off against the amount recommended.
2. If Owner imposes any set-off against payment, whether based on its own knowledge or on the written recommendations of Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and the specific amount of the reduction, and promptly pay Contractor any amount remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, if Contractor remedies the reasons for such action. The reduction imposed will be binding on Contractor unless it duly submits a Change Proposal contesting the reduction.
3. Upon a subsequent determination that Owner's refusal of payment was not justified, the amount wrongfully withheld will be treated as an amount due as determined by Paragraph 15.01.D.1 and subject to interest as provided in the Agreement.

#### 15.02 *Contractor's Warranty of Title*

- A. Contractor warrants and guarantees that title to all Work, Equipment and Materials furnished under the Contract will pass to Owner free and clear of: (1) all Liens and other title defects; and (2) all patent, licensing, copyright, or royalty obligations, no later than 7 days after the time of payment by Owner.

#### 15.03 *Substantial Completion*

- A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete and request that Engineer issue a certificate of Substantial Completion. Contractor shall at the same time

submit to Owner and Engineer an initial draft of punch list items to be completed or corrected before Final Payment.

- B. Promptly after Contractor's notification, Owner, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor in writing giving the reasons therefor.
- C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a preliminary certificate of Substantial Completion which will fix the date of Substantial Completion. Engineer shall attach to the certificate a punch list of items to be completed or corrected before Final Payment. Owner shall have 7 days after receipt of the preliminary certificate during which to make written objection to Engineer as to any provisions of the certificate or attached punch list. If, after considering the objections to the provisions of the preliminary certificate, Engineer concludes that the Work is not substantially complete, Engineer will, within 14 days after submission of the preliminary certificate to Owner, notify Contractor in writing that the Work is not substantially complete, stating the reasons therefor. If Owner does not object to the provisions of the certificate, or if despite consideration of Owner's objections Engineer concludes that the Work is substantially complete, then Engineer will, within said 14 days, execute and deliver to Owner and Contractor a final certificate of Substantial Completion (with a revised punch list of items to be completed or corrected) reflecting such changes from the preliminary certificate as Engineer believes justified after consideration of any objections from Owner.
- D. At the time of receipt of the preliminary certificate of Substantial Completion, Owner and Contractor will confer regarding Owner's use or occupancy of the Work following Substantial Completion, review the builder's risk insurance policy with respect to the end of the builder's risk coverage, and confirm the transition to coverage of the Work under a permanent property insurance policy held by Owner. Unless Owner and Contractor agree otherwise in writing, Owner shall bear responsibility for security, operation, protection of the Work, property insurance, maintenance, heat, and utilities upon Owner's use or occupancy of the Work.
- E. After Substantial Completion the Contractor shall promptly begin work on the punch list of items to be completed or corrected prior to Final Payment. In appropriate cases Contractor may submit monthly Applications for Payment for completed punch list items, following the progress payment procedures set forth above.
- F. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to remove its property and complete or correct items on the punch list.
- G. Contractor will provide Owner with all Supplier warranties upon Substantial Completion

#### 15.04 *Partial Use or Occupancy*

- A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which Owner, Engineer, and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by Owner for its intended purpose without

significant interference with Contractor's performance of the remainder of the Work, subject to the following conditions:

1. At any time, Owner may request in writing that Contractor permit Owner to use or occupy any such part of the Work that Owner believes to be substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor, Owner, and Engineer will follow the procedures of Paragraph 15.03.A through 15.03.E for that part of the Work.
2. At any time, Contractor may notify Owner and Engineer in writing that Contractor considers any such part of the Work substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.
3. Within seven (7) days after such request, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Engineer does not consider that part of the Work to be substantially complete, Engineer will notify Owner and Contractor in writing giving the reasons therefor. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 15.03 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.
4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 15.03 regarding builder's risk or other property insurance.

15.05 *Final Inspection*

- A. Upon written notice from Contractor that the entire Work or an agreed portion thereof is complete, Engineer will promptly make a final inspection with Owner and Contractor and will notify Contractor in writing of all particulars in which this inspection reveals that the Work, or agreed portion thereof, is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

15.06 *Final Payment*

A. *Application for Payment*

1. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance, certificates of inspection, annotated record documents (as provided in Paragraph 7.12), and other documents, Contractor may make application for Final Payment.
2. The Application for Final Payment must be accompanied (except as previously delivered) by:
  - a. all documentation called for in the Contract Documents;
  - b. consent of the surety, if any, to Final Payment;
  - c. satisfactory evidence that all title issues have been resolved such that title to all Work, Equipment and Materials has passed to Owner free and clear of any Liens or other title defects, or will so pass upon Final Payment.
  - d. a list of all duly pending Change Proposals and Claims; and

- e. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of the Work, and of Liens filed in connection with the Work.
3. In lieu of the releases or waivers of Liens specified in Paragraph 15.06.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (a) the releases and receipts include all labor, services, Equipment and Material for which a Lien could be filed; and (b) all payrolls, Equipment and Material bills, and other indebtedness connected with the Work for which Owner might in any way be responsible, or which might in any way result in liens or other burdens on Owner's property, have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, Contractor may furnish a bond or other collateral satisfactory to Owner to indemnify Owner against any Lien, or Owner at its option may issue joint checks payable to Contractor and specified Subcontractors and Suppliers.
- B. *Engineer's Review of Application for Final Payment and Recommendation of Payment:* If, on the basis of Engineer's observation of the Work during construction and final inspection, and Engineer's review of the Application for Final Payment and accompanying documentation as required by the Contract Documents, Engineer is satisfied that the Work has been completed and Contractor's other obligations under the Contract have been fulfilled, Engineer will, within 10 days after receipt of the Application for Final Payment, indicate in writing Engineer's recommendation of Final Payment and present the Application for Final Payment to Owner for payment. Such recommendation will account for any set-offs against payment that are necessary in Engineer's opinion to protect Owner from loss for the reasons stated above with respect to progress payments. Otherwise, Engineer will return the Application for Final Payment to Contractor, indicating in writing the reasons for refusing to recommend Final Payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Final Payment.
- C. *Notice of Acceptability:* In support of its recommendation of payment of the Application for Final Payment, Engineer will also give written notice to Owner and Contractor that the Work is acceptable, subject to stated limitations in the notice and to the provisions of Paragraph 15.07.
- D. *Final Completion:* The Work is complete (subject to surviving obligations) when it is ready for Final Payment as established by the Engineer's written recommendation of Final Payment and issuance of notice of the acceptability of the Work.
- E. *Final Payment Becomes Due:* Upon receipt from Engineer of the Application for Final Payment and accompanying documentation, Owner shall set off against the amount recommended by Engineer for Final Payment any further sum to which Owner is entitled, including but not limited to set-offs for liquidated damages and set-offs allowed under the provisions of this Contract with respect to progress payments. Owner shall pay the resulting balance due to Contractor within 30 days of Owner's receipt of the Application for Final Payment from Engineer.

#### 15.07 Waiver of Claims

- A. By making Final Payment, Owner waives its claim or right to liquidated damages or other damages for late completion by Contractor, except as set forth in an outstanding Claim, appeal under the provisions of Article 17, set-off, or express reservation of rights by Owner. Owner reserves all other claims or rights after Final Payment.

- B. The acceptance of Final Payment by Contractor will constitute a waiver by Contractor of all claims and rights against Owner other than those pending matters that have been duly submitted as a Claim, or appealed under the provisions of Article 17.

15.08 *Correction Period*

- A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the terms of any applicable special guarantee required by the Contract Documents), Owner gives Contractor written notice that any Work has been found to be defective, or that Contractor's repair of any damages to the Site or adjacent areas has been found to be defective, then after receipt of such notice of defect Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:
  - 1. correct the defective repairs to the Site or such adjacent areas;
  - 2. correct such defective Work;
  - 3. remove the defective Work from the Project and replace it with Work that is not defective, if the defective Work has been rejected by Owner, and
  - 4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others, or to other land or areas resulting from the corrective measures.
- B. Owner shall give any such notice of defect within 60 days of the discovery that such Work or repairs is defective. If such notice is given within such 60 days but after the end of the correction period, the notice will be deemed a notice of defective Work under Paragraph 7.17.B.
- C. If, after receipt of a notice of defect within 60 days and within the correction period, Contractor does not promptly comply with the terms of Owner's written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. Contractor shall pay all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others). Contractor's failure to pay such costs, losses, and damages within 10 days of invoice from Owner will be deemed the start of an event giving rise to a Claim under Paragraph 12.01.B, such that any related Claim must be brought within 30 days of the failure to pay.
- D. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications.
- E. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this paragraph, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.
- F. Contractor's obligations under this paragraph are in addition to all other obligations and warranties. The provisions of this paragraph are not to be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

## ARTICLE 16—SUSPENSION OF WORK AND TERMINATION

### 16.01 *Owner May Suspend Work*

- A. At any time and without cause, Owner may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by written notice to Contractor and Engineer. Such notice will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be entitled to an adjustment in the GMP or an extension of the Contract Times directly attributable to any such suspension. Any Change Proposal seeking such adjustments must be submitted no later than 30 days after the date fixed for resumption of Work.

### 16.02 *Owner May Terminate for Cause*

- A. The occurrence of any one or more of the following events will constitute a default by Contractor and justify termination for cause:
  - 1. Contractor's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable Equipment or Materials, or failure to adhere to the Progress Schedule);
  - 2. Failure of Contractor to perform or otherwise to comply with a material term of the Contract Documents;
  - 3. Contractor's disregard of Laws or Regulations of any public body having jurisdiction; or
  - 4. Contractor's repeated disregard of the authority of Owner or Engineer.
- B. If one or more of the events identified in Paragraph 16.02.A occurs, then after giving Contractor (and any surety) 10 days' written notice that Owner is considering a declaration that Contractor is in default and termination of the Contract, Owner may proceed to:
  - 1. declare Contractor to be in default, and give Contractor (and any surety) written notice that the Contract is terminated; and
  - 2. enforce the rights available to Owner under any applicable performance bond.
- C. Subject to the terms and operation of any applicable performance bond, if Owner has terminated the Contract for cause, Owner may exclude Contractor from the Site, take possession of the Work, incorporate in the Work all Equipment and Materials stored at the Site or for which Owner has paid Contractor but which are stored elsewhere, and complete the Work as Owner may deem expedient.
- D. Owner may not proceed with termination of the Contract under Paragraph 16.02.B if Contractor within 7 days of receipt of notice of intent to terminate begins to correct its failure to perform and proceeds diligently to cure such failure.
- E. If Owner proceeds as provided in Paragraph 16.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the GMP exceeds the cost to complete the Work, including all related claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals) sustained by Owner, Contractor will only be entitled to be paid for Work performed prior to its default, and the balance will be for the account of and retained by Owner. If the cost to complete the Work including such related claims, costs, losses, and damages exceeds such unpaid balance, Contractor shall pay the difference to Owner. Such

claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and, when so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this paragraph, Owner shall not be required to obtain the lowest price for the Work performed.

