AUTHORIZATION OF CHANGE IN SERVICE

CONTRACT NUMBER / CONTRACT NAME:	**2025/087**	**FM 1978 Water Reclamation Facility**	
CITY REPRESENTATIVE/ DEPARTMENT:	**Marcus Naiser/ Engineering and Capital Improvements**		
CONTRACTOR:	**Burns & McDonnell Engineering Co., Inc.**		
CONTRACT EFFECTIVE DATE:	**July 11, 2025**	**COUNCIL RES. NO:**	**2025-125R**
THIS AUTHORIZATION DATE:	**July 7, 2026**	**AUTHORIZATION NO.:**	**2**

DESCRIPTION OF WORK TO BE ADDED TO OR DELETED FROM SCOPE OF SERVICES:

The FM 1978 Water Reclamation Facility Contract Price Amendment for Phase 2A generally includes the following major work components:

-Final Design
- Fleming Pass Improvements
- Nominal 2.0 MGD WRF

- Fleming Pass Construction
- Interim Wastewater Management Infrastructure
  - WW MH 09
  - Temporary Power for WAS Blowers
  - Permanent Infrastructure to be utilized for temporary wastewater management
- Early Works Construction
  - Underground utilities as shown on drawings
  - Site Clear & Grubbing
  - Site Rough Grading
  - Influent Pump Station Wet Well Structure
  - WAS Holding Tank Structure
  - BNR Basin Structure
  - Early Procurement Items

For each of these components, the proposal includes professional services, construction supervision and general conditions, and construction pricing as described in the contract amendment documents.

Original Contract Amount:		$ 3,518,405.00
Previous **Increases/Decreases** in Contact Amount:		$ 193,365.00
CURRENT CONTRACT AMOUNT:		$ 3,711,770.00
This **Increase/Decrease** in Contract Amount:		$41,256,116.00
REVISED CONTRACT AMOUNT:		$44,967,886.00

CONTRACTOR:

Scott P. Clark

Signature

6/22/26

Date

Scott P. Clark, Sr Vice President

Print Full Name / Title (if not in individual capacity)

CITY:

Signature

Date

Print Name / Title

City Department Use Only Below This Line (PM, POC, etc.).

Account Number(s):	Amount	Date
#	$	
#	$	
#	$	

CONTRACT PRICE AMENDMENT
TO THE
PROGRESSIVE DESIGN-BUILD AGREEMENT

This Contract Price Amendment to DBIA Document No. 545, Progressive Design-Build Agreement for Water and Wastewater Projects, is entered into by and between the City of San Marcos (the "City") and Burns & McDonnell Engineering Company, Inc. for the construction of the FM 1978 Water Reclamation Facility Progressive Design-Build (the "Project").

This Contract Price Amendment is a Contract Document for the Project and becomes binding upon mutual execution by the Parties hereto. Pursuant to the terms of the Agreement, this Contract Price Amendment is prepared pursuant to sections 1.2 and 1.3 of the Agreement and establishes, among other things, the Guaranteed Maximum Price ("GMP") for the Project:

RECITALS:

WHEREAS, the City and Burns & McDonnell Engineering Company, Inc. entered into the Agreement dated July 2, 2025 for the design and construction of the Project; and

WHEREAS, unless clearly provided otherwise herein, all terms and phrases used herein shall have the same meaning as the terms and phrases used in the Agreement; and

WHEREAS, Section 1.3 of the Agreement contemplates the delivery of a Design-Builder's Proposal to the City; and

WHEREAS, Section 1.3 of the Agreement requires that said Proposal contain certain representations and documentation; and

WHEREAS, Section 1.3 of the Agreement provides that in the event the City timely accepts the Proposal, this Amendment shall be executed; and

WHEREAS, Burns & McDonnell Engineering Company, Inc. has delivered its Proposal to the City; and

WHEREAL, the City desires to accept the Proposal, subject to any amendments or revisions as set forth below.

NOW, THEREFORE, in consideration of the mutual covenants set forth herein, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the City and Burns & McDonnell Engineering Company, Inc. agree to modify and amend the Agreement as follows:

1. The City hereby accepts the Proposal submitted by Burns & McDonnell Engineering Company, Inc., dated June 17, 2026, a true and complete copy of which is attached hereto and incorporated herein by reference, marked as Exhibit "1-A" to this Amendment.

2. Burns & McDonnell Engineering Company, Inc.'s GMP for the Cost of the Work is thirty-nine million, four hundred five thousand, seven hundred three dollars ($39,405,703.00), subject to additions and deductions by Change Order as provided in the Contract Documents. As agreed by the City and Burns & McDonnell Engineering Company, Inc., the GMP is an amount that the Cost of the Work shall not exceed, and is based on and detailed in the attached Exhibit "1A".

3. The Design Builders' Fee for the Construction of the Work is hereby established in the sum of two million, seven hundred fifty-eight thousand, three hundred ninety-nine dollars ($2,758,399), based on the product of 7.0% multiplied by the Cost of the Work, and said sum is included within the above stated GMP.

4. The General Conditions expenses for the construction of the Work are hereby established in the sum of four million six thousand two hundred forty-five dollars ($4,006,245.00), and said sum is included in the above stated GMP. Burns & McDonnell Engineering Company, Inc. acknowledges and agrees that the City shall have no liability for any General Condition expenses beyond payment of the above noted amount and Burns & McDonnell Engineering Company, Inc. agrees that it shall not be entitled to receive any additional compensation from the City for the General Conditions beyond this amount unless expressly adjusted by a Change Order.

5. The City has established an Owner's contingency fund in the sum of one million eight hundred fifty thousand four hundred thirteen dollars ($1,850,413.00) for this Project. The Owner's contingency exists in addition to the GMP and shall be used to fund additional approved costs that result in an increase to the GMP. Burns & McDonnell Engineering Company, Inc. has no right or entitlement to the Owner's contingency fund and use of such funds are subject to the prior written approval and issuance of a Change Order by the City.

6. The Design-Builder has established a Design-Builder contingency as described in the Scope of Services which is included within the GMP. Burns & McDonnell Engineering Company, Inc. has full right and entitlement to the Design-Builder's contingency fund. Any Design-Builder contingency funds remaining at the completion of the Project will be shared as savings off the GMP with forty (40%) percent paid to the Design-Builder and sixty (60%) percent being retained by the City.

7. Section 6.4.2 of the DBIA 545 Agreement is amended to remove the last clause and now reads as follows;

> The Parties intend that the GMP will be increased or decreased by any additive or deductive Change Orders that change the scope of the Work~~, unless the Contract Price Amendment contains contingency, which shall be fully consumed prior to agreement on an additive change order increasing the GMP~~.

8. Pursuant to the terms of the Agreement, the scope of work described in Exhibit 1-A this Amendment will be Substantially Complete within eight hundred thiry-nine (839) calendar days after issuance of the Notice to Proceed with construction. In the event this Amendment applies to a phase of the Project, the entire Project must nevertheless be Substantially Complete within 882 calendar days after issuance of the first Notice to Proceed with construction.

9. Replace "Final" with "Substantial" in section 2.9.1 of the DBIA 535, General Conditions.

10. Except as modified herein, the terms and conditions of the Agreement remain unchanged. In the event of a conflict between the terms of this Amendment and those of the Agreement, the City and Burns & McDonnell Engineering Company, Inc. agree that the terms of this Amendment shall take precedence.

IN WITNESS WHEREOF, the parties have executed this Amendment to be effective as of the ____ day of _____ , 2026.

OWNER:	**DESIGN-BUILDER:**
CITY OF SAN MARCOS, TEXAS	Burns & McDonnell Engineering Company, Inc.
By: _____	By: Scott P. Clark
Name: _____	Name: ___Scott P. Clark_____
Title: _____	Title: ___Sr. Vice President_____

EXHIBIT 1-A – PHASE 2A CONTRACT PRICE PROPOSAL

Project Background

The project is being delivered as Phase 1 services to include engineering design and preconstruction services, up to the development of construction pricing, as defined in Exhibit B of the Agreement, and Phase 2 services to include final design and construction of the proposed WRF. The Phase 2 services are being divided into two proposals to facilitate early works construction packages and compliance with the Owner's requirements. A summary of each project Phase is shown below:

Phase 1

- Options & Alternatives Analysis
- Early Design Services (~ 60% design milestone)
- Fleming Pass Improvement Design (~60% design milestone)
- Preconstruction Services
- Phase 2 Proposal Development

Phase 2A:

- Final Design
  - Fleming Pass Improvements
  - Nominal 2.0MGD WRF
- Fleming Pass Construction
- Interim Wastewater Management Infrastructure
  - WW MH 09
  - Temporary Power for WAS Blowers
  - Permanent Infrastructure to be utilized for temporary wastewater management
- Early Works Construction
  - Underground utilities as shown on drawings
  - Site Clear & Grubbing
  - Site Rough Grading
  - Influent Pump Station Wet Well Structure
  - WAS Holding Tank Structure
  - BNR Basin Structure
  - Early Procurement Items

Phase 2B:

- Balance of Plant Construction:
  - Headworks
  - BNR Basin Process Mechanical & Electrical
  - Final Clarifiers, including splitter box
  - Filters/UV Disinfection Structure
  - Effluent Structure
  - Outfall
  - Miscellaneous Process Mechanical Pads
  - Odor Control
  - Chemical Feed
  - Buildings, including Administration, Electrical Buildings, Dewatering Building

- Remaining Procurement Items
- Commissioning & Startup
- System O&M

At the time of submittal of this proposal, Phase 1 services have been previously approved and are in progress. This proposal is applicable only to Phase 2A as summarized above and further described herein. Phase 2B scope, pricing and schedule will be provided under separate cover at a future date.

Summary

The Phase 2A Price Proposal generally includes the following major work components for design and/or construction:

- Final Design (Fleming Pass and 2MGD Facility Design)
- Interim Wastewater Management Infrastructure
- Fleming Pass Improvements
- Facility Early Works Construction

For each of these components, the proposal includes pricing for professional services, construction supervision and general conditions, and construction pricing as described in the attachments to this document.

Contract Time and Completion

The Contract Time and Completion for this Contract Price Amendment is based upon the scope of work detailed herein. The Design-Builder shall perform the Work in accordance with the following milestone requirements:

1) Final Design: Issued for Construction documents for the Fleming Pass Improvements and 2.0 MGD facility will be submitted to the Owner. Issued for Construction documents will be delivered electronically.

2) Interim Wastewater Facilities Milestone:

   a) The Design-Builder will install manhole WW MH 09, referred to as the "Developer Manhole," no later than January 1, 2027, 168 days after Phase 2A Notice to Proceed, and make this manhole available for the City's use. Backfill completion will not be required for this milestone to be achieved.

   b) The Design-Builder will achieve readiness for the City's pump-and-haul operations at the interim wastewater facilities no later than 60-days after receipt of written notice from the City. Readiness for this milestone is defined as the successful installation and testing of the permanent holding tanks and/or conveyance system, and/or manhole structures, as well as the temporary roads, power and pumping systems

required for the City to commence its operations. Temporary pumping systems are generally outlined in Attachment 1A-7 – Statement of Additional Services , and will be finalized and approved by the City prior to installation. Upon mutual agreement between the City and the Design-Builder, pump-and-haul operations readiness may be divided into separate milestones that align with the final operational plan.

3) Phase 2A Readiness Milestone: The Design-Builder shall achieve "Phase 2A Readiness" for all other construction Work, including the Fleming Pass Improvements and Facility Early Works . "Phase 2A Readiness" is defined as the point at which:

   a) The Fleming Pass improvements are constructed in accordance with the Issued for Construction documents. This milestone will be completed within 221 days of Phase 2A Notice to Proceed.

   b) Site clearing, grubbing, rough grading, and temporary power meter cans and distribution are complete in accordance with the Issued for Construction documents. This milestone will be completed within 276 days of Phase 2A Notice to Proceed.

   c) The underground utilities, influent pump station caisson, WAS holding tank, and biological nutrient removal basin are constructed to the lines, grades, and dimensions shown on the Issued for Construction documents. The milestone will be completed within 480 days of Phase 2A Notice to Proceed.

   d) The four specified long-lead equipment packages have been procured and delivered to the site or a designated storage location. The delivery of the equipment will be completed within 276 days of Phase 2A Notice to Proceed, unless Design-Builder and City mutually agree to delay equipment delivery to accommodate storage requirements and/or construction schedule.

4) Upon the achievement of the "Phase 2A Readiness Milestone," the Design-Builder will have fulfilled its primary construction obligations for this scope of Work, excluding warranty obligations and any activities mutually agreed upon to be carried over to the next phase. It is expressly understood that the scope of this Contract Price Amendment is for a portion of the overall Project. The preliminary schedule included as Attachment 1A-8 reflects the sequence and durations to achieve the milestones defined herein.

Proposal Acceptance

The price and scope provided in this Proposal and its Attachments, are valid for 45 days from June 8, 2026.

Attachment List

Attachment 1A-1 – Pricing Summary
Attachment 1A -2 – Scope of Services

Appendix 1A-2.1 – Submittal List
Attachment 1A -3 – Permit List
Attachment 1A -4 – Work Description
Attachment 1A -5 –Clarifications and Exclusions
Attachment 1A -6 – Risk Register and Basis of Contingency
Attachment 1A -7 – Statement of Additional Services
Attachment 1A -8 – Project Schedule
Attachment 1A -9 – Schedule of Values
Attachment 1A -10 – Pre-Final Design Documents

ATTACHMENT 1A-1
PRICING SUMMARY

Item Description		Value
Subcontracts	**$**	**20,126,649**
S100 Early Site Work	$	5,622,699
S310 Flatwork /Roadwork (Fleming Pass)	$	1,460,024
S330 Cast-in-Place Concrete – WAS Tank, BNR, IPS Interior	$	8,365,449
S350 Caisson (Influent Pump Station)	$	3,719,529
S900 Painting & Coatings	$	572,658
S2600 Electrical	$	386,290
Procurement	**$**	**4,884,878**
BLW-001 - Screw Blowers	$	700,291
DIF-002 - Coarse Bubble Disc Diffusers	$	112,158
PMP-002 - Rotary Lobe Pumps	$	124,050
PMP-003 - Submersible Pumps	$	359,279
Electrical Procurement	$	3,589,100
Design-Builder Services	**$**	**14,394,176**
Engineering & Permitting Services	$	5,096,246
Work Change Directive No. 1 - WPP2 and Floodplain Modeling	$	66,364
Geotechnical Services	$	139,000
Survey	$	88,700
Design Builder Contingency	$	1,439,286
General Conditions	$	4,006,245
Bonds & Insurance	$	799,936
Fee (7.00%)	$	2,758,399
Phase 2A Total	**$**	**39,405,703**
Owner Funds	**$**	**1,850,413**
Additional Services #1 - Interim WW Management	$	732,213
Owner Contingency	$	1,118,200
Contract Price Amendment #1 Total	**$**	**41,256,116**

APPROVED PROJECT PRICING SUMMARY

Contract Phase/Amendment Description	Date	Value
Phase 1 - Engineering, Permitting & Preconstruction Services (Tasks 1-8)	7/11/2025	$ 3,518,405
Phase 1 - Amendment #1 - Fleming Pass & Additional Support (Tasks 9-10)	1/6/2026	$ 193,365
Phase 2A - Contract Price Amendment #1	TBD	$ 39,405,703
Total		**$ 43,117,473**

ATTACHMENT 1A-2 - SCOPE OF SERVICES
PHASE 2A – FINAL DESIGN, INTERIM WASTEWATER MANAGEMENT, FLEMING PASS IMPROVEMENTS, & FACILITY EARLY WORKS

This Scope of Services is additive to the Phase 1 Scope of Services and specifically includes Project Management, Engineering Services, Permitting, Procurement, and Construction for the following as defined as the Phase 2A Scope of Services:

- Final Design (Fleming Pass and 2MGD Facility Design) - This scope of work includes:
  - final design to an Issued for Construction set for Fleming Pass improvements,
  - interim wastewater management provisions, and,
  - the 2 MGD water reclamation facility.
  - This final design scope is based on progression to a 90% Issued for Construction (IFC) set of the 60% IFB set that was posted to Procore as GMP 1/2 Drawings, Civil Drawings, and Fleming Pass Roadway Drawings on 4/1/26, 4/6/26 and 4/7/26, respectively, and the corresponding responses to comments on the above drawing sets posted on 5/13/26 and 5/14/26.
- Interim Wastewater Management – The scope of work for the interim wastewater management is construction of permanent facilities for use as interim wastewater management operations. The permanent facilities utilized for flows received at the southwest boundary of the WRF site, beginning with manhole WW MH 09, flowing by gravity to the influent pump station wet well and then pumped either to the WAS tank for holding or into a truck for transfer to the existing River Road facility. Temporary power to the WAS holding tank blowers will be installed as part of the pump and haul provisions. Pump and Haul operations are not included in this scope of work.
- Fleming Pass Road Improvements - This scope of work includes construction of the Fleming Pass improvements.
- Facility Early Works Construction - This scope of work is the early works construction packages for clearing, grubbing and site preparation, underground utilities indicated in the drawings, influent pump station and wet well structure, WAS tank structure and process piping, BNR basin structure. The scope also includes procurement of rotary lobe pumps, submersible pumps, blowers, and large bubble diffusers.

The parties agree that the Design-Builder's Scope of Services for Final Design and Construction Services for Phase 2A includes and is limited to the following:

1) Project Management:

a) Design-Builder will host monthly project update meetings either virtually or at the project site for the duration of the Work included in Phase 2A and will provide meeting minutes.

b) Beginning at Mobilization, Design-Builder will host a weekly construction coordination meeting with Owner to document work completed the past week,

planned work for the next week and key interfaces between Design-Builder and Owner.

c) Design-Builder will provide a monthly invoice that includes the following as supporting documentation:
   i) AIA Payment application with approved schedule of values and based on percent complete.

2) Engineering Services:

a) Progress the design for the Project to IFC status. The final IFC drawings and specifications will include feedback from Owner's previous review of the Phase 1 Pre-Final design documents, posted to Procore on 5/13/26 and 5/14/26.

b) Review and approve compliance submittals for equipment to be procured and for the materials to be incorporated into the Work for Phase 2A. Submittal review and approval for equipment and materials to be procured and incorporated into the Work associated with Phase 2B will be included in the Phase 2B Cost Amendment Proposal.

c) PDF versions of the final approved ("A" status) equipment submittals will be provided to Owner for Owner's information and records, unless noted otherwise in the Owner Submittal list included as an attachment to this Scope of Services.

d) Provide engineering submittal management associated with submittals throughout the performance of the Work associated with Phase 2A. Submittal management for equipment and materials to be procured and incorporated into the Work associated with Phase 2B will be included in Phase 2B Cost Amendment Proposal.

e) Review third party test reports for materials to be incorporated into the Work associated with Phase 2A.

f) Provide clarification and interpretation of the Issued for Construction design documents throughout the construction period and respond to Requests for Information (RFIs) associated with Phase 2A.

g) Revise and reissue Issued for Construction design documents associated with Phase 2A as needed to support major changes, if any, during construction.

h) Preparation of conformed record drawings are excluded from Phase 2A and will be incorporated into the Phase 2B Cost Amendment Proposal.

3) Permitting:

a) Prepare and submit permitting documents identified as Design-Builder permits in Attachment 1A-3 Permit List.

b) Review, inspection, and completion of ongoing permitting documentation requirements for compliance during construction. Review of documents will include review of electronic files as well as quarterly visits to the project site for observations.

c) Complete closeout requirements for applicable Design-Builder permits in the Attachment 1A-3 Permit List.

4) Procurement:

a) All procurement activities listed below are limited to those packages that are procured as part of the Phase 2A Contract Price Proposal. Any procurement activities associated with Phase 2B will be included in the Phase 2B – Balance of Plant Contract Price Proposal.
b) Issuance and subsequent execution of supplier/vendor purchase orders for the Interim Wastewater Management and Critical or Long-Lead Equipment.
c) Receive, review, and process supplier/vendor payment applications, in accordance with the terms of the purchase orders.
d) Perform supplier/vendor purchase order administration including the review and processing of RFIs, potential change order requests, change orders, etc.
e) Hold progress meetings with vendors on an as needed basis to expedite the shop drawing and fabrication process.
f) Manage anticipated equipment deliveries as needed to facilitate the Project schedule.

5) Construction Services:

a) All construction activities listed below are limited to construction in accordance with the Contract Documents that are included as part of the Phase 2A Contract Price Proposal. Any construction activities associated with Phase 2B will be included in the Phase 2B Contract Price Proposal.
b) Facilitate site preconstruction conference.
c) Conduct regular construction coordination meetings with subcontractors.
d) Receive, review, and process subcontractor payment applications.
e) Perform subcontract administration including the review and processing of RFIs, potential change order requests, change orders, etc.
f) Manage Subcontractors to construct installation of the Work in accordance with the Contract Documents.

APPENDIX 1A-2.1 – SUBMITTAL LIST

The submittal list includes a summary of anticipated construction submittals for the Phase 2A scope of work. Submittals indicated "For Information Only" will be reviewed for conformance with the Contract Documents by the Design-Builder and provided to the Owner following approval. Submittals indicated "Owner Review & Concurrence" will include an Owner review and comment period prior to approval. All approved submittals will be posted to Procore for project team access.

Division	Section Number	Section Name	Submittal Type	For Information Only	Owner Review & Concurrence
03 - CONCRETE	03 10 00	Concrete Formwork	Shop Drawings	X	
03 - CONCRETE	03 15 50	Vapor Retarder	Product Specification and Data	X	
03 - CONCRETE	03 15 50	Vapor Retarder	Installation Instructions	X	
03 - CONCRETE	03 20 00	Concrete Reinforcement	Erection Drawings, Proposed Splices, and Schedules	X	
03 - CONCRETE	03 20 00	Concrete Reinforcement	Mill Test Results	X	
03 - CONCRETE	03 30 00	Concrete	Concrete Mix Design, Product Data and Shop Drawings	X	
03 - CONCRETE	03 30 00	Concrete	Construction Joint Layout	X	
03 - CONCRETE	03 30 00	Concrete	Quality Assurance Records and Mill Documents	X	
03 - CONCRETE	03 30 00	Concrete	Time Limit Extension Request	X	
05 - METALS	05 05 19	Post-Installed Anchors	Product Data and Installer Credentials	X	
05 - METALS	05 05 19	Post-Installed Anchors	Installation Instructions	X	
05 - METALS	05 12 00	Steel	Product Literature, Fabrication and Erection Drawings	X	
05 - METALS	05 12 00	Steel	Welding Documents	X	
05 - METALS	05 12 00	Steel	Mill Tests	X	
05 - METALS	05 12 00	Steel	High-Strength Bolt Documents	X	
05 - METALS	05 12 00	Steel	Erection Plan	X	

Division	Section Number	Section Name	Submittal Type	For Information Only	Owner Review & Concurrence
05 - METALS	05 45 00	Aluminum	Product Data, Structural Computations, and Catalog Cuts	X	
05 - METALS	05 45 00	Aluminum	Fabrication and Erection Drawings	X	
05 - METALS	05 45 00	Aluminum	Material Samples	X	
05 - METALS	05 45 00	Aluminum	Welder Qualifications	X	
08 - DOORS/WINDOWS	08 34 83	Floor Access Doors	Product Data		X
09 - FINISHES	09 90 00	Protective Coatings	Technical and Safety Data Sheets, Schedule of Products and Systems, and Color Charts	X	
09 - FINISHES	09 90 00	Protective Coatings	Manufacturer and Applicator Attestation	X	
31 - EARTHWORK	31 20 50	Site Prep and Earthwork	Test Results and Quality Assurance Records	X	
31 - EARTHWORK	31 20 50	Site Prep and Earthwork	Erosion Control, Dewatering, Sheeting and Shoring Plan	X	
31 - EARTHWORK	31 20 50	Site Prep and Earthwork	Engineered Designs for Excavation Safety	X	
33 - UTILITIES	33 11 00	Pressure Pipe	Pre-fabrication Submittals and Product Data	X	
33 - UTILITIES	33 11 00	Pressure Pipe	Pre-shipment Credentials and Certifications of Shop Test	X	
33 - UTILITIES	33 12 16	Utility Valves and Accessories	Product Data		X
33 - UTILITIES	33 12 16	Utility Valves and Accessories	Test Documentation and Affidavits of Credentials	X	
33 - UTILITIES	33 32 22	Submersible Pumps	Performance and Design Data		X
33 - UTILITIES	33 32 22	Submersible Pumps	Reports and Manuals		X
33 - UTILITIES	33 32 22	Submersible Pumps	Supplier Field Testing Performance and Reports		X
35 - WATERWAY	35 20 16	Slide Gates	Product and Design Data		X
35 - WATERWAY	35 20 16	Slide Gates	Manuals and Lists		X
43 - PROCESS GAS/LIQUID	43 11 31	Rotary Helical Screw Blowers	Performance and Design Data		X

Division	Section Number	Section Name	Submittal Type	For Information Only	Owner Review & Concurrence
43 - PROCESS GAS/LIQUID	43 11 31	Rotary Helical Screw Blowers	Reports and Credentials		X
43 - PROCESS GAS/LIQUID	43 11 31	Rotary Helical Screw Blowers	Manuals		X
43 - PROCESS GAS/LIQUID	43 23 58	Rotary Lobe Pumps	Drawings and Data		X
43 - PROCESS GAS/LIQUID	43 23 58	Rotary Lobe Pumps	Reports, Lists and Manuals		X
43 - PROCESS GAS/LIQUID	43 23 58	Rotary Lobe Pumps	Supplier Field Testing Performance and Reports		X
46 - WATER EQUIPMENT	46 05 13	Common Motor Requirements	Product Data		included with equipment as needed
46 - WATER EQUIPMENT	46 05 13	Common Motor Requirements	Diagrams and Statements		included with equipment as needed
46 - WATER EQUIPMENT	46 05 13	Common Motor Requirements	Factory and Field Test Reports		included with equipment as needed
46 - WATER EQUIPMENT	46 05 13	Common Motor Requirements	Closeout Submittals		included with equipment as needed
46 - WATER EQUIPMENT	46 51 21	Membrane Diffusers	Shop Drawings, Data and Calculations		X
46 - WATER EQUIPMENT	46 51 21	Membrane Diffusers	Lists, Reports and Manuals		X
46 - WATER EQUIPMENT	46 51 21	Membrane Diffusers	Field Inspection, Operation, and Test Reports		X

APPENDIX 1A-3 – PERMIT LIST

This table below provides the required permits for construction of the FM 1978 WRF as identified in the permitting matrix during Phase 1 of the Project. The responsible party for each permit, including application and fee, is indicated in the table. For permits that are the Owner's responsibility, the Design-Builder will provide support to the extent that technical information within the Design-Builder's scope of work is required to complete the permit application. Permits that are the Design-Builder's responsibility will be submitted and managed throughout the Project until the permit has been acquired or closed. Any permits or regulatory requirements not identified shall be the responsibility of Owner.