- F. Where Contractor's services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue, or any rights or remedies of Owner against Contractor or any surety under any payment bond or performance bond. Any retention or payment of money due Contractor by Owner will not release Contractor from liability.
- G. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 6.01.A, the provisions of that bond will govern over any inconsistent provisions of Paragraphs 16.02.B and 16.02.D.

**16.03 *Owner May Terminate for Convenience***

- A. Upon 7 days' written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):
  - 1. completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including Contractor's Fee on such Work;
  - 2. Cost of the Work and Contractor's General Conditions incurred prior to the effective date of termination in performing services and furnishing labor, Equipment or Materials, as required by the Contract Documents in connection with uncompleted Work, plus Contractor's Fee on such expenses; and
  - 3. other reasonable expenses directly attributable to termination, including costs incurred to prepare a termination for convenience cost proposal.
- B. Contractor shall not be paid for any loss of anticipated profits or revenue, post-termination overhead costs, or other economic loss arising out of or resulting from such termination.

**16.04 *Contractor May Stop Work or Terminate***

- A. If, through no act or fault of Contractor, (1) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (2) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (3) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon 7 days' written notice to Owner and Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the contract and recover from Owner payment on the same terms as provided in Paragraph 16.03.
- B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, 7 days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The provisions of this paragraph are not intended to preclude Contractor from submitting a Change Proposal for an adjustment to the GMP or Contract Times or otherwise for expenses or damage directly attributable to Contractor's stopping the Work as permitted by this paragraph.



## **ARTICLE 17—DISPUTE RESOLUTION**

### **17.01** *Commitment to Resolve Disputes*

- A. The Parties are fully committed to working with each other and agree to communicate regularly with each other at all times so as to avoid or minimize and resolve any disputes. If any disputes do arise, Contractor and Owner each commit to resolving such disputes in an amicable, professional and expeditious manner.

### **17.02** *Mediation*

- A. If a dispute cannot be resolved on terms satisfactory to both Parties, the Parties may mutually agree to mediate the dispute. Any mediation will be based upon a process mutually agreed upon by the Parties.

### **17.03** *Litigation*

- A. Any and all disputes between the Parties shall be finally resolved through litigation. Legal proceedings between the Parties shall be solely and exclusively initiated and maintained in a court of competent jurisdiction sitting in El Paso County, Texas. Contractor irrevocably consents to the jurisdiction of such courts in any such proceeding and waives any objection it may have to the jurisdiction of any such proceeding. Mediation will be a condition precedent to filing a cause of action in court.

## **ARTICLE 18—MISCELLANEOUS**

### **18.01** *Computation of Times*

- A. When any period of time is referred to in the Contract by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

### **18.02** *Cumulative Remedies*

- A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract. The provisions of this paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

### **18.03** *Waiver of Consequential Damages*

- A. To the fullest extent permitted by law, and notwithstanding any other provision of the Agreement, in no event, whether arising out of contract, breach of warranty (express or implied), tort (including negligence), strict liability, or any other cause of or form of action whatsoever, shall either Party be liable to the other for any consequential damages (including damages for loss of use, loss of profits or anticipated profits, loss of revenue, and loss of business opportunity) arising out of or in connection with the performance or non-performance of its obligations under the Contract Documents.

18.04 *No Waiver*

- A. A party's non-enforcement of any provision will not constitute a waiver of that provision, nor will it affect the enforceability of that provision or of the remainder of this Contract.

18.05 *Survival of Obligations*

- A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract, as well as all continuing obligations indicated in the Contract, will survive Final Payment, completion, and acceptance of the Work or termination of the Contract or of the services of Contractor.

18.06 *Controlling Law*

- A. This Contract is to be governed by the laws of the state of Texas, without giving effect to its conflict of law principles.

18.07 *Assignment of Contract*

- A. Unless expressly agreed to elsewhere in the Contract, no assignment by a party to this Contract of any rights under or interests in the Contract will be binding on the other party without the written consent of the party sought to be bound; and, specifically but without limitation, money that may become due and money that is due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract.

18.08 *Successors and Assigns*

- A. Owner and Contractor each binds itself, its successors, assigns, and legal representatives to the other party hereto, its successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Contract Documents.

18.09 *Headings*

- A. Article and paragraph headings are inserted for convenience only and do not constitute parts of these General Conditions.

18.10 *Severability*

If any provision or any part of a provision of the Contract Documents shall be finally determined to be superseded, invalid, illegal, or otherwise unenforceable pursuant to any applicable Legal Requirements, such determination shall not impair or otherwise affect the validity, legality, or enforceability of the remaining provision or parts of the provision of the Contract Documents, which shall remain in full force and effect as if the unenforceable provision or part were deleted.

18.11 *Amendments*

The Contract Documents may not be changed, altered, or amended in any way except in writing signed by a duly authorized representative of each party.

18.12 *Railroads*

- A. Union Pacific Railroad Company Contractor's Right of Entry: Contractor shall acquire, and pay all associated expenses (including railroad company inspection fees), Contractor's right-of-entry from, the Union Pacific Railroad Company. Refer to Union Pacific Railroad's "Contractor's Right

of Entry” form and its exhibits, included in the Project Manual following these Supplementary Conditions. Right-of-entry requirements are interrelated with the railroad liability insurance requirements and both are Contractor's cost responsibility. Contractor shall acquire railroad company's authorization prior to commencing work in the railroad right-of-way. Submit to Owner and Engineer executed copies of Contractor's "Right of Entry" form prior to commencing work on railroad property.

B. Railroad Liability Insurance: Contractor shall obtain Railroad Liability Insurance in the form and amount required by the Union Pacific Railroad Company. Such insurance shall be in effect and cover all necessary work and operations required of Contractor within the railroad right-of-way. Refer to the railroad's "Contractor's Right of Entry" form and its exhibits. Insurance requirements of this paragraph are interrelated with the right-of-entry requirements in Paragraph SC-17.09.A and is Contractor's responsibility.

C. For clarification of the requirements and costs of railroad permits and insurance, contact:

Manager Utilities Work  
Union Pacific Railroad Company  
Contracts and Real Estate Department  
1400 Douglas Street STOP 1690  
Omaha, Nebraska 68179-1690  
Phone: (402) 544-8620  
Fax: (402) 501-1519

#### 18.13 Working Near Utilities

A. Construction Adjacent to High Voltage Electric Lines:

1. Contractor shall comply with Laws and Regulations, including U.S. Occupational Safety and Health Administration (OSHA) safety standards regarding construction adjacent to high-voltage electric lines and facilities, including trenching, crane operations, final grading, and other associated work which may result in impaired clearance to an existing electrical line or facility.
2. It is a violation of OSHA regulations to operate equipment in a manner that results in persons or equipment coming within ten feet of an energized electric line. Such Laws and Regulations are enforced by OSHA, and violators are subject to penalties imposed under federal Law.
3. Texas Law prohibits function or activity where it is possible for the person performing such activity to come within six feet of an overhead power line.
4. Contractor shall notify the El Paso Electric Company in writing of Contractor's anticipated dates and times when such work is scheduled. Written notification of El Paso Electric Company shall be at least six working days prior to each scheduled activity near El Paso Electric Company power lines and facilities, so that El Paso Electric Company personnel can coordinate with Contractor to provide proper clearance of energized electric lines. No other type of notice will be acceptable and work shall not be initiated until proper clearance and arrangements are confirmed by Contractor with the El Paso Electric Company.

5. Submit written notification to:

Raul Guel, Distribution Engineering Design  
El Paso Electric Company  
P. O. Box 982  
El Paso, Texas 79960  
(915) 543-4015

6. Simultaneously submit one copy of the notification letter to Owner's Contracts Development Manager and retain copy in Contractor's file.

7. Below are selected El Paso Electric Company phone numbers:

Claims Director	(915) 543-4158
Trouble & Emergencies	(915) 543-5720
Field Services/Power Consultants	(915) 543-2255
Cable Locator	(915) 543-4051

B. Construction Adjacent to Gas Lines: Contractor shall comply with the One-Call Notification and System Protection Program developed by Southern Union Gas Company, and with State Damage Prevention Law, HB 2295:

- Contact Texas Gas Co. not less than two working days before commencing excavation activities
- Determine exact location of all underground utilities by safe and acceptable means
- Employ the two foot safety rule
- Utilize "Professional Excavator's Manual" as revised

18.14 EPCWID #1 Dewater Permit Requirements

A. A license agreement for "Discharge of Foreign Waters into District Drain Ditches" is required between Owner and the El Paso County Water Improvement District (EPCWID) #1 before Contractor may begin dewatering operations. Contractor shall be a co-licensee with Owner. Terms and conditions of the license agreement are applicable to Contractor, who will function, relative to the license EPCWID #1 agreement only, as an agent of Owner, by preparing an approvable plan and carrying out the terms of the plan and the EPCWID #1 license agreement. Contractor shall, to the extent permitted by law, defend and hold harmless Owner, its employees, insurers and agents; and the Engineer and Engineer's consultants, and their employees, officers, insurers, and agents from claims arising out of damages caused by actions, or inactions, of Contractor or as a result of EPCWID's exercise of any or all options given it under the license agreement.

B. Contractor shall prepare and submit to Engineer a "Dewatering Plan", a "Final Schedule for Dewatering", and an estimate of fees due EPCWID #1. Submit "Dewatering Plan" within 15 days of the date that the Contract Times commence running. "Dewatering Plan" shall include the estimated quantities of dewatering for each month of the Contract, the design capacity and number of pumps to be used by Contractor, and the point(s) of dewatering pump discharge. Engineer will review for acceptability the "Dewatering Plan" and, when the submittal is acceptable to Engineer, Engineer will forward it, through Owner, to EPCWID #1. Prepare and

submit the submittal and schedule the Work so that Owner receives the "Dewatering Plan" submittal not less than 14 days before the start of dewatering operations at the Site. Owner will pay the fees as estimated in the "Dewatering Plan".

C. Estimate the dewatering fees on the following basis:

1. Drain maintenance fee of \$1,000 for each six months a discharge occurs. Fee for maintenance is non-refundable. Subsequent semi-annual fee payments are payable to Owner by Contractor in advance of each respective six-month period.
2. Dewatering fee at the rate of \$150 per acre foot of water discharged. For a month in which the discharge exceeds the amount estimated under the "Dewatering Plan", Contractor shall advise Owner and Engineer in writing, that such excess fees may be due so that the Owner may consider its liability for, and take action to make payment of, such excess fees to EPCWID #1. Owner will pay such excess fees only to the extent that such fees are incurred through no fault of Contractor.

D. Samples of the discharge water shall be tested by a qualified testing laboratory hired by Contractor. Submit to Engineer results of total dissolved solids (TDS) tests, which Engineer will transmit to EPCWID #1. Submit to Engineer and Owner monthly reports of discharge quantities and quality (TDS and sulfates), which specific requirements may be more particularly indicated in the Specifications and in the associated discharge permit; Engineer will transmit monthly reports to EPCWID #1.

E. Contractor will not be eligible for final payment by Owner until final dewatering fees based upon actual quantities and damages (if any) due EPCWID # 1 have been paid and payment due from Contractor has been made. A "Final Release" from EPCWID # 1 shall be received by Owner as a condition precedent to Contractor applies for final payment.

## PRECONSTRUCTION SERVICES AGREEMENT

**THIS PRECONSTRUCTION SERVICES AGREEMENT** (this “Agreement”) is made this \_\_\_\_ day of \_\_\_\_\_, 2022 (“Effective Date”), by and between El Paso Water Utilities – Public Service Board, a component of the City of El Paso, Texas (“Owner”), and \_\_\_\_\_, a corporation organized under the laws of the state of \_\_\_\_\_ (“Contractor”), for certain services related to a construction project known as the “\_\_\_\_\_” project (“Project”).

### WITNESSETH:

**WHEREAS**, Owner has determined that its best interests are served in delivering the Project through a “construction manager at-risk” process, as provided for by Chapter 2269, Subchapter F of the Texas Government Code (“Enabling Law”); and

**WHEREAS**, under this Enabling Law, a governmental entity is to contract with: (a) an engineer for design and construction phase services to the governmental entity on the project, including preparing the project’s construction documents; and (b) a construction manager-at-risk (“CMAR”) to serve as the general contractor and to provide consultation during the design and construction of the Project; and

**WHEREAS**, Owner entered into a contract with \_\_\_\_\_ (“Engineer”), whereby Engineer was engaged to provide design and construction phase services to Owner on the Project, including the preparation of the Project’s construction documents; and

**WHEREAS**, on or about \_\_\_\_\_, 202\_, Owner issued a Request for Proposals (“RFP”) soliciting interested proposers to respond to the RFP to serve as the CMAR for the Project; and

**WHEREAS**, on or about \_\_\_\_\_, 202\_, Contractor submitted its proposal (“Proposal”) in response to the RFP; and

**WHEREAS**, on or about \_\_\_\_\_, 202\_, Owner notified Contractor that it was the successful proposer; and

**WHEREAS**, on or about \_\_\_\_\_, 202\_, the Public Service Board of the City of El Paso, Texas approved the award of this Agreement to Contractor.

**NOW, THEREFORE**, in consideration of the mutual covenants and obligations contained herein, Owner and Contractor hereby agree as follows:

### ARTICLE 1

#### DEFINITIONS AND GENERAL PRINCIPLES

1.1 **Definitions.** For the purposes of this Agreement, the following words and terms shall have the meanings specified below.

*Affiliate* means, with respect to any particular company or entity, a company or entity that: (a) owns and controls, directly or indirectly, such company or entity; (b) is owned and controlled, directly or indirectly, by such company or entity; or (c) is owned and controlled, directly or indirectly, by the same company or entity that owns and controls such company or entity. The term “control” for purposes of this definition means: (i) ownership, directly or indirectly, of fifty percent (50%) or more of the issued voting shares of a company or entity or ownership of equivalent rights to determine the decisions of such company

or entity; or (ii) having the right to appoint at least fifty percent (50%) of the members of the board of directors or equivalent governing body of such company or entity.

*Agreement* means this written document executed by Owner and Contractor, and including all Exhibits.

*Allowance Payment Item* means an item or portion of the Work which has not been defined sufficiently, or for which the Owner has yet to make certain decisions necessary, to permit pricing by Contractor.

*Allowance Payment Value* means the estimated dollar amount included in the GMP Proposal or other budget document as a placeholder value for an Allowance Payment Item.

*Baseline Schedule* means the schedule developed by Contractor in accordance with Section 5.2.4 below and approved by Owner, demonstrating, among other things, how Contractor shall complete all Work timely and achieve Substantial Completion on or before the Scheduled Substantial Completion Date.

*Books and Records* means all documents (whether paper, electronic, or other media) and electronically stored information, including, but not limited to, any and all books, correspondence, receipts, vouchers, estimates, records, contracts, cost data, schedules, subcontracts, schedules, job cost reports, and other data, including computations and projections, of Contractor related to bidding, negotiating, pricing, or performing the Preconstruction Services and/or Work.

*Books and Records Period* means that period starting on the Effective Date and ending at the later of four (4) years after: (a) Final Payment under this Agreement; or (b) Final Payment under the Construction Contract, provided, however, that if litigation, a claim, or an audit is in process, or if audit findings are not resolved, such Books and Records Period shall be extended until the later of the final conclusion of the litigation, claim, audit, or audit finding resolution.

*Confidential Information* has the meaning set forth in Section 14.6 below.

*Contingency* has the meaning set forth in Section 5.8.1 below.

*Construction Contract* means that contract awarded by Owner for the construction of the Project in accordance with the Construction Contract Documents.

*Construction Contract Documents* means those documents that are referenced as such in the Construction Contract.

*Construction Documents* means those final, complete design documents that have been signed and sealed by Engineer and are to be used for performing the Work under the Construction Contract.

*Contractor* means \_\_\_\_\_

*Contractor-Related Entity* means Contractor, Subcontractors, Sub-Subcontractors, Suppliers and anyone for whose acts any of them may be legally or contractually responsible.

*Contractor's Fee* is \_\_\_\_ percent (\_\_) and represents the compensation to Contractor for profit and Non-Reimbursable Costs.

*Contractor's General Conditions* means those costs set forth in Exhibit 5.2.1.

*Cost of the Work* means those costs set forth in Exhibit 5.2.1.

*Early Work Packages* has the meaning set forth in Section 5.9 below.

*Engineer* means \_\_\_\_\_, and its subconsultants.

*Equipment and/or Material* mean all of the equipment, materials, machinery, apparatus, structures, supplies and other goods required by the Construction Contract Documents to complete the Work and to be incorporated into the Project or provided to Owner. The term "Equipment and Materials" shall not be construed to include any construction equipment, supplies, materials, apparatus or tools owned by any Contractor-Related Entity that are used to complete the Work and are not contemplated under the Construction Contract Documents to become incorporated into the Project or to be provided to Owner.

*Guaranteed Maximum Price (GMP)* means the sum of the Cost of the Work, Contractor's General Conditions, and Contractor's Fee, as such sum may be adjusted in accordance with the Construction Contract Documents.

*GMP Proposal(s)* means that proposal submitted by Contractor to Owner under Article 5 hereof.

*GMP Proposal Design Documents* mean those design documents referenced in Section 5.2 below and upon which the GMP Proposal is based.

*Governmental Approval* means any authorization, consent, approval, license, lease, ruling, permit, certification, exemption, or registration by or with any Governmental Unit.

*Governmental Unit* means any national, state or local government, any political subdivision thereof, or any governmental, quasi-governmental, judicial, public or statutory instrumentality, administrative agency, authority, body or other person and/or entity having jurisdiction over the Site, performance of the Preconstruction Services, the Work, the Project or the Parties.

*Initial GMP Proposal* means that proposal submitted by Contractor to Owner under Article 5 hereof when the Work of the Project is divided into separate Work packages.

*Laws and/or Regulations* means all applicable federal, state and local laws, codes, ordinances, rules, statutes, regulations, orders and decrees, and other requirements of any Governmental Unit, including, without limitation, any interpretation of such items by the applicable Governmental Unit.

*Liquidated Damages* has the meaning set forth in Section 3.3.4 below.

*Non-Reimbursable Costs* mean those costs set forth in Exhibit 5.2.1.

*Notice of Intent to Award* means the written notice provided from Owner to Contractor that Owner intends to award Contractor the Construction Contract.

*Notice of Non-Award* means the written notice provided from Owner to Contractor that Owner does not intend to award Contractor the Construction Contract.

*Open Book Basis* means allowing Owner to review all underlying assumptions, records, stand-alone Subcontractor and Supplier quotes, and other data associated with each element of pricing, or any adjustment thereto, including assumptions as to Costs of the Work, schedule, composition of equipment,



equipment rates, labor rates and burdens, production rates, estimating factors, contingency and indirect costs, risk pricing, inflation and deflation rates, profit, home office overhead rates, fees, charges, levies, incentives, and other items reasonably required by Owner to satisfy itself as to the reasonableness and accuracy of the amounts proposed by Contractor.

*Owner* means El Paso Water Utilities – Public Service Board, a component unit of the City of El Paso, Texas.

*Owner Indemnitee* means and includes each of Owner and Engineer and, with respect to each of the foregoing, each of its respective representatives, officers, employees, members or other constituent entities, authorized agents, and other duly authorized representatives.

*Party or Parties* means, as applicable: (a) in the singular, Owner or Contractor; or (b) in the plural, Owner and Contractor.

*Plant* means the \_\_\_\_\_.

*Preconstruction Services* mean the work performed by Contractor under this Agreement, including but not limited to those Preconstruction Services set forth in Exhibit 2.1.

*Pre-Existing Intellectual Property* has the meaning set forth in Section 13.4 hereof.