PERMIT	DESIGN-BUILDER	OWNER
Federal		
U.S. Army Corps of Engineers (USACE) Fort Worth District		
Jurisdictional Determination (JD)		X
Clean Water Act (CWA) Section 404 Nationwide Permit (NWP) – 58, Utility Line Activities for Water and Other Substances		X
CWA Section 404 NWP – 7, Outfall Structure and Associated Intake Structures		X
U.S. Fish and Wildlife Service (USFWS) Austin Region		
Endangered Species Act (ESA): Federal Threatened and Endangered Species Consultation.		X
Bald and Golden Eagle Protection Act (BGEPA)		X
Migratory Bird Treaty Act (MBTA)		X
Federal Aviation Administration (FAA)		
FAA Form 7460-1, Notice of Proposed Construction or Alteration	X	
FAA Form 7460-2, Notice of Actual Construction or Alteration	X	
U.S. Environmental Protection Agency (EPA) 40 CFR 112		
Construction Spill Prevention Control and Countermeasure (SPCC)	X	
Operational SPCC		X
State		
Texas Historical Commission (THC) Section 106 National Historic Preservation Act (NHPA)		X
Texas Commission on Environmental Quality (TCEQ) Air Permits Division		
Permit by Rule (PBR)		X
Standard Permit		X
De Minimis Facilities or Sources		X
TCEQ Water Quality Division and Wastewater Permitting Section		

PERMIT	DESIGN-BUILDER	OWNER
Federal		
Clean Water Act Section 401 Water Quality Certification (WQC)		X
Authorization for Re-Use of Domestic Reclaimed Water (TCEQ-20427)		X
TPDES General Construction Permit No. TXR150000 – Notice of Intent (NOI)	X	
TPDES General Construction Permit No. TXR150000 – Notice of Intent (NOT)	X	
Major Amendment to TPDES Individual Permit for Domestic Wastewater-Treatment Facility (WQ0015817001)		X
New TPDES Individual Permit for Domestic Wastewater-Treatment Facility (WQ0016808001)		X
Plans and Specifications (P&S) for Domestic WWTPs	X	
Hydrostatic Test water Discharges (General Permit TXG670000)	X	
Notification of Completion/Phase of Wastewater Treatment Facility (Form TCEQ-20007)		X
Texas Department of Licensing and Registration (TDLR)		
Industrialized Housing and Buildings (IHB) Manufacturer	X	
IHB Manufacturer's Design Package Review	X	
IHB Industrialized Builder Registration	X	
IHB Installation Permit	X	
Texas Department of Transportation (TxDOT)		
Permit to Construct Access Driveway Facilities on Highway Right of Way	X	
Traffic Engineering Study Checklist	X	
Local		
City of San Marcos (COSM) Planning & Development Services		
Pre-Development Meeting	X (completed during Phase 1)	
New Address Request Form	X	
Municipal Annexation		X
Zoning Map Amendment		X
Preliminary Development Plat	No Further Action – per COSM*	
Final Development Plat		X
Tree Survey & Preservation Review – Tree Mitigation On-Site		X
COSM Engineering & Capital		
Traffic Impact Analysis Threshold Worksheet	No Further Action – per COSM*	
Watershed Protection Plan Application (WPP) Phase II	X	
Public Improvement Construction (PICP)	No Further Action – per COSM*	
Site Preparation Permit	No Permit Required, No fees, Review as part of CIP plan review – per COSM*	

PERMIT	DESIGN-BUILDER	OWNER
Federal		
Building Permit (Construction Permit)	Review as part of CIP plan review, Call for inspections, No fees – per COSM*	
Temporary Structure Permit	No Permit Required – per COSM	
Job Trailer Permit and Associated Construction Trailer Checklist	No Permit Required – per COSM	
Floodplain Development Permit (see Guadalupe County Engineer permit below)	X	
Access Driveway Application	Refer to TxDOT Driveway Access Item	
Trade Permit Application	No Permit Required – per COSM*	
Contractor's License and Registration Application	Not Applicable, No Further Action – per COSM*	
Fence Application	No Application; Fence review as part of CIP plan review – per COSM*	
On-Site Sewage Facility (OSSF) Approval to Construct	Not Applicable – per COSM*	
Approval to Operate OSSF	Not Applicable – per COSM*	
COSM Fire Department		
Fire Marshal Permit Application	No Permit Required; Review as part of CIP plan review in conjunction with Guadalupe County Fire Marshal – per COSM*	
Guadalupe County Engineer		
Floodplain Development Permit	X	
Guadalupe County Fire Marshal		
Fire Alarm Permit	X	
Fire Suppression Permit	X	
Temporary Structure Permit	X	
Guadalupe County Road & Bridge Department		
Address Assignment Verification Letter	X	

**Direction as provided in COSM permit matrix comments 10-Sep-25*

ATTACHMENT 1A-4 – PHASE 2A WORK DESCRIPTION

This Work Description identifies major definable components of the Project as they can be defined at the time that the Agreement was prepared. In addition to the major components called out herein, the Work Description describes the general requirements for each design element. The intent of this document is to establish the scope and criteria of products, materials, and equipment to be furnished and installed under the Agreement. The Design-Builder will develop the final design documents and construct the Work in accordance with the criteria identified herein.

01 00 00 GENERAL CONDITIONS

1. All supervision, administrative costs, and temporary facilities necessary to construct the work.
2. No sales tax for permanent materials included. Owner to provide exemption certificate for the project.
3. Temporary Power will be provided by the Owner to a location previously agreed by the Owner and Design-Builder. Temporary power measures within the project site will be provided by Design-Builder.
4. City will provide water for construction activities, notwithstanding Section 2.7.1 of the 535 General Conditions.
5. Does not include cost of chemicals for startup, testing or operation of the facility.
6. Includes cost of obtaining, installing, and maintaining the SWPPP.
7. Builders risk insurance will be provided by Design Builder.
8. Design will be completed following the 2021 IBC except where noted.
9. Any owner performed tests as referenced in Section 2.7.2 of the 535 General Conditions are excluded from the Cost of the Work.
10. All O&M manuals will be in searchable, bookmarked electronic PDF form.
11. In the event that there are discrepancies between the Preliminary Engineering Report and this document, this document shall govern.
12. Monthly drone capture of the project site is included. Drone waypoint route to be established upon mobilization. Photos and videos will be provided via Procore or Sharepoint.
13. Site Office Trailer includes one office with two desks and two task chairs for Owner's use.
14. Document redlines will be maintained via Procore.

01 01 00 SPECIAL SITE CONDITIONS

1. No hazardous or special waste are known of at this time or anticipated to be encountered in the course of this project.
2. Groundwater is expected to be consistent with the conditions documented as part of the preliminary geotechnical investigations dated February 20, 2026.

3. On-site soils are expected to be consistent with those documented as part of the preliminary geotechnical investigations dated February 20, 2026.

01 01 50 OWNER FURNISHED ITEMS

1. Operation and maintenance of existing facilities during construction (including pump and haul activities) and through project start-up and commissioning.
2. Access to project sites as needed to perform work.
3. Land acquisition, easements or rights-of-way as may be required.
4. Cost and installation of offsite power, water, gas, telecom, ISP upgrades if required.
5. Permanent utility power to the site and associated overhead build out around the site.
6. Chemicals as required for startup and testing, including initial fill of new chemical systems.
7. Radio frequencies for off-site communications.

01 50 00 CONSTRUCTION EQUIPMENT

1. All construction equipment necessary to complete the work is included.

02 41 19 SELECTIVE DEMOLITION

1. Reconstruction of existing Fleming Pass.
2. Removal of fencing to allow for site access.

03 05 13 CONCRETE FORMWORK

1. Exterior Forms
    a. Fill any repairable honeycomb; patch all tie holes.
    b. No architectural or rubbed finish; no grout finish.
    c. Joints to be noticeable, but not protruding.
    d. 3/4" chamfer at all exposed corners.

03 15 50 VAPOR RETARDER

1. ASTM E1745, Class A or B, min thickness of 15 mil.
2. Applied below all concrete slabs as indicated on the drawings.

03 20 00 CONCRETE REINFORCEMENT

1. Deformed bars: ASTM A615, Grade 60 – No epoxy
2. Class B lap splices per ACI 318 and/or 350 as applicable.
3. Mechanical splices used where indicated on drawings.

4. Drill and epoxy dowels at interface of new concrete construction to existing structures where indicated on drawings.

03 30 00 CONCRETE

1. ASTM C150 Type I/II or ASTM C595 Type IL (MS).
   a. May include fly ash per ASTM C618 Type F (max 25% replacement).
   b. Class C fly ash may be allowed under one of the following conditions:
      a. Documentation is available that the CaO content of Class C ash in stock is less than 18%.
      b. Documentation is available that the aggregate source being used is non-reactive when tested in accordance with ASTM C1260.
      c. Documentation is available that concrete prisms using job materials demonstrates expansion less than 0.004% when tested in accordance with ASTM C1293, or 0.10% when tested in accordance with ASTM C1537.
      d. Documentation is available that the procedures outlined in ASTM C1778 were followed in selecting materials to mitigate AAR.
      e. Documentation must be submitted at the time of concrete mix design submittal review.
   c. Granulated-ground blast furnace slag, conforming to ASTM C989 Grade 100 or 120 may be substituted for fly ash if available.
2. Structural concrete mixes as specified below:

Structural Concrete Mixes						
Type	Use	28-Day Compressive Strength	Maximum W/C Ratio	Maximum Aggregate Size	Total Air Aggregate	Slump Range
A	Liquid-Retaining and Secondary Containment	4500 psi	0.42	1”	1.5 - 6%	2” – 4”
B	Structural Elements	4000 psi	0.45	1”	1.5 – 6%	2” – 4”
C	Interior Slabs-On-Grade	4000 psi	0.45	1”	3% Max	2” – 4”
D	Electrical Duct Banks	3500 psi	0.45	3/4" – 1”	1.5 – 6%	2” – 4”
E	Pavements, Curbs, And Gutters	4500 psi	0.45	3/4" – 1”	1.5 – 6%	4” – 6”
F	Concrete Fill	2000 psi	0.50-	3/8” Max	N/A	8” Max

3. All concrete supplied for the project shall meet ACI 301 and/or ACI 350.5 requirements.
4. Foundations
    a. All foundations to extend below frost line.
    b. Reference Div 31 and structural drawings for subgrade requirements.
5. All flatwork to receive float finish unless noted otherwise.
6. Waterstop at all construction joints in wastewater containing structures.
7. The following structures will be leak-tested in accordance with ACI 350.1:
    a. 420 BNR Basin
    b. 710 WAS Holding Basin

05 05 19 POST INSTALLED ANCHORS

1. Mechanical anchors: Stainless steel unless noted otherwise. Mechanical anchors shall not be used in submerged service.
2. Adhesive Anchors: Stainless steel unless noted otherwise
    a. Hilti Hit-HY 200 for dry installations.
    b. Hilti Hit HY-500 for wet installations.
    c. Approved equal.

05 12 00 STEEL

1. Wide flange and tees cut from wide flange shapes, ASTM A992.
2. All other rolled plates and shapes: ASTM A36
3. High-strength bolting: ASTM F3125, Grade A325, Type 1, or Grade F1852, Type 1, unless noted otherwise.
4. Hot-dipped galvanized steel and connection hardware unless indicated otherwise.
5. Welding: AWS D1.1 using E70XX low-hydrogen electrodes. AWS D1.8 for welding stainless steel.
6. Stainless steel:
    a. AISI Type 304 or 316 where indicated.
7. Anchor bolts:
    a. Cast-in-place: Galvanized ASTM F1554 Grade 36 anchor bolts or stainless steel where indicated on Drawings.
    b. Post-installed anchors:
        - See Section **05 05 19**

05 45 00 ALUMINUM

1. Aluminum association structural shapes, 6061-T6 with 304 stainless steel hardware.
2. Guardrail: 1.9” OD aluminum two rail system with kickplate unless indicated

to match existing four rail system.
3. Handrail: 1.5” OD aluminum.
4. Ladders to be of aluminum construction unless noted otherwise.
    i. Ladders taller than 24 feet shall be equipped with a fall-arrest system complying with OSHA requirements.
5. Grating to be swage locked striated I-bar grating with banded openings.
6. Stair treads to be serrated swage locked bar grating.