*Project* means the \_\_\_\_\_ Project.

*Project Team* means Owner, Engineer, Contractor and other stakeholders who are responsible for making decisions regarding the Project.

*Proposal Acceptance Period* means no less than one hundred twenty (120) days from the date Owner receives the GMP Proposal from Contractor.

*Scheduled Substantial Completion Date* means the date that is set forth in the Construction Contract Documents, which is the date by which Contractor is obligated to achieve Substantial Completion of the entire Work, subject to adjustment as set forth in the Construction Contract Documents.

*Security Bond* means the bond provided by Contractor pursuant to Exhibit 7.1.1.

*Self-Perform* means Work performed by employees of the Contractor or any of its Affiliates.

*Site* means the area of the Plant upon which the Project is located, as set forth in Exhibit 1.1(b).

*Subcontract* means any contract entered into by Contractor and any other Contractor-Related Entity in connection with the carrying out a portion of this Agreement or the Work.

*Subcontractor* is any person or entity having a direct contract with Contractor as an independent contractor to perform a portion of the Work and shall include materialmen and Suppliers.

*Sub-Subcontractor* is any person or entity having a direct contract with a Subcontractor.

*Substantial Completion* means that: (a) the Work (or a specified part thereof) is sufficiently complete in accordance with the Construction Contract Documents so that Owner can beneficially use and occupy the Project (or a specified part thereof) for its intended purposes and with functionality intended;

and (b) Contractor has satisfied or fulfilled all other requirements set forth in the Construction Contract Documents for Substantial Completion.

*Supplier* is any person or entity retained by a Contractor-Related Entity to provide Equipment and Materials, or construction equipment, supplies or other goods to be used in the performance of the Work but not incorporated into the Work.

*Work* means the entire construction or the various separately identifiable parts thereof required to be provided under the Construction Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction; furnishing, installing, and incorporating all Equipment and Materials into such construction; and may include related services such as testing, start-up, and commissioning, all as required by the Construction Contract Documents.

*Work Product* means all cost estimates, schedules, bid packages, studies, data, models, documents, photographs, videos, and work developed or produced by or on behalf of Contractor, whether in hard-copy, digital or electronic data, or any other medium, and whether completed or not completed.

1.2 Contracting Approach. Owner has entered into this Agreement with Contractor for the limited purpose of having Contractor provide preconstruction services in support of the Project. As part of its scope of work, Contractor will provide Owner with a GMP Proposal(s) that will establish the commercial terms for it performing the Work in accordance with the Construction Contract Documents, including but not limited to performing the Work within the GMP and achieving Substantial Completion no later than Scheduled Substantial Completion Date. The Parties agree that if the Work of the Project is divided into separate work packages, Contractor will provide an Initial GMP Proposal. If the Parties are in agreement with the terms of the GMP Proposal or Initial GMP Proposal, it is anticipated that Owner will issue Contractor a Notice of Intent to Award, with the understanding that Construction Contract will incorporate the agreed-upon GMP Proposal or Initial GMP Proposal. If an Initial GMP Proposal is accepted by Owner, all subsequent GMP Proposals for the remainder of the Work provided by Contractor in accordance with this Agreement that are accepted by the Owner after the Parties enter the Construction Contract will be incorporated into the Construction Contract. If the Parties are unable to agree upon the terms of the GMP Proposal or Initial GMP Proposal, or if Owner determines for any other reason not to award Contractor the Construction Contract, Owner will issue Contractor a Notice of Non-Award, which will end Contractor's involvement on the Project.

1.3 Owner's Rights to Deliver the Project. For the avoidance of doubt, and notwithstanding anything else to the contrary in this Agreement, Contractor acknowledges that Owner is under no obligation to enter into any further agreement with Contractor, including the Construction Contract. Owner has the unconditional right to deliver the Project without Contractor's involvement and using, in Owner's sole and absolute discretion, whatever means of delivering the Project Owner determines to be in its best interests.

1.4 Relationship between Owner and Contractor. Owner and Contractor agree to proceed with the Project on the basis of trust, good faith and fair dealing, and shall take all actions reasonably necessary to perform this Agreement in an economical and timely manner.

## **ARTICLE 2** **SCOPE OF WORK**

2.1 Preconstruction Services. Contractor's Preconstruction Services are set forth in Exhibit 2.1 and consist of Basic Preconstruction Services and Additional Preconstruction Services.

2.2 Standard of Care. Contractor's standard of care in performing the Preconstruction Services will be the care and skill ordinarily used by construction contractors providing similar services on projects similar to this Project.

2.3 No Responsibility for Design. Notwithstanding anything to the contrary in this Agreement, Contractor is not responsible for providing, nor does Contractor control, the Project design and contents of the design documents. By performing constructability, value engineering and other reviews of the design as part of the Preconstruction Services, Contractor shall not be deemed to assume responsibility or liability, in whole or in part, for the Project design and contents of the design documents, or for any of the contractual or customary responsibilities or duties of the Engineer. However, Contractor retains the responsibility of providing written disclosure of known defects within a reasonable time after such defects are discovered or reasonably should have been discovered using ordinary diligence before or after construction.

2.4 Changes to Preconstruction Services. Owner, without invalidating this Agreement, may make changes to the Preconstruction Services, including the authorization of Additional Preconstruction Services, by written notice to Contractor. If Contractor believes that any such change will affect the cost or time to perform its responsibilities under this Agreement, Contractor shall, before proceeding with the change, notify Owner in writing and await further instruction from Owner. Contractor shall not perform any Additional Preconstruction Services, or any other work that is not specified as basic Preconstruction Services, unless approved in writing by Owner.

2.5 Construction Activities at the Site. As of the Effective Date, the Preconstruction Services do not include the performance by Contractor of any construction activities (e.g., Site clearing, demolition, or construction of permanent Work) at the Site. If Owner and Contractor determine that the best interests of the Project would be served by having Contractor perform one or more Early Work Packages involving construction activities at the Site, they will proceed in accordance with Section 5.9 below. For the avoidance of doubt, Contractor's Site visits and investigations shall not be construed as being construction activities. Additionally, the Parties agree that if the Work of the Project is divided into separate Work packages and the Parties enter into a Construction Contract after the Owner's acceptance of the Initial GMP Proposal, Contractor will perform construction activities pursuant to the Construction Contract while Contractor continues performance of Preconstruction Services for the remainder of the Work packages.

2.6 Key Personnel. Contractor's Key Personnel are set forth in Exhibit 2.6. Contractor acknowledges that the qualifications of its Key Personnel were an essential element to Contractor being awarded this Agreement, and further acknowledges the importance of its Key Personnel in successfully performing the Preconstruction Services and, if a Construction Contract is awarded to Contractor, the Work. Absent separation of employment, none of the Key Personnel may be withdrawn from the Project without prior written approval of Owner, with it being understood and agreed that Contractor will provide Owner with at least thirty (30) days written notice of any request to withdraw any Key Personnel. Any replacement personnel shall have equivalent skill, experience and reputation. Contractor shall remove or replace, or have removed or replaced, any personnel performing the work if Owner has a reasonable objection to such individual.

2.7 Project Kick-Off Meeting. The parties will meet within seven (7) days after the Effective Date to discuss issues affecting the administration of this Agreement, including potential Subcontractor involvement, processes relating to submittals and payment, and other matters that will facilitate the ability of the parties to perform their obligations under this Agreement.

**ARTICLE 3**  
**TIME FOR RENDERING PERFORMANCE**

3.1 Commencement. Contractor shall begin rendering the Preconstruction Services as of the Effective Date of the Agreement.

3.2 Performance Time. Specific periods of time and/or dates for Contractor rendering the Preconstruction Services are, as applicable, provided in Exhibit 2.1. If such periods of time or dates are changed through no fault of Contractor, the rates and amounts of compensation provided for in this Agreement shall be subject to equitable adjustment.

3.3 Project Schedule.

3.3.1 Development and Maintenance of Project Schedule. Contractor will develop and maintain the Project Schedule on behalf of the entire Project Team. The fundamental purpose of the Project Schedule is to identify, coordinate, manage and monitor the tasks and activities to be performed by all Project Team members for all phases of the Project. Among other things, the Project Schedule will depict: (a) the production of various design phase documents; (b) long-lead procurements; (c) permitting requirements; (d) any real estate and right-of-way acquisition; (e) bid packaging strategy and awards to Subcontractors and Suppliers; (f) major stages of construction; (g) coordination with third-party utilities and Governmental Units; (h) start-up and commissioning; and (i) substantial completion. Each Project Team member is responsible for complying with the Project Schedule.

3.3.2 Further Development of Project Schedule. The Project Schedule is intended to become more detailed as the design progresses, evolving from conceptual to detailed. Early Project Schedules will concentrate on milestones for each design phase deliverable (e.g., 30%, 60%, 90%, 100%) design, Equipment lead times and general construction durations. Contractor will expand and update the Project Schedule throughout the term of this Agreement such that it will not require significant changes at the start of the construction phase to incorporate Contractor's plan for the performance of the construction phase work under the Construction Contract. It is intended that the Baseline Schedule submitted by Contractor pursuant to Section 5.2.4 below will be derived from the most current Project Schedule.

3.3.3 Updates. Contractor will provide updates and/or revisions to the Project Schedule for use by the Project Team, whenever required, but no less often than monthly.

3.3.4 Liquidated Damages. If Contractor does not achieve completion of the Work required under the Construction Agreement in accordance with the Contract Times specified in the Construction Agreement, Owner will suffer damages which are difficult to determine and accurately specify. To compensate Owner for those damages, the Parties will agree upon liquidated damages ("Liquidated Damages"), which will be set forth in the Construction Agreement.

**ARTICLE 4**  
**COMPENSATION AND PAYMENT**

4.1 Compensation. Owner shall pay Contractor for services properly performed or furnished under this Agreement on the basis set forth in Exhibit 4.1.

4.2 Payment Process. Contractor shall submit an Application for Payment to Owner by the tenth (10<sup>th</sup>) day of each month following the performance of services for which Contractor is entitled to payment hereunder. Each Application for Payment shall: (a) be in the form approved by Owner; (b) identify

the services performed during the preceding month; (c) indicate the total amount requested for payment; (d) indicate the total amount paid Contractor through the date of the Application for Payment; and (e) include such other information or documentation as Owner may reasonably require.

4.3 Payment by Owner. Owner shall make payment to Contractor of all properly supported invoiced amounts in accordance with Chapter 2251 of the Texas Government Code following receipt of an acceptable Application for Payment. In the event of a disputed or contested invoice, Owner will provide notice to Contractor in accordance with Chapter 2251 of the Texas Government Code and Owner may withhold from payment only that portion so contested and shall pay the undisputed portion.

4.4 Final Payment. Owner shall make final payment to Contractor of all monies due under this Agreement in accordance with Chapter 2251 of the Texas Government Code, after its receipt from Contractor of a Final Application for Payment. The Final Application for Payment shall be accompanied by such documentation as Owner may require, including appropriate releases. Contractor shall submit its Final Application for Payment after Owner's award to Contractor of the Construction Contract or the Notice of Non-Award.

4.5 Interest. Payments due and unpaid by Owner to Contractor shall bear interest commencing thirty (30) days after payment is due as established in Chapter 2251 of Texas Government Code.

4.6 Contractor's Right to Suspend for Late Payment. If Owner fails to make any undisputed payment due Contractor for services and expenses in accordance with Chapter 2251 Texas Government Code, after receipt of Contractor's invoice, then Contractor may, after giving seven (7) days written notice to Owner, suspend performing of services under this Agreement until Owner has paid Contractor in full all undisputed amounts due.

## **ARTICLE 5** **GMP PROPOSAL**

5.1 GMP Proposal(s). When directed by Owner, Contractor shall submit to Owner a GMP Proposal in accordance with this Article 5. The Parties agree that if the Work of the Project is divided into separate Work packages, the Contractor will be directed to submit an Initial GMP Proposal for the first Work package. If the Owner and Contractor enter into a Construction Contract after the Owner's acceptance of the Initial Proposal, the Contract will provide the Owner subsequent GMP Proposals for the remainder of the Work packages in accordance with the requirements of this Agreement. The format of the GMP Proposal(s) or Initial GMP Proposal shall be initially developed by Contractor and provided to Owner for its review and approval. At a minimum, the supporting documentation will include a complete line item cost estimate indicating the itemized costs that comprise the GMP(s).

5.2 Contents of GMP Proposal(s) or Initial GMP Proposal. The GMP Proposal(s) or Initial GMP Proposal shall include the following, unless the Parties mutually agree otherwise:

- .1 A proposed GMP, which shall be the sum of:
  - (a) The estimated Cost of the Work, inclusive of the Contingency;
  - (b) Contractor's General Conditions, including the methodology proposed for calculating the amount of Contractor's General Conditions and the process by which Contractor's General Conditions will be paid; and

- (c) Contractor's Fee. The proposed GMP shall be supported by a detailed cost estimate organized in a manner agreed upon by Owner and Contractor to facilitate cost estimate reviews including any Allowance Payment Items and Contingency.
- .2 The GMP Proposal Design Documents upon which the GMP Proposal is based, with such documents to be listed and attached to the GMP Proposal.
- .3 A list of the assumptions and clarifications made by Contractor in the preparation of the GMP Proposal, which list is intended to supplement the information contained in the GMP Proposal Design Documents.
- .4 A proposed Baseline Schedule and the Scheduled Substantial and Final Completion Dates upon which the proposed GMP is based.
- .5 A Schedule of Values for all of the Work, which will include quantities and prices of items which when added together equal the proposed GMP and subdivides the Work into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work, and otherwise in form and detail as requested by Owner.
- .6 A cash flow projection estimating that portion of the proposed GMP to be due during each month of performance.
- .7 If applicable, a list of Allowance Payment Items, Allowance Payment Values, and a statement of their basis.
- .8 If applicable, a schedule of alternate prices.
- .9 If applicable, a schedule of unit prices.
- .10 If applicable, a statement of additional services which may be performed, but which are not included in the proposed GMP and which, if performed, shall be the basis for an increase in the GMP and/or Scheduled Substantial Completion Date.
- .11 A list of Subcontractors whose bids/proposals have been accepted by Owner, including the Subcontractor's classification (i.e., Small Locally-Owned Business Enterprise, Minority Business Enterprise, Woman-Owned Business Enterprise), which bids/proposals are deemed to be part of the GMP and GMP Proposal.
- .12 An updated notarized letter from Contractor's surety or sureties verifying that Contractor has bonding capacity in the amount of the proposed GMP.
- .13 A commitment letter from Contractor's insurance broker that it will provide: (a) a Builder's Risk insurance policy compliant with the terms of the Construction Contract prior to the execution of the Construction Contract; and (b) a specimen Builder's Risk insurance policy with all appropriate attachments, sub-limits, etc.
- .14 An updated list of Key Personnel and an updated organizational chart.
- .15 A completed Minority Certification and Participation Summary form demonstrating that Contractor has met the participation goals set forth in Exhibit 14.1.4.

- .16 A completed Texas Ethics Commission Form 1295 (“Certificate of Interested Parties”).
- .17 Such other information and materials as Owner may reasonably request.
- .18 Confirmation that the proposed GMP Proposal(s) or Initial GMP Proposal will remain valid during the Proposal Acceptance Period.

5.3 Review and Adjustment to GMP Proposal(s) or Initial GMP. After submission of the GMP Proposal(s) or Initial GMP Proposal, Contractor and Owner shall meet to discuss and review such proposal, with the understanding that: (a) all information shall be provided by Contractor on an Open Book Basis; (b) Contractor shall provide such information as Owner may reasonably request relative to the GMP Proposal(s) or Initial GMP Proposal; and (c) Contractor shall identify and justify any costs that are significantly different than Contractor’s latest cost model. If Owner has any comments regarding the GMP Proposal(s) or Initial GMP Proposal, or finds any inconsistencies or inaccuracies in the information presented, it shall promptly notify Contractor of such comments or findings. If appropriate, Contractor shall, upon receipt of Owner’s notice, make appropriate adjustments to the GMP Proposal(s) or Initial GMP Proposal. Contractor is also on notice that Owner shall, at any time, submit the GMP Proposal(s) or Initial GMP Proposal to either Engineer or an independent third party for review and verification.

5.4 Negotiation of and Owner’s Actions on GMP Proposal.

5.4.1 Negotiation. If Owner determines that there is merit in considering the GMP Proposal(s) or Initial GMP Proposal as the basis for entering into a Construction Contract, it shall so notify Contractor and, as applicable, the Parties shall negotiate in good faith, and attempt to reach agreement on the terms of the GMP Proposal(s) or Initial GMP Proposal.

5.4.2 Agreement on GMP Proposal or Initial GMP Proposal. If the Parties reach agreement on the GMP Proposal or Initial GMP Proposal, as may be amended by Contractor to reflect discussions between the Parties, and Owner intends to award the Construction Contract, then Owner shall issue Contractor a Notice of Intent to Award. The Construction Contract shall incorporate the agreed-upon GMP Proposal or Initial GMP Proposal. As a condition to award, Contractor shall provide the Performance and Payment Bonds as required by Section 7.2 below.

5.4.3 Failure to Agree upon GMP Proposal or Initial GMP Proposal. If the Parties are unable to reach an agreement on the GMP Proposal or Initial GMP Proposal, Owner may:

- .1 Continue to evaluate and suggest modifications to the GMP Proposal or Initial GMP Proposal, whereupon, if Owner accepts such GMP Proposal or Initial GMP Proposal or such modifications are accepted in writing by Contractor, then the Parties shall be deemed to have agreed upon the GMP Proposal or Initial GMP Proposal and accepted modifications, in which case Owner may issue Contractor a Notice of Intent to Award in accordance with Section 5.4.2 above;
- .2 Authorize Contractor to continue to provide services under this Agreement, and provide another GMP Proposal or Initial GMP Proposal at the appropriate time in accordance with this Article 5; or
- .3 Exercise its rights under Section 5.5 below.

5.5. Notice of Non-Award. At any time before entering into a Construction Contract, Owner may issue Contractor a Notice of Non-Award. In such case or upon termination of this Agreement after

entering into a Construction Contract, Owner will have, in addition to any other right available under Laws and Regulations, the right to complete the Project by whatever means it so chooses, without the involvement of Contractor. If Owner issues a Notice of Non-Award, Contractor's sole and exclusive right and remedy shall be to be paid for all Preconstruction Services properly performed through the date of the Notice of Non-Award. Contractor shall not be entitled to any Contractor's Fee, or any other overhead or profit, on unperformed Preconstruction Services or services of any other kind. In no case shall Contractor or any other Contractor-Related Entity be entitled to anticipatory or unearned profits, unabsorbed overhead, opportunity costs, or consequential or other damages as a result of Owner's issuance of a Notice of Non-Award.

5.6 Contractor's Rights if Owner Fails to Act within the Proposal Acceptance Period. If Owner fails to issue Contractor a Notice of Intent to Award or a Notice of Non-Award within the Proposal Acceptance Period (as such period may be extended by mutual agreement of the Parties), then Contractor may, after giving Owner seven (7) days written notice of its intention to do so, declare: (a) the GMP Proposal null and void; and/or (b) that Owner has constructively issued a Notice of Non-Award, in which case Contractor's rights shall be as stated in Section 5.5 above.

5.7. Subsequent GMP Proposals after award of Construction Contract.

The Parties agree that if the Work of the Project is divided into separate Work packages and the Parties enter into a Construction Contract after the Owner's acceptance of the Contractor's Initial GMP, the Contractor will submit subsequent GMP Proposals to the Owner for the remainder of the Work packages in accordance with the requirements of this Agreement. All GMP Proposals accepted by Owner subsequent to entering the Construction Contract, will be incorporated into the Construction Contract.

5.8 Contingency.

5.8.1 Purpose. The GMP Proposal(s) or Initial GMP Proposal and any subsequent GMP Proposal(s) will include a contingency line item ("Contingency") as part of the estimated Cost of the Work. The Contingency will be made up of two parts, the Owner's Contingency and the Project Contingency.

The Owner's Contingency is available for Costs of Work not included in any GMP that would be the basis for a Change Order. The Owner's Contingency is available for the Owner's exclusive use.