05 50 00 MISCELLANEOUS METALS

1. Bollards – 6-inch diameter Schedule 40 Steel, concrete filled, painted safety yellow, with rust-inhibitive paint.

07 16 00 BITUMINOUS DAMPPROOFING

1. Apply where shown:
    Product: Tnemec Tneme-Tar Hi Build Series 46H-413; 16-20 mils DFT, or Engineer Approved Equal

09 90 00 PROTECTIVE COATINGS

1. Color coded painting of exposed-to-view piping if not stainless steel or PVC.
2. All exposed process piping to have color coded labels with directional arrows.
3. 2 coat epoxy/polyurethane system for all bollards and non-stainless steel or HDG pipe/supports exposed to UV.
4. 2 coat epoxy coating system for interior/submerged non-stainless steel or HDG pipe/supports not exposed to UV.
5. Hot-dip galvanized steel will not be coated.
6. Chemical containment to have 3 coat chemical resistant containment coating.
7. Touch-up paint as required for non-stainless-steel equipment.
8. Interior coating of wet well structure.

26 05 11 LOW VOLTAGE POWER CONDUCTORS AND CABLES

1. Cable:
    a. LV Power: 600V, XHHW-2 insulation, PVC jacket.
        i. Exception: THHN/THWN for temporary equipment fed from the temporary power and lighting panelboards.
    b. LV Control: 600V, #14AWG single conductor THHN/THWN.
    a. Instrument: 600V, #18 AWG, twisted pair/triad with PVC insulation and PVC jacket. Individual shielding.
2. Cable Terminations:

a. Motors: 1-hole compression lugs with motor splice kit (3M 5300-series or equal) except 2-hole compression lugs for #4/0 AWG and larger.
b. Controls: Pre-insulated ferrules or ring lugs as required by device.
c. Instruments: Pre-insulated ferrules or locking fork lugs to match device.
d. Cable Splices: No splicing except for low voltage lighting and receptacle circuits.

26 05 26 GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

1. Bare copper, tinned, #3/0 AWG min. for counterpoise and risers.
2. Below-grade Connections: Exothermically Welded (CAD Weld).
3. Above-Grade Connections: Bolted/mechanical. Silicon-bronze hardware.
4. Ground Rods: ¾"x10', copper-clad steel, pointed or segmented-type.
5. Test Wells: HDPE or polymer concrete handholes.
6. Equipment to be grounded:
    a. Steel-reinforced concrete foundations, #3/0 AWG.
    b. Building/Structural Steel, #3/0 AWG.
    c. Motors less than 50 HP, #2 AWG.
    d. Electrical Distribution Equipment 400 Amp or greater, #3/0 AWG.
    e. Electrical Distribution Equipment less than 400 Amp, #2 AWG or as indicated.
    f. Platforms and Handrails, #2 AWG.

26 05 33 RACEWAY, BOXES, SEALS, AND FITTINGS FOR ELECTRICAL SYSTEMS

1. Permanent above-ground raceway: Rigid aluminum.
    a. Exception: Temporary above-ground raceway will be Schedule 40 PVC.
2. Strut support system and hardware: 304-stainless steel.
    a. Exception: Temporary support system and hardware: Galvanized Steel.
3. Enclosures: NEMA 4X stainless steel.

26 05 43 UNDERGROUND DUCT BANK AND HANDHOLES

1. Duct Banks:
    a. Reinforcement:
        i. Steel reinforcement and structural concrete required within 5-feet of foundations, manholes, passing under roadways and other driving surfaces.

ii. Yard duct banks will be installed with a flowable utility fill, no reinforcement required.

b. Direct-Bury: Banks of direct-bury conduit (not passing under driving surfaces) will be installed with a flowable utility fill.
   i. Exception: Temporary direct-bury conduit (not passing under driving surfaces) will not require flowable utility fill.

c. Concrete and CLSM (Utility Fill): Red-dyed flowable fill except min. 2500-psi concrete for steel-reinforced duct bank.

d. Minimum Coverage: 30-inches.

2. Raceway:
   a. Duct Bank: Schedule 40 PVC.
   b. Direct-Buried: Schedule 40 PVC.
   c. Risers: PVC-coated RGS or Rigid Fiberglass (RTRC) elbows. Risers to be PVC-coated RGS except where permitted otherwise by Engineer.
      i. Exception: Temporary risers will be Schedule 40 PVC.

26 05 53 IDENTIFICATION FOR ELECTRICAL SYSTEMS

1. Equipment Nameplates:
   a. White with black lettering, 4”x2”.
2. Required for each device/equipment with a cable.

26 24 13 LOW VOLTAGE DISTRIBUTION TRANSFORMERS

1. Dry-type, ventilated with 115℃ rise. Copper or Aluminum windings. Provide as indicated on the drawings.

26 24 16 PANELBOARDS

1. Copper or aluminum bus, main breaker, fully-rated.
2. Provide as indicated on the drawings.
3. Surge Protection Device (with Surge Counter) required for all panelboards. (Assume 80kA rating as minimum)
4. Enclosure: NEMA 3R.

26 27 26 WIRING DEVICES

1. As indicated on the drawings.

26 29 13 ENCLOSED CONTROLLERS

1. Safety Switches:
   a. Heavy-duty type, make-before break.

   b. Enclosure: NEMA 4X stainless steel.
      i. Exception: NEMA 3R for temporary equipment.
   c. Provide auxiliary SPDT contact option for VFD safety switches.
2. Pilot Devices:
   a. Heavy duty, 30mm, NEMA 4X.
   b. Lights to be push-to-test LED.
3. Motor Starters:
   a. Provide with adjustable magnetic-only motor circuit protector (MCP). MCP to be provided with external, lockable handle that indicates "ON", "OFF", and "TRIP".
   b. Provide with 120-Vac CPT and controls as indicated.
   c. Starters for process equipment to be provided with Ethernet-capable solid-state overload relay.
   d. Enclosure: NEMA 3R.

26 50 00 LIGHTING

1. As required in the lighting schedule and plans.

31 20 50 SITE PREPARATION AND EARTHWORK

1. All compactions shall be proof rolled where practical.
2. In lieu of proofrolling due to site constraints, compactions shall be per Standard Proctor (ASTM D698) using sheepsfoot roller or self-propelled compactor.
3. Excavation shall be as necessary to construct structures in accordance with the drawings.
4. Fill to be acquired onsite to extents possible and offsite as necessary for all backfill of new structures.
5. Finish grading of site and access roads.
6. Compact to 95% per Standard Proctor (ASTM D698) for backfill.
7. Surface dewatering at creek crossings.
8. Surface dewatering of incidental water at other excavations.

31 20 50 STRUCTURAL EXCAVATION

1. All compactions shall be proofrooled where practical.
2. In lieu of proofrolling due to site constraints, compactions shall be per Standard Proctor (ASTM D698) using sheepsfoot roller or self-propelled compactor.
3. Backfilling of Structures to 95% per Standard Proctor (ASTM D698) for general fill and structural fill.
4. Pavement and floor slabs subgrade to 95% per Standard Proctor (ASTM D698).

5. Overexcavation of high plasticity soil to extend 3 to 5 feet below foundations and floor slabs backfilled with Flexible Base conforming to TxDOT Standard Specification Item 247, Type A or D, Grade 1-2 or 3.
6. Backfill around structure walls will include a 1'-6" wide column of granular material around the walls with the remainder of backfill completed with on-site soils.

31 20 50 TRENCH EXCAVATION/BACKFILL

1. 6" of granular pipe embedment material below pipe and 12" above pipe – ASTM C33 No. 57 Stone or as indicated in the Drawings.
2. Backfill granular pipe embedment material around pipe.
3. Above pipe –95% per Standard Proctor (ASTM D 698)
4. Where trench depths exceed 10 feett, compact cohesive trench backfill material deeper than 10 ft below finished grade 100% per Standard Proctor (ASTM D698).
5. Reinforced concrete encasement for all process piping below structures.

31 20 50 AGGREGATE BASE COURSE

1. 11" aggregate base for aggregate pavement roads.
2. 4" aggregate base below concrete pavement roads.
3. 4" aggregate base for asphalt pavement roads.
4. Aggregate base conforming to TxDOT Standard Specification Item 247, Grade 1-2, Type A or D.
5. Geogrid beneath all aggregate base for roads. Geogrid shall be Tensar NX850 or approved equal.

32 13 13 CONCRETE PAVEMENT

1. Fleming Pass Road
    a. 7" concrete thickness
    b. 28' width
    c. 28-day compressive strength of 3,500 pdi except where High Early Strength (HES) concrete called out

33 11 00 PRESSURE PIPE

1. Buried Yard Piping:
    (a) Ductile Iron Pipe: AWWA C115, C150, and C151.
        a. All pipe and fittings shall be cement-mortar lined per AWWA C104 except the following will be Protecto 401 ceramic epoxy lined if ductile iron pipe is used:

1. Interior piping at the Influent Pump Station to 5’ outside the wet well.
2. Influent and effluent piping at the BNR basins to 5’ outside the basins.
3. Process drain piping at the BNR basins to 5’ outside the basins.
4. Internal recycle wall pipes within the BNR basins.

b. Minimum 350 psi for 4-inch through 12-inch diameter pipes.
c. Minimum 250 psi for 14-inch through 20-inch diameter pipes.
d. Minimum 200 psi for 24-inch diameter pipes.
e. Minimum 150 psi for greater than 24-inch diameter pipes.

(b) PVC: AWWA C900
a. Minimum 150 psi for 4- through 12-inch diameter sewer pipes.
b. Minimum 100 psi for 14- through 20-inch diameter sewer pipes.
c. Minimum 200 psi for 4- through 6-inch diameter water main pipes.

(c) Restrained mechanical or restrained push-on-type joints for pipe and fittings.
(d) Ductile iron piping to include exterior bituminous coating for pipe and fittings.
(e) Ductile iron piping to include polyethylene encasement (minimum 8 mils) for pipe and fittings.

2. Water Service Piping:
(a) For pipes less than or equal to 3-inches in diameter.
(b) Polyethylene plastic tubing: ASTM D2737 SDR 9 200 psi
(c) PVC: ASTM D1785 Schedule 80 PVC
3. Exposed Exterior Process Piping
(a) Ductile Iron Pipe, Flanged Pipe & Fittings
(b) Primed and painted.
3. Air Piping
(a) Above Grade 304 SST piping:
a. Insulation as needed for accessible piping
(b) Below Grade Air Pipe: Unlined Ductile Iron Pipe
4. Misc. PVC Pipe
(a) Sch 80, Glue Fittings
(b) All solvents must be compatible with chemicals being used.

33 12 16 UTILITY VALVES AND ACCESSORIES

1. Valves AWWA nut, manual handwheel, or motor actuation, as indicated on the drawings. Buried valves shall be mechanical joint, exposed/interior valves shall be flanged. Paint shall be epoxy in the interior and on the exterior per AWWA C550.
2. Air Release Valves shall conform to AWWA C512.
(a) Heavy-duty wastewater style

(b) Stainless steel internal parts
(c) Isolation valve at connection

3. Butterfly valves for air service shall conform to AWWA C504.
   (a) Ductile or cast iron body
   (b) 316 stainless steel stem
   (c) Synthetic rubber seat
4. Check valves shall by swing-type and conform to AWWA C508.
   (a) Iron body
   (b) Full opening
   (c) Stainless steel hinge pin with outside lever and weight
5. Plug valves shall conform to AWWA C517.
   (a) Cast iron body and cover
   (b) Cast or ductile iron plug
   (c) Synthetic rubber facing
8. Valve boxes shall be two-piece cast iron with extension stems and marked drop cover.

33 31 01 GRAVITY SANITARY PIPE

1. Buried Yard Piping: Ductile Iron per ANSI/AWWA C151/A21.51, ANSI/AWWA C110/A21.10, and ANSI/AWWA C153/A21.53.
2. Buried Yard Piping: PVC
   a. ASTM D3034 SDR 26.
3. Buried Yard Piping: FRP per ASTM D4161
4. Manholes
   (a) Standard Precast Concrete Manholes, less than 10-foot diameter, minimum wall thickness equal to 1/12 of inside diameter (in inches) plus one inch, minimum 12-inch base section. Lining shall be Raven Chemicals or Carboline epoxy liner, 80 mils minimum thickness.
   (b) Manholes 10-foot diameter shall be Armorock polymer concrete or approved equal.
   (c) Trelleborg Pipe Seals Milford or Press-Seal Corporation pipe connectors.
   (d) Neenah or EJ manhole frame and covers.