The Project Contingency is available for Contractor's exclusive use for unanticipated Costs of the Work that it has incurred that are not the basis for a Change Order under the Contract Documents, plus the applicable Contractor's Fee. By way of example, and not as a limitation, such costs may include: (a) trade buy-out differentials; (b) overtime or acceleration; (c) escalation of labor and material costs; (d) correction of defective, damaged or nonconforming Work; (e) Subcontractor defaults; and (f) deductibles incurred by Contractor under the insurance required under the Contract Documents (but not to exceed \$25,000 per occurrence). The Project Contingency is not available to Owner for any reason, including, but not limited to, changes in scope or any other item which would enable Contractor to increase the GMP under the Contract Documents.

All potential work elements comprising the Owner Contingency will be detailed in a Risk Register prepared and maintained by the Contractor.

The Risk Register will assign an estimated cost for each Owner Contingent work element and the percentage or probability of occurrence and percentage or probability of impact. The weighted cost (estimated cost x percentage occurrence x percentage impact) of each Owner Contingent work element will then be summed up and inserted in the GMP as the Owner's Contingency.



The Risk Register will also assign an estimated cost for each Project Contingent work element and the percentage or probability of occurrence and percentage and probability of impact. The weighted cost (estimated cost x percentage occurrence x percentage impact) of each Project Contingent work element will then be summed up and inserted in the GMP as the Project's Contingency.

5.8.2 Criteria. The criteria for development of the Contingency will be discussed by the Parties and must ultimately be acceptable to Owner. It is understood that the Contingency amount will be negotiated between Owner and Contractor, with input from Engineer.

5.8.3 Draws upon Contingency. The Construction Contract will establish the terms and conditions associated with Contractor's use of the Contingency.

5.9 Early Work Packages. The Parties anticipate that some elements of the Work may be ready to start before the Parties arrive at a GMP or Initial GMP for the entire Work ("Early Work Packages"), prior to the Parties entering into a Construction Contract. Owner shall have the sole discretion as to whether or not to consider and authorize that Contractor perform an Early Work Package. If Owner chooses to authorize Contractor to prepare a commercial proposal for an Early Work Package, the Parties will agree upon the specific process for doing so, with the understanding that the process is intended to generally follow the submittal and negotiation process set forth above for a GMP Proposal.

5.10 Relationship between GMP Proposal Design Documents and Construction Documents.

5.10.1 Agreed-Upon Assumptions and Clarifications. Owner shall authorize and cause the Engineer to incorporate into the Construction Documents the agreed-upon assumptions and clarifications contained in an accepted GMP Proposal(s) or Initial GMP Proposal. Contractor shall promptly notify Owner and Engineer if such revised documents are inconsistent with the agreed-upon assumptions and clarifications, with the goal that such revised documents will be provided to Contractor before the execution of the Construction Contract.

5.10.2 GMP Proposal Design Documents Not Fully Completed Design Documents. The Parties acknowledge that the GMP Proposal Design Documents are not fully completed design documents, and that such documents will continue to be developed into what will eventually become the Construction Documents. In formulating the GMP Proposal(s) or Initial GMP Proposal, Contractor represents that it has accounted for this continued development, and that the GMP and GMP Proposal(s) or Initial GMP Proposal assumes that the Construction Documents will represent a reasonably inferable and logical development of the design intent of the GMP Proposal Design Documents. The GMP Proposal(s) or Initial GMP Proposal (including the GMP itself) represents Contractor's offer to construct the Project or portions of the Project in accordance with the Construction Documents, at no increase in the GMP, with the understanding that the Contingency amount accounts for clarifications, assumptions, and further development of the GMP Proposal Design Documents into the Construction Documents.

5.11 Effect and Administration of the GMP. By executing the Construction Contract with the GMP or subsequent GMPs, including the Initial GMP, if the Work is divided into separate Work packages, Contractor will be guaranteeing that Owner's payment obligations shall not exceed the amount of the GMP accepted by the Owner, and that Contractor shall be responsible for paying all costs of completing the Work which exceed the GMP for the Work or portion of the Work, as the GMP may be adjusted in accordance with the Contract Documents. The Construction Contract will address the treatment of overall savings under the GMP (i.e., the difference between: (a) the GMP, as adjusted in accordance with the terms of the Construction Contract; and (b) the sum of: (1) the actual Cost of the Work incurred by Contractor; (2) Contractor's General Conditions; and (3) Contractor's Fee.)

## **ARTICLE 6** **SUBCONTRACTS**

6.1 Subcontractor and Supplier Participation in Performance of the Preliminary Services. If Contractor wishes to retain any Subcontractor or Supplier to provide assistance to Contractor in the performance of the Preliminary Services, Contractor shall so notify Owner. The Parties shall meet and confer about the most appropriate way of having such Subcontractors/Suppliers participate, and Owner will have ultimate authority to determine whether any Subcontractor or Supplier will be awarded a Subcontract to provide Preliminary Services under this Agreement and, if so, the commercial arrangement for such award.

6.2 Major Elements of the Work to be Performed through Subcontractors and Suppliers. It is contemplated that all major elements of the Work other than the minor work that may be included in the General Conditions will be carried out by Subcontractors and Suppliers. Contractor shall be responsible for dividing the Work into suitable bid packages. If Contractor desires to Self-Perform certain portions of the Work, it will seek permission from Owner to be one of the approved bidders/proposers for those specific bid packages. Contractor's bid/proposal will be evaluated in accordance with Section 6.6 below.

6.3 Procurement of Subcontractors and Suppliers for Work. All first-tier Subcontractors and Suppliers are to be awarded fixed-price subcontracts for the Work through the competitive procurement process set forth below, unless otherwise authorized by Owner in writing. Contractor shall publicly advertise for bids or proposals and receive bids or proposals from Subcontractors and Suppliers in accordance with all applicable Laws. In connection with all such procurements, Contractor shall:

- .1 Develop procurement procedures in consultation with Owner and prepare all necessary procurement documents;
- .2 Publicly advertise for bids or proposals and receive bids or proposals;
- .3 Open and review all bids or proposals in a manner that does not disclose the contents of the bids or proposals to persons not employed by Contractor, Owner or Engineer;
- .4 Evaluate the bids or proposals in accordance with the selection criteria established in the procurement documents; and
- .5 Recommend a bid or proposal for approval by Owner in accordance with such evaluation.

All bids or proposals shall be made available to Owner on request and to the public after the later of the award of the contract or the seventh (7<sup>th</sup>) day after the date of final selection of bids or proposals.

6.4 Award to Subcontractors and Suppliers for Work. Owner shall have the ultimate authority to determine which Subcontractor and/or Supplier will be awarded a Subcontract. If Contractor reviews, evaluates, and recommends to Owner a bid or proposal from a Subcontractor or Supplier, but Owner requires another bid or proposal to be accepted, Owner shall compensate Contractor by a change in price, time, or GMP for any additional cost and risk that Contractor incurs because of Owner's requirement that another bid or proposal be accepted.

6.5 Owner and Engineer's Rights to Participate in Procurement Process for Subcontractors and/or Suppliers for Work. Without limiting any of the foregoing, Contractor acknowledges and agrees

that Owner and Engineer shall have the right to: (a) review and comment on all procurement documents; (b) attend any bid or proposal openings; (c) attend any meetings with prospective Subcontractors or Suppliers, including scope review meetings; (d) review all bids, proposals, and other information developed or otherwise resulting from any competitive procurement, including Contractor's tabulation, scoring or evaluation materials; and (e) otherwise participate in the negotiation and contract award process. Upon subcontract award, Contractor shall provide Owner with a description of the competitive process undertaken in connection with such subcontract award, together with copies of all material documents used in connection therewith and agreements resulting therefrom.

6.6 Ability to Self-Perform Work. Contractor shall be allowed to Self-Perform Work if: (a) Contractor submits its bid or proposal for those portions of the work in the same manner as all other Subcontractors or Suppliers; and (b) Owner determines that Contractor's bid or proposal provides the best value for Owner. If Contractor does wish to Self-Perform, Owner shall have the right to require the submittal of all bids or proposals for such work directly to Owner and/or Engineer (and not to Contractor) for review and evaluation.

6.7 Subcontractor Default. If a selected Subcontractor defaults in the performance of its work or fails to execute a subcontract after being selected in accordance with the process set forth above, Contractor may itself fulfill, without advertising, the contract requirements or select a replacement Subcontractor to fulfill the contract requirements.

## **ARTICLE 7** **BONDS AND INSURANCE**

### 7.1 Bonds.

7.1.1 Security Bond. Contractor shall provide the Security Bond within ten (10) days of the Effective Date. The form of the Security Bond is set forth in Exhibit 7.1.1.

7.1.2 Performance and Payment Bonds. Contractor shall, within ten (10) days of Owner's issuance of the Notice of Intent to Award, and as a condition to Owner executing the Construction Contract, provide Owner with: (a) a performance bond in the penal amount equal to one hundred percent (100%) of the GMP, which bond shall cover the faithful performance of all Contractor's obligations under the Construction Contract Documents ("Performance Bond"); and (b) a payment bond in the penal amount equal to one hundred percent (100%) of the GMP ("Payment Bond"). The forms of the Performance and Payment Bonds are set forth in Exhibits 7.1.2(a) and 7.1.2(b) respectively. If Contractor fails to provide such bonds, Contractor may be found in material default of this Agreement, permitting Owner to terminate this Agreement for cause and draw upon the Security Bond.

7.1.3 Requirements for Surety. The Security, Performance and Payment Bonds shall be provided by a surety authorized by applicable Laws and Regulations to do business in the State of Texas, with an A.M. Best Company Rating of not less than A VIII. The surety must also be listed in the U.S. Department of Treasury's Circular 570.

7.2 Insurance. Contractor shall procure and maintain the following insurance as required by Exhibit 7.2.

## **ARTICLE 8** **INDEMNIFICATION**

**8.1 CONTRACTOR'S INDEMNITY. TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAWS AND REGULATIONS, CONTRACTOR SHALL INDEMNIFY AND HOLD HARMLESS THE OWNER INDEMNITEES FOR, FROM AND AGAINST ANY AND ALL LOSSES, CLAIMS, SUITS, DAMAGES, LIABILITIES, DEBTS, LIENS, OBLIGATIONS, CAUSES OF ACTION, COSTS AND EXPENSES (INCLUDING REASONABLE ATTORNEYS' FEES, COURT COSTS, INTEREST, LITIGATION EXPENSES, AND THE COSTS OF APPELLATE PROCEEDINGS) TO WHICH ANY SUCH OWNER INDEMNITEES MAY BECOME SUBJECT, UNDER ANY THEORY OF LIABILITY WHATSOEVER ("CLAIMS") ONLY TO THE EXTENT THAT SUCH CLAIMS (OR ACTIONS IN RESPECT THEREOF) ARE CAUSED BY THE NEGLIGENT ACTS OR OMISSIONS, RECKLESSNESS OR INTENTIONAL MISCONDUCT OF ANY CONTRACTOR-RELATED ENTITY IN CONNECTION WITH THE PERFORMANCE OF THIS AGREEMENT.**

**8.2 NO LIMITATION. IF AN EMPLOYEE OF ANY CONTRACTOR-RELATED ENTITY HAS A CLAIM AGAINST ANY OWNER INDEMNITEE, CONTRACTOR'S INDEMNITY OBLIGATION SET FORTH IN SECTION 8.1 ABOVE SHALL NOT BE LIMITED BY ANY LIMITATION ON THE AMOUNT OF DAMAGES, COMPENSATION OR BENEFITS PAYABLE BY OR FOR ANY CONTRACTOR-RELATED ENTITY UNDER ANY EMPLOYEE BENEFIT ACTS, INCLUDING WORKERS' COMPENSATION OR DISABILITY ACTS. THE PURPOSE OF THIS PROVISION IS NOT TO CHANGE ANY LIABILITY/BENEFIT BETWEEN ANY CONTRACTOR-RELATED ENTITY AND ITS EMPLOYEE, BUT TO PROTECT OWNER INDEMNITEES TO THE FULL EXTENT TO WHICH AN EMPLOYEE MAY ASSERT A CLAIM AGAINST AN OWNER INDEMNITEE ARISING UNDER SECTION 8.1 ABOVE.**

## **ARTICLE 9** **TERMINATION AND SUSPENSION**

### **9.1 Termination for Cause.**

9.1.1 Process. If either Party fails to perform material obligations under this Agreement, then the other Party may provide written notice to the breaching Party that it intends to terminate the Agreement unless the problem cited is cured, or commenced to be promptly cured, within seven (7) days of the breaching Party's receipt of such notice. If the breaching Party fails to cure, or reasonably commence and diligently continue to cure, such problem, then the non-breaching Party may give a second written notice to the breaching Party of its intent to terminate within an additional seven (7) day period. If the breaching Party, within such second seven (7) day period, fails to cure, or reasonably commence and diligently continue to cure, such problem, then the non-breaching Party may declare the Agreement terminated for default by providing written notice to the breaching Party of such declaration.

9.1.2 Remedies. If Owner is terminated for cause pursuant to Section 9.1.1 above, Contractor's sole and exclusive right and remedy shall be that set forth in Section 9.2 below. If Contractor is terminated for cause, Owner shall have the remedies available to it under applicable Laws and Regulations, subject to the terms of this Agreement.

9.2 Termination for Convenience. Owner may, upon ten (10) days written notice to Contractor, terminate this Agreement, in whole or in part, for the convenience of Owner, without prejudice to any right or remedy otherwise available to Owner. Upon receipt of such notice, Contractor shall immediately discontinue all Preconstruction Services affected unless such notice directs otherwise. In the event of a termination for convenience, Contractor's sole and exclusive right and remedy shall be to be paid for all Preconstruction Services properly performed through the date of the notice of termination.

Contractor shall not be entitled to any overhead or profit on unperformed Preconstruction Services or services of any other kind. In no case shall Contractor or any other Contractor-Related Entity be entitled to anticipatory or unearned profits, unabsorbed overhead, opportunity costs, or consequential or other damages as a result of Owner's termination for convenience.

9.3 Owner's Right to Suspend. Owner may order Contractor in writing to suspend, delay or interrupt all or any part of the Preconstruction Services without cause for such period of time as Owner may determine to be appropriate for its convenience. Contractor shall be entitled to seek an adjustment to its compensation and time of performance from such suspension.

9.4 Termination for Failure to Comply with Subchapter J, Chapter 552, Government Code. This clause is applicable to contracts that have a stated expenditure or result in the expenditure of at least \$1 million.

The requirements of Subchapter J, Chapter 552, Government Code, may apply to this Agreement and the Contractor agrees that this Agreement can be terminated if the Contractor knowingly or intentionally fails to comply with a requirement of that subchapter.

## **ARTICLE 10** **BOOKS AND RECORDS**

10.1 Retention and Audit of Books and Records. Contractor shall keep full and detailed accounts and exercise such controls as may be necessary for proper financial management, using accounting and control systems in accordance with generally accepted accounting principles, consistently applied, and as may be provided in the Contract Documents. During the Book and Records Period, Owner and its accountants shall be afforded access to, and the right to audit from time-to-time, upon reasonable notice, all Books and Records relating to the Work, all of which Contractor shall preserve during the Books and Record Period. Such inspection shall take place at Contractor's offices during normal business hours unless another location and time is agreed to by the Parties. Owner may take possession of such Books and Records by reproducing such Books and Records for off-site review or audit. When requested in Owner's written notice of examination and/or audit, Contractor shall provide Owner with copies of electronic and electronically stored Books and Records in a reasonably usable format that allows Owner to access and analyze all such Books and Records. For Books and Records that require proprietary software to access and analyze, Contractor shall provide Owner with the means to do so, including a license authorizing Owner to access and analyze all such Books and Records.

10.2 Items Not Subject to Audit. For the avoidance of doubt, Owner shall not have the right to audit any items for which it has accepted a lump sum proposal or agreed upon a fixed price/lump sum, including, but not limited to any multipliers or markups agreed to by the Owner and Contractor as part of this Agreement, which are only subject to audit to confirm that such multiplier or markup has been charged in accordance with this Agreement. Notwithstanding any language of this Agreement, the Parties agree that Owner is subject to the Texas Public Information Act ("Act") and Contractor will provide Owner any and all information related to this Project necessary to comply with the Act.

10.3 Flow-Down into Subcontracts. Contractor shall insert a clause containing all the provisions of this Article 10 in all Subcontracts.

10.4 Contracting Information. This clause is applicable to contracts that have a stated expenditure or result in the expenditure of at least \$1 million.

The Contractor must preserve all contracting information related to this contract as provided by the records retention schedule requirements applicable to Owner for the duration of this contract. Contractor will promptly provide Owner any contracting information related to this contract that is in the custody or possession of the Contractor on request of Owner. On completion of this Agreement, Contractor will either provide at no cost to Owner all contracting information related to this contract that is in the custody or possession of the Contractor or preserve the contracting information related to this contract as provided by the records retention requirements applicable to Owner.

## **ARTICLE 11**

### **LAWS AND REGULATIONS**

11.1 Laws and Regulations. This Agreement is based on the Laws and Regulations applicable as of the Effective Date. Changes to these requirements after the Effective Date may be the basis for modifications to Contractor's compensation, scope, and schedule. Contractor shall perform the Preconstruction Services in accordance with all Laws and Regulations and shall provide all notices applicable to the Preconstruction Services as required by all Laws and Regulations.

11.2 Change in Laws and/or Regulations. Contractor shall be entitled to an adjustment in its compensation or time to perform the Preconstruction Services for changes in Laws or Regulations enacted after the Effective Date, provided, however, that no adjustments shall be allowed for changes in Laws or Regulations relating to any Contractor-Related Entity's corporate existence or the maintenance of its business, or a change in Laws or Regulations affecting labor or employment matters.

## **ARTICLE 12**

### **LIMITATIONS OF LIABILITY**

12.1 Waiver of Consequential Damages. To the fullest extent permitted by law, and notwithstanding any other provision of the Agreement, in no event, whether arising out of contract, breach of warranty (express or implied), tort (including negligence), strict liability, or any other cause of or form of action whatsoever, shall either Party be liable to the other for any consequential damages (including but not limited to damages for loss of use, loss of profits or anticipated profits, loss of revenue, and loss of business opportunity) arising out of or in connection with the performance or non-performance of its obligations under this Agreement.

## **ARTICLE 13**

### **WORK PRODUCT**

13.1 Owner's Rights in Work Product. Contractor hereby assigns and conveys to Owner all right, title, and interest, including all copyrights, patents, or any other intellectual property rights (but excluding Pre-Existing Intellectual Property) in all Work Product and all ideas or methods specifically developed for such Work Product. All Work Product will become the property of Owner on the Owner's payment to Contractor of monies due in accordance with this Agreement and not subject to a good faith dispute. Owner's use of any Work Product for any purpose other than the Project, without the involvement of Contractor, shall be at its own risk, and Contractor shall have no liability to Owner for or relating to any such use.

13.2 Contractor-Related Entities. Except as specifically provided in Section 13.4 below, no Contractor-Related Entity will own or claim any copyright, patent, or any other intellectual property right in or with respect to any Work Product or ideas or methods specifically developed for such Work Product.

13.3 Contractor Right to Retain Copies of Work Product. Contractor may make and retain copies of the Work Product for information, reference and use by the Contractor-Related Entities solely with respect to the Work. No Contractor-Related Entity may use the Work Product for any other purpose without the specific written consent of Owner.

13.4 Pre-Existing Intellectual Property. Owner acknowledges and agrees that in the performance of services under this Agreement, Contractor may use proprietary algorithms, software, hardware, databases, other background technology, and other proprietary information that Contractor developed or licensed from third parties prior to the Effective Date (“Pre-Existing Intellectual Property”). Without limiting Owner’s rights with respect to the Work Product or the Project, Contractor will retain all right, title, and interest in such Pre-Existing Intellectual Property. However, Owner shall have the irrevocable, perpetual, and unrestricted right from and after the Effective Date to use (or permit use of) all Pre-Existing Intellectual Property incorporated in the Work Product or the Project, all oral information received by Owner in connection with the Work, and all ideas or methods represented by Pre-Existing Intellectual Property incorporated in the Work Product or the Project, in each case without additional compensation. Contractor hereby licenses such irrevocable, perpetual, and unrestricted rights to Owner. Owner’s use of such license rights for any purpose other than the Project shall be at its own risk, and Contractor shall have no liability to Owner for or relating to any such use.