33 31 50 PIPE INSTALLATION

1. Installation of DIP and fittings shall be per AWWA M41.
2. Installation of FRP shall be per AWWA M45.
3. Installation of PVC shall be per AWWA M11.
4. Pipe embedment shall follow 31 20 50 – SITE PREPARATION AND EARTHWORK
5. Encase ductile iron pipe, fittings, valves, and other appurtenances with polyethylene film as indicated or as specified, conform to AWWA C105.

6. Field testing per 33 31 50 – PIPE INSTALLATION.
7. Disinfection per 33 31 50 – PIPE INSTALLATION and AWWA C651.

33 32 22 SUBMERSIBLE PUMPS

1. Equipment manufacturer: Flygt, a Xylem brand.
2. Three (3) Submersible Pumps for influent pumping
    a. Capacity:
        i. Two at 2,500 gpm and 84.0 ft TDH
        ii. One at 5,000 gpm and 84.0 ft TDH
    b. Max Horsepower: 85 and 150 hp
3. Accessories:
    a. Pump Discharge Connection
    b. Rail Guides, stainless steel
    c. Lifting Chain or Cable
    d. Guide Rails
    e. Cable Holder
4. Spare Parts: as specified in Section 33 32 22.
5. Startup: Supplier shall provide start-up, and testing services for pumps as specified in DIVISION 01 and Section 33 32 22.

35 20 16 SLIDE GATES

1. Equipment manufacturer:
    a. Rodney Hunt.
    b. Waterman Industries, Inc.
    c. Hydro Gate Corporation.
    d. Whipps, Inc.
    e. Golden Harvest, Inc.
2. Conform to AWWA C561
    a. Slide, reinforcing, and frame: Type 316 Stainless Steel
3. Gates:
    a. Quantity as specified in Section 35 20 16.
4. Accessories:
    a. Rising Stems, 304 stainless steel
    b. Seals, neoprene
    c. Fasteners and Anchor Bolts, 316 stainless steel
    d. Actuator Lift Nuts
    e. Wheel or Crank Operators or Electric.
    f. Stop Collars
5. Spare Parts: as specified in Section 35 20 16.
6. Startup: Supplier shall provide start-up and testing services for gates as specified in DIVISION 01, including leak testing.

DIV 40 PROCESS CONTROL AND INSTRUMENTATION REQUIREMENTS

1. Provide an alarm notification panel fitted with a RTU and MDS Orbit radio for the influent pump station's temporary pumping system.
    a. Enclosure: NEMA 4X.
2. Provide antenna with 10'-0" minimum pole.

43 11 31 ROTARY HELICAL SCREW BLOWERS

1. Equipment manufacturer: Aerzen
2. Helical screw positive displacement blowers. Three for aeration service at the BNR Basins and two for mixing at the Flex Tanks.
    a. BNR Basin Aeration:
        i. Capacity: 1,650 scfm, each
        ii. Design Pressure: 10.6 psi
        iii. Max Horsepower: 125 hp
    b. Flex Tanks:
        i. Capacity: 1,080 scfm, each
        ii. Design Pressure: 10.65 psi
        iii. Max Horsepower: 75 hp
3. Accessories:
    a. Sound enclosure with vibration isolators and cooling/ventilation fan.
    b. Discharge pressure relief valve.
    c. Inlet filter.
    d. Discharge silencer.
    e. Check valve.
    f. Flexible Connections.
    g. Integral VFD and control panel.
4. Spare Parts: as specified in Section 43 11 31.
5. Startup: Supplier shall provide start-up, and testing services for blowers as specified in DIVISION 01 and Section 43 11 31.

43 23 58 ROTARY LOBE PUMPS

1. Equipment manufacturer: Boerger
2. Two (2) rotary lobe for raw wastewater offloading, WAS and centrifuge feed pumping.
    a. WAS service:
        i. Total Solids: 0.5 – 2.0%
        ii. Capacity: 60-300 gpm
        iii. Design Head: 25 psi
        iv. Max Horsepower: 20 hp

3. Spare Parts: as specified in Section 43 23 58.
4. Startup: Supplier shall provide start-up, and testing services for pumps as specified in DIVISION 01 and Section 43 23 58.

46 51 31 COARSE BUBBLE DIFFUSERS

1. Equipment Manufacturer: SSI Aeration
2. Two solids holding tank, disc-style diffuser systems including air diffusers, air piping manifolds and laterals, piping supports, anchor bolts, pipe anchors, and any additional materials required by Supplier's design.
    a. Solids Concentration: 0.5 to 2%
    b. pH Range: 5.5 to 7.5
    c. Temperature: 50 to 86°F
    d. Sidewater Depth:
        i. Minimum: 2 ft
        ii. Maximum: 20 ft
    e. Maximum available pressure at top of dropleg: 10.65 psig at a maximum air rate of 1,080 scfm per holding cell including static pressure, pressure loss through air piping, and pressure loss through the membrane
3. Spare Parts: as specified in Section 46 51 31.
4. Startup:
    a. Supplier shall provide start-up and testing services for tube diffuser systems as specified in DIVISION 01 and Section 46 51 31.

Pre-Final Design Drawings

The Pre-Final Design Drawing package includes the drawings listed below. All drawings are the listed Revision and dated April 6, 2026 and March 31, 2026.

FLEMING PASS ROADWAY IMPROVEMENTS	
DRAWING NO.	**DRAWING NAME**
GENERAL	
100G001	COVER
100G002	INDEX
100G003	GENERAL LEGEND
100G004	INDEX III
100G005	GENERAL LEGEND
100G006	SPACE MATERIAL MATRIX
TRANSPORTATION	
001C001-1	TRAFFIC CONTROL PLAN SEQUENCE OF CONSTRUCTION
001C001-2	TRAFFIC CONTROL PLAN PHASE 1 STEPS 1 & 2
001C001-3	TRAFFIC CONTROL PLAN PHASE 2 STEPS 1 & 2
006C5XX-1	CIVIL TxDOT REF STANDARD DETAIL SHEET X
006C5XX-2	CIVIL TxDOT REF STANDARD DETAIL SHEET X
006C5XX-3	CIVIL TxDOT REF STANDARD DETAIL SHEET X
006C5XX-4	CIVIL TxDOT REF STANDARD DETAIL SHEET X
006C5XX-5	CIVIL TxDOT REF STANDARD DETAIL SHEET X
006C5XX-6	CIVIL TxDOT REF STANDARD DETAIL SHEET X
006C5XX-7	CIVIL TxDOT REF STANDARD DETAIL SHEET X
006C5XX-8	CIVIL TxDOT REF STANDARD DETAIL SHEET X
006C5XX-9	CIVIL TxDOT REF STANDARD DETAIL SHEET X
006C5XX-10	CIVIL TxDOT REF STANDARD DETAIL SHEET X
006C5XX-11	CIVIL TxDOT REF STANDARD DETAIL SHEET X
006C5XX-12	CIVIL TxDOT REF STANDARD DETAIL SHEET X
006C5XX-13	CIVIL TxDOT REF STANDARD DETAIL SHEET X
006C5XX-14	CIVIL TxDOT REF STANDARD DETAIL SHEET X
006C5XX-15	CIVIL TxDOT REF STANDARD DETAIL SHEET X
001C001-4	FLEMING PASS TYPICAL SECTIONS
001C001-5	FLEMING PASS HORIZONTAL ALIGNMENT DATA
001C001-6	FLEMING PASS PLAN & PROFILE STA 18+00
001C001-7	FLEMING PASS PLAN & PROFILE STA 18+00 TO END
001C001-8	FLEMING PASS DRIVEWAY PLAN AND PROFILE
006C5XX-16	CIVIL COSM REF STANDARD DETAIL SHEET X
006C5XX-17	CIVIL COSM REF STANDARD DETAIL SHEET X
006C5XX-18	CIVIL COSM REF STANDARD DETAIL SHEET X
006C5XX-19	CIVIL COSM REF STANDARD DETAIL SHEET X

006C5XX-20	CIVIL COSM REF STANDARD DETAIL SHEET X
006C5XX-21	CIVIL COSM REF STANDARD DETAIL SHEET X
006C5XX-22	CIVIL COSM REF STANDARD DETAIL SHEET X
001C001-9	FLEMING PASS CROSS SECTIONS BEGIN TO STA 20+50
001C001-10	FLEMING PASS CROSS SECTIONS STA 21+00 TO END
001C001-11	EXISTING OVERALL DRAINAGE AREA MAP
001C001-12	PROPOSED OVERALL DRAINAGE AREA MAP
001C001-13	CULVERT 1B PLAN AND PROFILE
001C001-14	CULVERT 2B-1 PLAN AND PROFILE
001C001-15	CULVERT 2B-2 PLAN AND PROFILE
001C001-16	CUVLERT 2B-3 PLAN AND PROFILE
006C5XX-23	CIVIL TxDOT REF STANDARD DETAIL SHEET X
006C5XX-24	CIVIL TxDOT REF STANDARD DETAIL SHEET X
006C5XX-25	CIVIL TxDOT REF STANDARD DETAIL SHEET X
006C5XX-26	CIVIL TxDOT REF STANDARD DETAIL SHEET X
006C5XX-27	CIVIL TxDOT REF STANDARD DETAIL SHEET X
006C5XX-28	CIVIL TxDOT REF STANDARD DETAIL SHEET X

FM 1978 WATER RECLAMATION FACILITY	
DRAWING NO.	**DRAWING NAME**
GENERAL	
000G001	COVER
000G002	INDEX
000G004	GENERAL LEGEND
CIVIL	
002TP1C001	CIVIL LEGEND AND ABBREVIATIONS
002TP1C002	CIVIL GENERAL NOTES
002TP1C101	CIVIL SURVEY CONTROL PLAN
002TP1C102	CIVIL CONSTRUCTION ACCESS PLAN
002TP1C110	CIVIL STORM EXISTING DRAINAGE AREA PLAN
002YP1C111	CIVIL STORM PROPOSED DRAINAGE AREA PLAN
002TP1REF01	CIVIL REFERENCE DRAWING COSM STANDARD CONSTRUCTION NOTES
006TP1C501	CIVIL STANDARD DETAILS 1
006TP1C502	CIVIL STANDARD DETAILS 2
006TP1C503	CIVIL STANDARD DETAILS 3
006TP1C504	CIVIL STANDARD DETAILS 4
006TP1REF01	CIVIL REFERENCE DRAWING COSM STANDARD DETAILS 1
006TP1REF02	CIVIL REFERENCE DRAWING COSM STANDARD DETAILS 2
006TP1REF03	CIVIL REFERENCE DRAWING COSM STANDARD DETAILS 3

006TP1REF04	CIVIL REFERENCE DRAWING COSM STANDARD DETAILS 4
006TP1REF05	CIVIL REFERENCE DRAWING COSM STANDARD DETAILS 5
006TP1REF06	CIVIL REFERENCE DRAWING COSM STANDARD DETAILS 6
006TP1REF07	CIVIL REFERENCE DRAWING COSM STANDARD DETAILS 7
006TP1REF08	CIVIL REFERENCE DRAWING COSM STANDARD DETAILS 8
006TP1REF09	CIVIL REFERENCE DRAWING COSM STANDARD DETAILS 9
006TP1REF10	CIVIL REFERENCE DRAWING COSM STANDARD DETAILS 10
006TP1REF11	CIVIL REFERENCE DRAWING COSM STANDARD DETAILS 11
006TP1REF12	CIVIL REFERENCE DRAWING COSM STANDARD DETAILS 12
006TP1REF13	CIVIL REFERENCE DRAWING COSM STANDARD DETAILS 13
006TP1REF14	CIVIL REFERENCE DRAWING COSM STANDARD DETAILS 14
006TP1REF15	CIVIL REFERENCE DRAWING COSM STANDARD DETAILS 15
006TP1REF16	CIVIL REFERENCE DRAWING COSM STANDARD DETAILS 16
006TP1REF17	CIVIL REFERENCE DRAWING COSM STANDARD DETAILS 17
006TP1REF18	CIVIL REFERENCE DRAWING COSM STANDARD DETAILS 18
006TP1REF19	CIVIL REFERENCE DRAWING COSM STANDARD DETAILS 19
006TP1REF20	CIVIL REFERENCE DRAWING COSM STANDARD DETAILS 20
006TP1REF21	CIVIL REFERENCE DRAWING COSM STANDARD DETAILS 21
006TP1REF22	CIVIL REFERENCE DRAWING COSM STANDARD DETAILS 22
006TP1REF23	CIVIL REFERENCE DRAWING COSM STANDARD DETAILS 23
006TP1REF24	CIVIL REFERENCE DRAWING COSM STANDARD DETAILS 24
010TP1CD100	CIVIL OVERALL DEMOLITION PLAN
010TP1C101	CIVIL OVERALL SITE, GRADING, AND PIPING PLAN
010TP1C301	CIVIL ENLARGED SITE, GRADING, AND PIPING PLAN 1
010TP1C302	CIVIL ENLARGED SITE, GRADING, AND PIPING PLAN 2
010TP1C303	CIVIL ENLARGED SITE, GRADING, AND PIPING PLAN 3
010TP1C304	CIVIL ENLARGED SITE, GRADING, AND PIPING PLAN 4
010TP1C305	CIVIL ENLARGED SITE, GRADING, AND PIPING PLAN 5
010TP1C310	CIVIL SITE AND GRADING POINTS TABLE(S)
010TP1C311	CIVIL PIPING POINTS TABLE(S)
040TP1C101	CIVIL OVERALL EROSION AND SEDIMENT CONTROL PLAN
040TP1C301	CIVIL ENLARGED EROSION AND SEDIMENT CONTROL PLAN - WWTP SITE
040TP1C302	CIVIL ENLARGED EROSION AND SEDIMENT CONTROL PLAN - FLEMING PASS
STRUCTURAL	
002S001	STRUCTURAL GENERAL NOTES SHEET 1
002S002	STRUCTURAL GENERAL NOTES SHEET 2
006S001	STRUCTURAL LEGEND
006S501	STRUCTURAL STANDARD DETAILS SHEET 1
006S502	STRUCTURAL STANDARD DETAILS SHEET 2
006S503	STRUCTURAL STANDARD DETAILS SHEET 3

006S504	STRUCTURAL STANDARD DETAILS SHEET 4
006S505	STRUCTURAL STANDARD DETAILS SHEET 5
006S506	STRUCTURAL STANDARD DETAILS SHEET 6
006S507	STRUCTURAL STANDARD DETAILS SHEET 7
200S101	INFLUENT PUMP STATION PLANS
200S102	INFLUENT PUMP STATION VALVE PAD PLAN AND SECTION
200S301	INFLUENT PUMP STATION SECTIONS AND DETAILS SHEET 1
200S302	INFLUENT PUMP STATION SECTIONS AND DETAILS SHEET 2
200S303	INFLUENT PUMP STATION SECTIONS AND DETAILS SHEET 3
420S102	BNR BASINS FOUNDATION PLAN
420S103	BNR BASINS TOP PLAN @ EL 614.00'
420S301	BNR BASINS SECTIONS SHEET 1
420S302	BNR BASINS SECTIONS SHEET 2
710S101	WAS HOLDING TANK FOUNDATION PLAN
710S102	WAS HOLDING TANK TOP PLAN @ EL 608.50'
710S103	WAS HOLDING TANK BLOWER CANOPY PLAN AND SECTION
710S301	WAS HOLDING TANK SECTIONS AND DETAILS
ELECTRICAL	
000E001	ELECTRICAL LEGEND
006TP1E001	ELECTRICAL STANDARD DETAILS SHEET 1
100TP1E101	ELECTRICAL SITE PLAN AND AREA CLASSIFICATION
200E101	INFLUENT PUMP STATION PLAN
710TP1E101	FLEX TANK ELECTRICAL PLAN
710TP1E601	ELECTRICAL FLEX TANK ONE-LINE DIAGRAM
PROCESS	
002D001	PROCESS LEGEND, ABBREVIATIONS, AND GENERAL NOTES
002TP1D601	PROCESS FLOW DIAGRAM PUMP AND HAUL
006D501	PROCESS STANDARD DETAILS SHEET 1
006D502	PROCESS STANDARD DETAILS SHEET 2
006D503	PROCESS STANDARD DETAILS SHEET 3
006D504	PROCESS STANDARD DETAILS SHEET 4
200D101	INFLUENT PUMP STATION OVERALL PLAN
200D102	INFLUENT PUMP STATION ENGLARGED WET WELL PLAN
200D103	INFLUENT PUMP STATION ENLARGED PIPING PLAN
200D301	INFLUENT PUMP STATION WET WELL SECTIONS I
200D302	INFLUENT PUMP STATION WET WELL SECTIONS II
200D303	INFLUENT PUMP STATION PIPING SECTIONS
420D101	UPPER BNR BASINS PLAN
420D102	LOWER BNR BASINS PLAN
420D103	BNR BASINS ISOMETRIC
420D301	BNR BASINS SECTIONS I

420D302	BNR BASINS SECTIONS II
710D101	WAS HOLDING TANK PLAN
710D102	ENLARGED PUMP PAD PLAN
710D103	ENLARGED BLOWER PAD PLAN
710D301	FLEX TANK SECTIONS SHEET 1
710D302	FLEX TANK SECTIONS SHEET 2

ATTACHMENT 1A-5 – CLARIFICATIONS & EXCLUSIONS

GENERAL

1. The documents in Exhibit 1-A – Contract Price Proposal are intended to work together to define the Scope of Services, Contract Time and Contract Price for Phase 2A.
2. The design criteria associated with engineered equipment included in Phase 2A - Interim Wastewater Management, Fleming Pass Road, & Facility Early Works are based on Attachment 1A-4 –Work Description.
3. The Contract Price and Contract Times for Phase 2A are based on the following:
    a. Contract executed and Notice to Proceed issued to Design/Builder on or before July 15, 2026. Notice to Proceed shall authorize Design-Builder to proceed with all Work associated with this proposal, including issuing Purchase Orders and Subcontract(s) associated with Phase 2A.
    b. A standard 5-day week working 10 hours per day.
        i. Caisson activities are based on 12 hour work days.
        ii. Design-Builder reserves the right to work Saturdays as weather makeup days.
    c. Taxes including sales, use, or special use on permanent equipment and materials are not included as a Tax Exemption Certificate has been provided by Owner to Design-Builder.
    d. Performance & Payment Bonds are included.
    e. Builder's Risk Insurance is included.
    f. Procurement of easements is excluded.
    g. Spare parts are not included, unless specifically listed by process equipment specification in the Attachment 1A-4 –Work Description.
    h. Excludes cost for any installation, connection, use, or other fees for providing utility services for the permanent facility to the location(s) on site as indicated in the Contract Documents.
        i. All cost shall be paid directly by Owner.
        ii. Shall include, but is not limited to, natural gas, electrical, water, telephone, and internet service.
    i. Temporary and permanent water service will be provided by the Owner at no cost to the Design-Builder. Temporary service, meter, backflow preventers, and valve at the project site shall be provided by Owner no later than September 15, 2026, and will provide a minimum of a 3" HDPE pipe and a minimum flow of 140 gpm. The waterline end point on the jobsite shall be install within 10' of 29°48'39.33"N Latitude and 97°55'14.77"W Longitude. This endpoint shall have a shutoff valve and tee for site connections.

j. Temporary power shall be provided to the site by Owner no later than October 16, 2026. Design-Builder will provide temporary power connection (downstream of the meter can to the jobsite) and meter can. It is assumed that the meter will be set by Bluebonnet Electric. It is also assumed that everything from the high line to the meter is the responsibility of Bluebonnet Electric. Cost for monthly utility fees for the Pump & Haul (Temporary service #1) are of the responsibility of the owner.
k. TCEQ Discharge Permit #WQ0016808001shall be provided no later than October 6, 2026. Fleming Pass and Clearing & Grubbing, Temporary Roads and Rough Grading work can proceed prior to issuance of the TCEQ Discharge permit.
l. The contract price does not include or meet specific MBE/WBE or other small, disadvantaged or specific business participation goals.
m. Owner's contingency, Additional Services, or Owner's other costs are not included in the Guaranteed Maximum Price.
n. The project schedule dates for the delivery of equipment are based on current lead times provided by the equipment and material suppliers. If these lead times are impacted by the issuance of a notice to proceed to Design-Builder, the Design-Builder may request a change in the Contract Time and Price.
o. Additional resources to manage Texas Public Information Act requests for information or documentation are not included.
p. AIS, BABA, or other requirements due to outside funding sources are excluded.
q. Design-Builder's responsibility to support Owner in obtaining Owner-provided permits is limited to providing required technical information for the permit application. The Owner will retain responsibility for development of permit applications, fees, and communication with permitting authority.
r. Once mobilized, construction activities will operate continuously, including Phase 2B activities included in a future Contract Price Amendment. Demobilization is excluded from this Contract Price Proposal and will be included in the future Contract Price Proposal.
s. Radio frequencies and receivers for plant communications shall be furnished and installed by the Owner.

4. Design-Builder will rely on information provided by Owner as complete and accurate without independent verification. If Owner's information is incomplete or inaccurate, Design-Builder will receive a change in scope with associated change in time and fee
5. Force Majeure Events include not only the event itself, but the resulting impact on the Project after the event has ceased, subject to design builder's obligation to take reasonable steps to mitigate. For example, in the event of a Force Majeure weather

event, the Project impacts such as removal of mud, standing water, frozen soil or weather damage due to hail, high wind or other weather events would be included in the Force Majeure impact.

6. Upon occupying any portion of the Work for Owner's use, risk of loss for that portion of the Work shall pass to Owner, subject only to Design-Builder's responsibility's during warranty work.

WATER RECLAMATION FACILITY & FLEMING PASS FINAL DESIGN

1. Owner will have review periods of 14 days for each final design package and for all construction-related submittals identified for "Owner Review and Approval."
2. TCEQ plan review for each design package will be a maximum of 90 calendar days for the first submittal and 14 calendar days for the second submittal.
3. TxDOT review of driveway permits is assumed to be a maximum of 90 calendar days with one comment response and resubmittal review period of 14 calendar days.
4. Owner is solely responsible for any re-use or alteration of design Work Product not under the supervision of Design-Builder.

FACILITY EARLY WORKS CONSTRUCTION

1. One mobilization to the Project site is included for performance of the Work, including Phase 2B, which will have a Notice to Proceed no later than November 1, 2026.
2. Excess spoils from construction of the improvements will be managed as described in the preliminary geotechnical report.
3. Soil improvements will be completed as required by the preliminary geotechnical report.
4. Groundwater encountered during the geotechnical investigation(s) was insignificant and was not indicative of subsurface dewatering requirements. Subsurface dewatering including, but not limited to, the use of a deep well or well point system is not included in the price.
5. No provisions for restoration due to flooding is included in the work. Any delays or site access limitations will be considered a force majeure event in accordance with the General Conditions.
6. Third-party testing is excluded from this scope of work and will be completed by the Owner. This includes materials testing required by the specifications. All reports completed by the Owner's testing service will be provided to the Design-Builder within 24 hours of test completion via Procore. Testing call outs will be coordinated between the Design-Builder and the Owner, or their designee.
    a. For concrete cylinder testing, it is assumed the Owner's testing service will take 6 cylinders per test, in accordance with the Contract Documents.
    b. Testing service will provide proper storage of concrete cylinders as required by the Contract Documents.

c. Costs associated with immediate retesting of materials or work in progress due to routine field adjustments shall be at the Owner's cost. Provided the testing personnel are already mobilized and onsite, these immediate retests will not constitute a failed test subject to Design-Builder backcharges or claims.
d. The Owner shall bear the cost of testing agency standby time during scheduled testing operations.
e. The Design-Builder will only be responsible for additional testing costs that require remobilization of the testing agency specifically due to a definitive failure of completed work.
f. The Design-Builder will provide a minimum of 24 hours' notice for required testing call-outs to the Owner or their designee.

7. Special inspections and testing are excluded from this Contract Price Proposal and will be addressed in future Contract Price Proposals.

FLEMING PASS IMPROVEMENTS

1. On-going maintenance and final dress-up of Fleming Pass is excluded and will be address in Phase 2B – Balance of Plant.
2. Fleming Pass improvements are sequenced to maintain access for local landowners at all times. Temporary closures for moving equipment or materials may occur.
3. Drainage and temporary construction easements with adjacent property owners will be procured by the Owner.
4. TxDOT review of final design documents and approval to begin construction will be issued within 90 days of submittal by Design-Builder.
5. Standard Traffic Control Plans (TCP) and measures will be used for any TCP required at the intersection of Fleming Pass and FM 1978. Design of Project specific TCP is excluded.
6. Pavement markings are not included.

INTERIM WASTEWATER MANAGEMENT SYSTEM

1. Equipment to be utilized by the City for Interim Wastewater Management operations will be energized using site temporary power infrastructure. If power by Bluebonnet Electric Co-op is delayed to site and generators are required, additional costs for generator rentals, mobilization and demobilization, fuel, and management will be passed on to the Owner.
2. The following are included in this Contract Price Proposal for the Owner's use during the Interim Wastewater Management operations.
    a. Permanent facilities included in this Contract Price Proposal that will be utilized for interim wastewater management include manholes and

interceptors within the site boundary, the Influent Pump Station structure, the WAS holding tank structure, coarse bubble diffusers, WAS holding tank blowers, rotary lobe pumps and piping manifolds to the extent they are required for interim wastewater management.

b. Temporary power to WAS blowers and rotary lobe pumps.

3. If wastewater flows are unavailable, the project's temporary potable water source will be used to wet or operate equipment that is installed to support Interim Wastewater Management operations as needed for regular maintenance.
4. Temporary pumps, piping, valves and connections not listed will be paid for by the Owner under the Allowance for such items or through separate funding.