## **ARTICLE 14**

### **MISCELLANEOUS**

#### 14.1 Compliance with Owner’s Policies.

14.1.1 Drug and Alcohol-Free Workplace. Owner maintains a drug and alcohol-free workplace in accordance with the Drug-Free Workplace Act of 1988. Contractor shall publicize a statement notifying its employees that the unlawful manufacture, distribution, dispensation, possession, or use of a controlled substance is prohibited in the workplace, including at the Plant.

14.1.2 Smoking. Owner maintains specific rules regarding smoking on Owner’s properties. Contractor shall adhere to such rules at the Plant.

14.1.3 Firearms. Owner maintains specific rules regarding firearms and Contractor shall adhere to such rules at the Plant.

14.1.4 Good Faith Efforts to Obtain Minority Participation in the Project. Owner encourages the participation of Small Locally-Owned Businesses, Minority Business Enterprises and Women-Owned Business Enterprises. The goals and requirements of this program are set forth in Exhibit 14.1.4, and Contractor shall comply with the terms of such Exhibit.

14.1.5 Owner’s Safety Requirements. While at the Plant, Contractor shall comply with Owner’s Safety Manual (dated June 12, 2018).

14.1.6 Israel. Contractor confirms that it does not boycott Israel and will not do so during the term of this Agreement.

14.1.7 Traffic Safety. Owner maintains specific rules regarding traffic safety on Owner’s properties. Contractor shall adhere to such rules at the Plant.

14.1.8 Project Wage Rates and Apprenticeship Requirements. The wage rates and other requirements of Exhibit 14.1.8 are applicable to all work performed by Contractor under this Agreement, and all work under the Construction Contract. Contractor confirms that it will comply with the terms of such Exhibit.

14.1.9 Energy Companies. In accordance with Chapter 2274 of the Texas Government Code, Contractor affirms it does not boycott energy companies and will not boycott energy companies during the term of this Agreement.

14.1.10 Firearm Entity or Trade Association. In accordance with Section 2274.002 of the Texas Government Code, Contractor does not have a practice, policy, guidance or directive that discriminates against a firearm entity or firearm trade association and will not discriminate during the term of this Agreement against a firearm entity or firearm trade association.

14.1.11 Foreign-Owned Company. Contractor affirms it is not a foreign-owned company that is owned or controlled by citizens of or directly controlled by the government of China, Iran, North Korea, Russia or a designated country pursuant to Chapter 2274 of the Texas Government Code. Additionally, Contractor affirms it is not a company that is headquartered in China, Iran, North Korea, Russia or a designated country pursuant to Chapter 2274 of the Texas Government Code.

14.2 Contractor's Certifications Contractor certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing this Agreement. For the purposes of this Section 14.2:

.1 “corrupt practice” means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process or in the Agreement execution;

.2 “fraudulent practice” means an intentional misrepresentation of facts made; (a) to influence the bidding process or the execution of this Agreement to the detriment of Owner; (b) to establish bid or contract prices at artificial non-competitive levels; or (c) to deprive Owner of the benefits of free and open competition;

.3 “collusive practice” means a scheme or arrangement between two or more proposers/bidders to this Agreement, with or without the knowledge of Owner, a purpose of which is to establish bid or contract prices at artificial, non-competitive levels; and

.4 “coercive practice” means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Agreement.

14.3 Dispute Resolution and Governing Law.

14.3.1 Commitment to Resolve Disputes. The Parties are fully committed to working with each other and agree to communicate regularly with each other at all times so as to avoid or minimize and resolve any disputes. If any disputes do arise, Contractor and Owner each commit to resolving such disputes in an amicable, professional and expeditious manner.

14.3.2 Mediation. If a dispute cannot be resolved on terms satisfactory to both Parties, the Parties may mutually agree to mediate the dispute through non-binding mediation. For the avoidance of doubt,



mediation is a condition precedent to the initiation of litigation. Any mediation will be based upon a process mutually agreed upon by the Parties.

14.3.3 Litigation. Any and all disputes between the Parties shall be finally resolved through litigation. Legal proceedings between the Parties shall be solely and exclusively initiated and maintained in a court of competent jurisdiction sitting in El Paso County, Texas. Contractor irrevocably consents to the jurisdiction of such courts in any such proceeding and waives any objection it may have to the jurisdiction of any such proceeding.

14.3.4 Governing Law. This Agreement shall be governed by the laws of the state of Texas, without giving effect to its conflict of law principles.

14.4 No Third Party Beneficiaries. Nothing under this Agreement shall be construed to give any rights or benefits in this Agreement to anyone other than Owner and Contractor, and all duties and responsibilities undertaken pursuant to this Agreement will be for the sole and exclusive benefit of Owner and Contractor and not for the benefit of any other party.

14.5 Independent Contractor. Contractor is and will be an independent contractor and whatever measure of control Owner exercises over the work or deliverable pursuant to the Agreement will be as to the results of the work only. No provision in this Agreement will give or be construed to give Owner the right to direct Contractor as to the details of accomplishing the work or deliverable. These results will comply with all applicable Laws and Regulations.

14.6 Confidential Information. Confidential Information is defined as information which is determined by the transmitting Party to be of a confidential or proprietary nature and: (a) the transmitting Party identifies as either confidential or proprietary; (b) the transmitting Party takes steps to maintain the confidential or proprietary nature of the information; and (c) the document is not otherwise available in or considered to be in the public domain. Subject to applicable Laws, such as the Texas Public Information Act, the receiving Party agrees to maintain the confidentiality of the Confidential Information and agrees to use the Confidential Information solely in connection with the Project. Notwithstanding the language of this section or any other section in this Agreement, Contractor understands that Owner is subject to the Act and that Owner will follow all the requirements of the Act. Owner will not be liable for disclosure of information pursuant to the Act or under court order.

14.7 Assignment. Neither the Agreement nor any right, privilege, delegation, or interest thereunder may be assigned or transferred in whole or in part by Owner or Contractor without the prior written consent of the other Party, and any attempted assignment or transfer without such written consent shall be void.

14.8 Severability. If any provision or any part of a provision of this Agreement is held as a matter of law to be unenforceable by a court of competent jurisdiction, the remainder of this Agreement shall be enforceable without such provision.

14.9 No Waiver. The failure of either Owner or Contractor to insist, in any one or more instances, on the performance of any of the obligations required by the other under the Agreement shall not be construed as a waiver or relinquishment of such obligation or right with respect to future performance.

14.10 Survival. The obligations of the Parties under Article 8 (Indemnity), Article 10 (Books and Records), Article 12 (Limitations of Liability), Article 13 (Work Product) and Section 14.6 (Confidential Information) shall survive completion or termination of this Agreement.

14.11 Notice. Whenever the Agreement requires that notice be provided to the other Party, notice will be deemed to have been validly given: (a) if delivered in person to the individual intended to receive such notice; or (b) four (4) days after being sent by registered or certified mail, postage pre-paid, with return receipt requested, to the address indicated in the Agreement, or (c) one (1) business day after being sent by overnight delivery via a nationally recognized courier service (e.g., FedEx or UPS), postage, transmittal or shipping charges prepaid, to the address set forth below:

If to Contractor:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

If to Owner:

El Paso Water Utilities – Public Service Board  
President/CEO  
1154 Hawkins Blvd.  
El Paso, TX 79925

Copy to:  
El Paso Water Utilities – Public Service Board

\_\_\_\_\_  
1154 Hawkins Blvd.  
El Paso, TX 79925

14.12 Exhibits. The following exhibits (“Exhibits”) are specifically made part of, and incorporated by reference into, this Agreement:

Exhibit 1.1(a)	Site Description
Exhibit 2.1	Contractor’s Preconstruction Services
Exhibit 2.6	List of Key Personnel
Exhibit 4.1	Contractor’s Compensation
Exhibit 5.2.1	Elements of the GMP
Exhibit 7.1.1	Form of Security Bond
Exhibit 7.1.2(a)	Form of Performance Bond
Exhibit 7.1.2(b)	Form of Payment Bond
Exhibit 7.2	Insurance Requirements
Exhibit 14.1.4	Good Faith Efforts to Obtain Minority Participation in the Project
Exhibit 14.1.8	Project Wage Rates and Apprenticeship Requirements

14.13 Force Majeure. If, by reason of Force Majeure, either party hereto will be rendered unable wholly or in part to carry out its obligations under this Agreement then such party will give notice and full particulars of such Force Majeure in writing to the other party within a reasonable time after occurrence of the event or cause relied upon, and the obligation of the party giving such notice, so far as it is affected by such Force Majeure, will be suspended for only thirty (30) days during the continuance of the inability then claimed, except as hereinafter provided, but for no longer period, and such party will try to remove or overcome such inability with all reasonable dispatch.

The term Force Majeure as employed herein, will mean acts of God, strikes, lockouts, or other industrial disturbances, acts of public enemies, orders of any kind of government of the United States or the State of Texas or any civil or military authority, insurrections, riots, epidemics, landslides, lightning, earthquake, fires, hurricanes, storms, floods, washouts, droughts, arrests, restraint of government and people, civil disturbances, explosions, breakage or accidents to machinery, pipelines, or canals. It is understood and agreed that the settlement of strikes and lockouts will be entirely within the discretion of the party having the difficulty, and that the above requirement that any Force Majeure will be remedied with all reasonable dispatch will not require the settlement of strikes and lockouts by acceding to the demands of the opposing party or Parties when such settlement is unfavorable in the judgment of the party having the difficulty. If a party is unable to comply with the provisions of this Agreement by reason of Force Majeure for a period beyond thirty days after the event or cause relied upon, then upon written notice after the thirty (30) days, the affected Party shall be excused from further performance under this contract.

14.14 Entire Agreement. This Agreement and accompanying Exhibits is intended by the Parties as a final expression of their agreement and is intended also as a complete and exclusive statement of the terms of their Agreement. No course of prior dealings between the parties and no usage of the trade will be relevant to supplement or explain any term used in this Agreement. Acceptance or acquiescence in a course of performance rendered under this Agreement will not be relevant to determine the meaning of this Agreement even though the accepting or acquiescing party has knowledge of the performance and opportunity for objection.

**IN WITNESS WHEREOF**, intending to be bound, the Parties have entered into this Agreement as of the Effective Date.

CONTRACTOR:

\_\_\_\_\_

OWNER:

**EL PASO WATER UTILITIES – PUBLIC  
SERVICE BOARD**

By: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

By: \_\_\_\_\_  
**JOHN E. BALLIEW  
PRESIDENT / CEO**