COMMISSIONING & START-UP

1. Manufacturer field services as specified for the equipment procurement packages included in this Contract Price Amendment are included in the Contract Price.
2. Startup with wastewater or process flow of Interim Wastewater Management provisions are not included in the Contract Price. These costs are included in the Basis of Allowance for the Interim Wastewater Management.
3. All Start-up, Commissioning, Functional Testing and Training services provided by Design-Builder will be addressed in the Phase 2B - Balance of Plant Contract Price Amendment.

ATTACHMENT 1A-6
RISK REGISTER & BASIS OF CONTINGENCIES

Design-Builder Contingency				
Risk Title	**Description**	**Impact Details**	**Notes**	**Value**
Weather related issues	The project schedule may be impacted by adverse weather events, such as heavy or prolonged rainfall, that exceed the number of days allowed in the contract.	Schedule		$ 40,932
Differing Site Conditions - Ground Water	Several nearby properties have ponds that the owners have indicated are "spring-fed" suggesting there may be small pockets of perched groundwater or other springs that are not captured on the geotech	Cost, Schedule	Covers (2) Eductor well systems	$ 1,000,000
Global Fuel Price Instability	Geopolitical events impact the price of diesel resulting in increased costs for daily construction operations, freight for equipment, and trucking operations for import/haul off of soils	Cost	Total fuel in estimate was 19609 gallons; Assumed $2.00 per gallon increase from $5.00.	$ 39,219
Differing Site Conditions – Subsurface	There are differing site conditions when excavations begin - subsurface structures, rock that was not anticipated based on geotech, pockets of soft soils, etc.	Cost, Schedule		$ 306,135
Established Warranty Date	Subcontractors could misunderstand when warranty periods start. The contract will establish the warranty period beginning at either final or substantial completion, not upon inspection or acceptance that the work is installed correctly. This could lead to disputes on whether the work in place needs to be maintained or otherwise corrected prior to the warranty period start.	Cost	Extra warranty coverage. Includes (4) valves and (3) electrical panels	$ 53,000
			Total	**$ 1,439,286**

Owner Contingency				
Risk Title	**Description**	**Impact Details**	**Notes**	**Value**
Main electricity service delayed	The permanent electrical service to be provided by the utility may be delayed, which would impact the cost for temporary power.	Schedule	Added 2 months of generator rental at $25,000 per month and $470 per day fuel cost.	$ 78,200
Relocate Utilities on Fleming Pass	Unknown utilities will need to be relocated	Cost, Schedule		$ 50,000
CCN Release Delay	If the City experiences delays to the CCN release to bring City water to the site, there could be an extended period of time where water has to be hauled in for construction resulting in increased costs	Cost, Schedule	Assumed 45-day delay in water	$ 65,000
CW Interceptor Elevation Changes	The CW interceptor is at a very preliminary design stage, but the inverts for the influent manholes and pump station are being established. If detailed design determines the CW interceptor needs to be deeper, it could delay construction or cause a major change.	Cost, Schedule		$ 925,000
			Total	**$ 1,118,200**

ATTACHMENT 1A-7 – STATEMENT OF ADDITIONAL SERVICES

Additional Services (if required) included in the Contract Price Amendment are for specific scopes of work or project-related expenses that are unquantifiable or undefinable at the time of the proposal submittal. These Additional Services are not included in the Guaranteed Maximum Price (GMP) until the final pricing for the Additional Services are developed, and the scope of work or project related expense is approved by the City via a written authorization at which time it will be moved into the GMP.

Additional Services values listed below are provided to the City of San Marcos (City) based on assumptions and estimated costs. If the portion of the scope of work or project-related expense for which the Additional Services pricing was developed costs less than the Additional Services, the City receives the full amount of the difference back at the end of the project, and if the cost exceeds the Additional Services value, the City is responsible for paying the difference.

Phase 2A– Additional Services #1 – Interim Wastewater Systems

Background and Justification

This Basis of Additional Services establishes the scope and associated costs for an interim wastewater pumping and holding system. The new wastewater treatment plant is scheduled to receive influent sewer flows prior to the full construction and commissioning of the permanent treatment facilities. To manage these early flows, a temporary diversion and holding strategy must be implemented to safely collect and store the sewage until it can be transported to the current active sewage plant for treatment. Based on how quickly new development occurs in the area not all items may be required for the pump and haul operations.

Operational Narrative

During the interim period, incoming raw wastewater flows will be directed into the newly constructed Influent Pump Station (IPS). Because the downstream permanent treatment processes will not yet be operational, a temporary pumping system will be utilized.

The temporary pumps will draw sewage from the IPS and discharge it into the newly constructed Waste Activated Sludge (WAS) holding tank, which will temporarily serve as an interim sewage holding tank. At the inlet of the WAS holding tank, raw sewage will pass through a manual bar screen to capture large debris.

To load the sewage into tanker trucks, the system will utilize two (2) newly purchased Gorman-Rupp centrifugal pumps. These pumps will be powered by a temporary electrical source and do not require fuel to operate. The existing rotary lobe pumps will serve as a

fully redundant backup pumping source in the event that the primary centrifugal pumps experience downtime. Before entering the trucks, the sewage will pass through an inline macerator at the loading slab to grind up any remaining small debris. The City of San Marcos will then transport the wastewater via tanker trucks to the existing, operational sewage plant for final treatment.

Summary of Additional Services

The costs estimated in this statement of Additional Services covers the acquisition (via rental or purchase), installation, and setup of the interim pumping system required to move wastewater from the IPS to the WAS holding tank, the truck-loading system, and necessary auxiliary support and protective equipment. Specifically, this statement of Additional Services includes:

- **Pumping Equipment (Rent or Purchase Option):** Temporary pumps adequately sized to handle the anticipated interim wastewater flows from the IPS wet well. The City of San Marcos retains the option to either rent this equipment (this Additional Service includes a baseline rental duration of 1 year) or purchase the system outright if extended timelines make ownership more cost-effective.
- **Truck Loading Pumps (Purchase):** Outright purchase of two (2) Gorman-Rupp centrifugal pumps intended for primary truck loading operations. These pumps are electrically driven (non-fuel-powered). This configuration allows the rotary lobe pumps to be utilized as a backup pumping source.
- **Tees and Piping Connections:** Addition of two (2) 6"x6"x6" ductile iron tees, temporary hoses, and temporary piping necessary to fully integrate and connect the new Gorman-Rupp centrifugal pumps into the system.
- **Hoses and Piping (IPS to WAS Tank):** Temporary discharge hoses, piping, and necessary fittings to route the sewage from the temporary pumps at the IPS into the WAS holding tank.
- **Remote Location Pumping (Budgetary Provision Only):** An undefined budgetary Additional Service intended to help the City fund pumping activities at remote locations. Because the physical locations, logistics, and truck-loading methods are currently unknown and undefined, this line item does not represent a specific physical scope or material commitment. It acts solely as a discretionary budget that the City can utilize to fund these activities.
- **Manual Bar Screen:** A manually cleaned bar screen mounted at the inlet of the WAS holding tank, intended to intercept and screen large debris out of the sewage before it dumps into the tank.

- **Access Platform, Stairs, and Handrails:** Temporary access stairs, a platform, and handrails installed at the WAS holding tank to allow personnel to safely and physically access the manual bar screen to remove accumulated debris.
- **Inline Macerator:** An inline macerator located at the truck loading slab if the rotary lobe pumps are utilized for truck loading. This equipment is intended to grind up any debris that bypasses the manual bar screen, protecting the rotary lobe pumps from drawing in harmful debris.
- **Power and Controls:** A temporary control panel and float switches installed in the IPS wet well to automate the starting and stopping of the temporary pumps based on water levels. This inclusion also covers the temporary electrical source hookups necessary to power the two (2) electric Gorman-Rupp truck-loading pumps.
- **Instrumentation & Controls (I&C):** Necessary equipment and labor to establish a remote telemetry unit (RTU / radio) connection. This system will be configured to communicate critical alerts—specifically "General Pump Failure" and "High-Level Alarms"—directly to the City of San Marcos.
- **Mobilization and Setup:** Freight, delivery, installation, configuration, and eventual demobilization (if the rental option is selected) of the temporary pumping equipment.

Exclusions and Client Responsibilities

To ensure clear delineation of responsibilities, the following items are **excluded** from this Statement of Additional Services and shall be the responsibility of the City of San Marcos:

- **Truck Loading Operations and Extraction Labor:** While the purchase of the two (2) Gorman-Rupp centrifugal pumps, their connection fittings, and their temporary electrical power connections are included, the physical labor, operation, ongoing electrical utility consumption costs, and day-to-day oversight required to draft or pump the raw sewage out of the IPS wet well or the WAS holding tank and into the haul trucks remain the responsibility of the City.
- **Hauling and Disposal:** All costs associated with the tanker trucks, drivers, transportation logistics, and disposal fees required to haul the sewage from the new plant site to the existing sewage plant.
- **Screenings Removal and Disposal:** The cost, labor, logistics, and disposal fees required to physically clear the manual bar screen, handle the debris from the temporary platform, and haul away the intercepted screenings.
- **Permanent Infrastructure:** Costs associated with the permanent IPS and WAS tank construction.

- **Extended Rental Durations:** If the rental option is chosen for the temporary IPS pumps, the statement of Additional Services assumes a baseline rental duration of 1 year (12 months). Extensions beyond this 1-year period are excluded and may require an adjustment to the Additional Services pricing.

Additional Services Pricing Basis

Additional Services Table	
Description	**Estimated Cost**
IPS Pump System Rental	$142,515
IPS Pump Communication to the Plant	$62,328
Manual Bar Screen at the WAS Tank	$50,000
Inline Macerator at the WAS Truck Loading area	$40,000
Account for temporary handrail and platforms if needed at the WAS tank.	$15,000
Rebuild of the Rotary Lobe Pumps at WAS holding	$50,000
(2) Gorman Rupp Centrifugal Pumps for Temp Truck Loading	$165,485
WAS Truck Loading connection to accomidate temp pumps	$6,885
Undefined Temp Truck Loading Locations (Off Site)	$200,000
Total Estimated Additional Services (if required)	**$ 732,213**

ATTACHMENT 1A-8 – PROJECT SCHEDULE

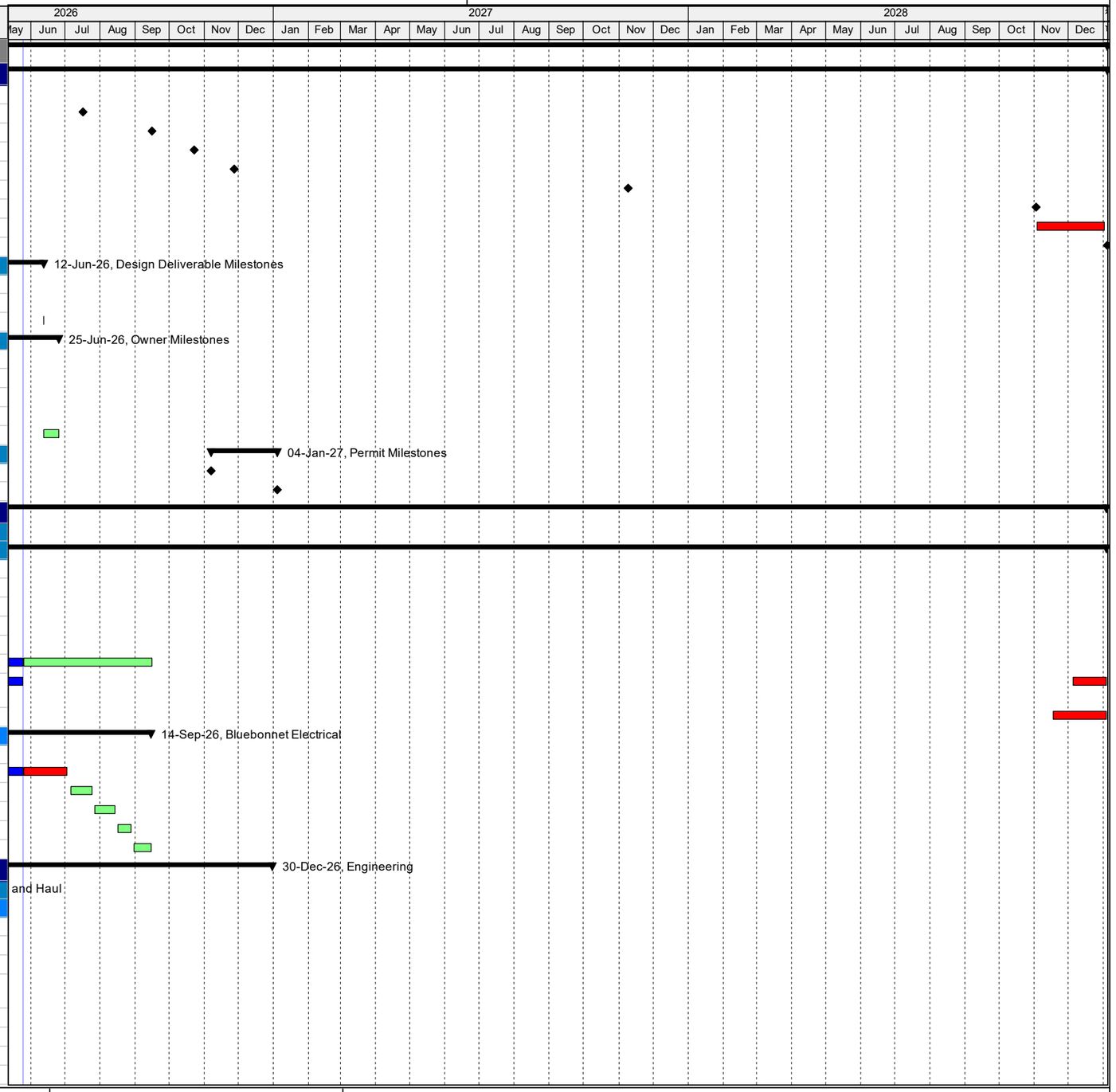
FM 1978 Water Reclamation Facility
Data Date:25-May-26
Print date:08-Jun-26 16:06

San Marcos WWTP

Project Schedule as of 25-May-26

BURNS McDONNELL

Activity ID	Activity Name	Original Duration	Start	Finish
FM 1978 Water Reclamation Facility		882	09-Jul-25 A	04-Jan-29
Milestones		868	01-Aug-25 A	04-Jan-29
PM-00-1000	Milestone - Phase 1 Contract Signed (NTP)	0	01-Aug-25 A	
PM-02-2000	GMP 1 & 2 - Fully Executed NTP	0		17-Jul-26*
PM-03-2000	GMP 3 - Fully Executed NTP	0		15-Sep-26
PM-03-2020	Contractor Mobilization	0	23-Oct-26	
CN-00-1000	Construction - Contractual Manhole Set	0		27-Nov-26*
CN-00-2020	Permanent Infrastructure Available for Interim WWMGT	0		09-Nov-27
CN-00-2000	Construction - Substantial Completion	0		02-Nov-28*
CN-00-2010	Construction - Punchlist to Final Completion	60	03-Nov-28	01-Jan-29*
PM-03-2010	Construction - Final Completion	0		04-Jan-29
Design Deliverable Milestones		169	24-Sep-25 A	12-Jun-26
DD-01-1010	Design (GMP 1) - Submit 60% Interim Wastewater & IFB	1	24-Sep-25 A	24-Sep-25 A
DD-02-1000	Design (GMP 2) -Submit 60%/IFB Design Deliverable	1	01-Apr-26 A	01-Apr-26 A
DD-03-1000	Design (GMP 3) -Submit 60%/IFB Design Deliverable	1	12-Jun-26	12-Jun-26
Owner Milestones		178	24-Sep-25 A	25-Jun-26
CL-01-1000	Owner Review (GMP 1) - Interim Wastewater Design Deliverable	14	24-Sep-25 A	06-Oct-25 A
CL-30-1000	Owner Review (30%) - PDR	14	01-Dec-25 A	15-Dec-25 A
CL-30-1010	Owner Review (30%) - 30% Design Deliverable	14	12-Dec-25 A	07-Jan-26 A
CL-02-1000	Owner Review (GMP 2) - 60% Design Deliverable	14	23-Mar-26 A	06-Apr-26 A
CL-03-1000	Owner Review (GMP 3) - 60% Design Deliverable	14	12-Jun-26	25-Jun-26
Permit Milestones		37	06-Nov-26	04-Jan-27
EN-02-2130	TCEQ (GMP 2) - Approved Early Works Package Documents	0		06-Nov-26
EN-03-2190	TCEQ (GMP 3) - Approved Balance of Plant Documents	0		04-Jan-27
Project Management		868	09-Jul-25 A	03-Jan-29
Project Managment		24	21-Jul-25 A	05-Sep-25 A
Owner Activities		868	09-Jul-25 A	03-Jan-29
CL-00-1000	Owner - Provide Geotechnical Report	1	09-Jul-25 A	09-Jul-25 A
CL-00-1500	Owner - Receive Site Survey From City	1	21-Jul-25 A	21-Jul-25 A
CL-00-1530	Owner - Finalize Funding Source Decision	5	18-Nov-25 A	18-Nov-25 A
CL-00-1550	Owner - Amendment No. 1 Fleming Pass NTP	0	03-Dec-25 A	
CL-00-1560	Owner - Provide Site Drainage Requirements	5	27-Jan-26 A	05-Mar-26 A
CL-00-1540	Owner - Provide Utilities for Site Construction (Water)	229	01-Aug-25 A	15-Sep-26
CL-00-1510	Owner - Provide Temporary Wastewater Management Discharge Permit (TPDES)	30	01-Aug-25 A	03-Jan-29
CL-00-1520	Owner - Provide Final Discharge Permit (TPDES)	30	17-Nov-28	03-Jan-29
Bluebonnet Electrical		135	05-Mar-26 A	14-Sep-26
CL-00-1555	Pre-Design Meeting w/ Bluebonnet	1	05-Mar-26 A	05-Mar-26 A
CL-00-1565	Bluebonnet Design & Cost Estimate (wk 2-8)	40	06-Mar-26 A	02-Jul-26
CL-00-1575	Owner Deposit Payment & Site Ready Papers Due (wk 9-12)	15	06-Jul-26	24-Jul-26
CL-00-1585	Scheduling, Pre-inspections, & Bluebonnet Construction (wk 13-28)	15	27-Jul-26	14-Aug-26
CL-00-1595	Final Inspection & Energization	10	17-Aug-26	28-Aug-26
CL-00-1605	Permanent Power to Site (Bluebonnet)	10	31-Aug-26	14-Sep-26
Engineering		372	14-Jul-25 A	30-Dec-26
Design GMP-1 Temproary Pump and Haul		159	14-Jul-25 A	24-Sep-25 A
Design Pump & Haul		159	14-Jul-25 A	24-Sep-25 A
PR-20-1060	Process (Conceptual) - Temp. Options Vetting	10	21-Jul-25 A	13-Aug-25 A
CV-20-1000	Civil (30%) - Develop Outfall Plan and Profile for Permitting	35	14-Jul-25 A	29-Aug-25 A
PR-20-1010	Process (GMP 1) - Temp. Equipment Schedule/Power Requirements	10	14-Aug-25 A	16-Sep-25 A
PR-20-1020	Process (GMP 1) - Temp Treatment Design (30% Future WWTP Procurement)	30	14-Aug-25 A	16-Sep-25 A
PR-20-1040	Process (GMP 1) - Temp. General Arrangement DWG to Civil	5	14-Aug-25 A	16-Sep-25 A
CV-20-1010	Civil (GMP 1) - Proposed Surface (Temp Roads + Drainage)	26	14-Aug-25 A	24-Sep-25 A
EE-20-1000	Electrical (GMP 1) - Temporary Electrical Service Criteria	10	14-Aug-25 A	24-Sep-25 A
PR-20-1030	Process (GMP 1) - Temp. Equipment Technical Specifications	15	14-Aug-25 A	24-Sep-25 A



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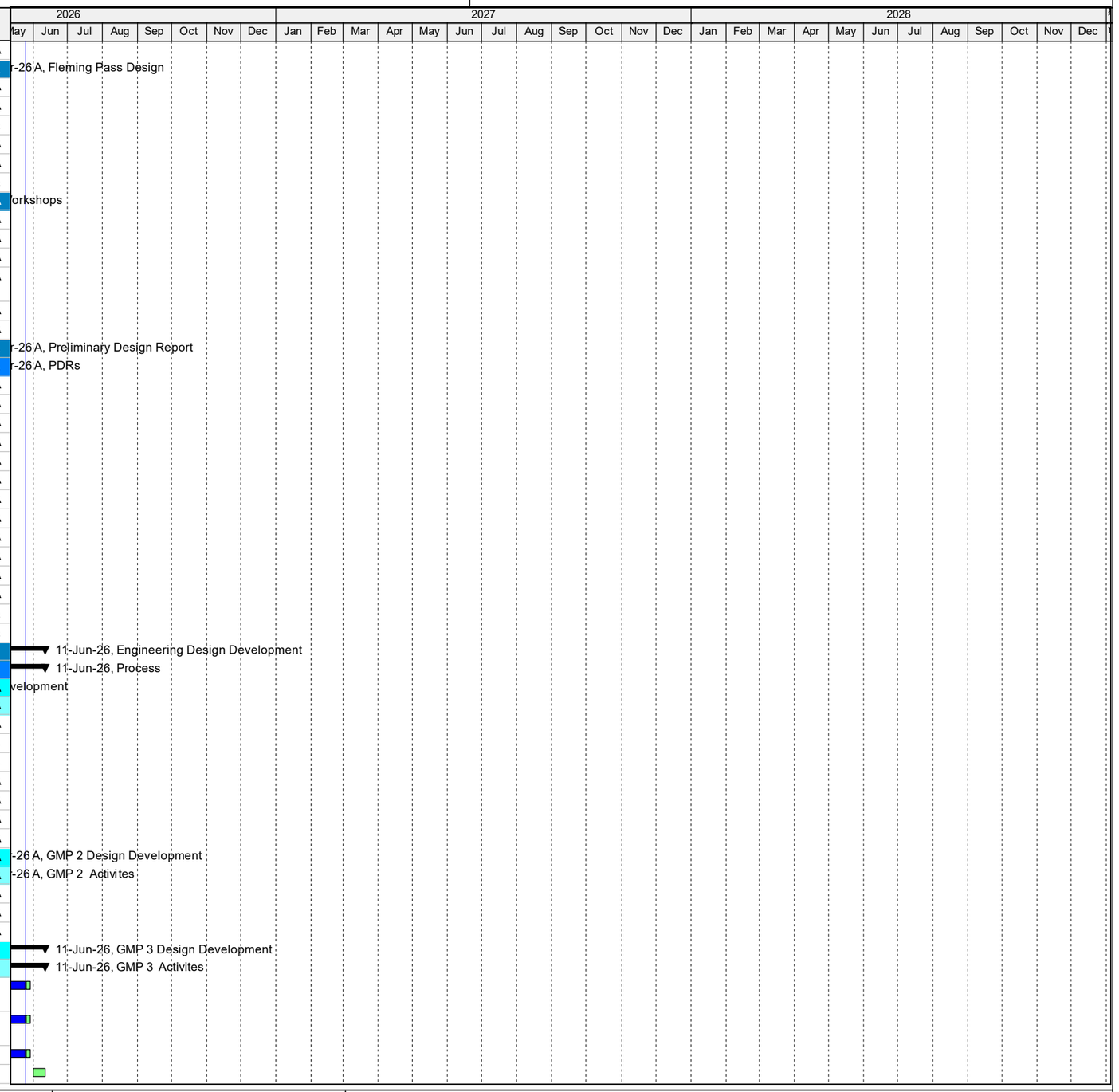
Project Schedule as of 25-May-26

BURNS McDONNELL

Activity ID	Activity Name	Original Duration	Start	Finish
PR-20-1070	Process (GMP 1) Temp. System Design Development to 60%	20	14-Aug-25 A	24-Sep-25 A
Fleming Pass Design		75	03-Dec-25 A	03-Apr-26 A
TR-20-2000	TRN (GMP 1) - Start 30% IFB	10	03-Dec-25 A	31-Dec-25 A
TR-20-2010	TRN (GMP 1) - Internal 30% Submittal	2	17-Dec-25 A	31-Dec-25 A
TR-20-2020	TRN (GMP 1) - External 30% Submittal	8	19-Dec-25 A	06-Jan-26 A
TR-20-2030	TRN (GMP 1) - OTS 30% Sumittal Client Review	12	06-Jan-26 A	05-Mar-26 A
TR-20-2035	TRN (GMP 1) - Design Hold for Drainage Meetings	12	26-Jan-26 A	12-Mar-26 A
TR-20-2040	TRN (GMP 1) - Start 60% IFB	12	13-Mar-26 A	03-Apr-26 A
Alternative Analysis & Technical Workshops		11	14-Jul-25 A	16-Sep-25 A
PR-00-1000	Process Qualitative Review of Biological Treatment Options (up to 4)	5	14-Jul-25 A	01-Aug-25 A
PR-00-1010	Prepare for Options Workshop	5	04-Aug-25 A	08-Aug-25 A
PR-00-1050	Options Workshop	1	13-Aug-25 A	13-Aug-25 A
PR-00-1020	Alternative Evaluation of Selected Biological Treatment Processes (up to 2)	5	14-Aug-25 A	05-Sep-25 A
PR-00-1030	Prepare for Alternatives Workshop	5	08-Sep-25 A	12-Sep-25 A
PR-00-1040	Alternatives Analysis Workshop	1	16-Sep-25 A	16-Sep-25 A
Preliminary Design Report		197	17-Sep-25 A	03-Apr-26 A
PDRs		197	17-Sep-25 A	03-Apr-26 A
AR-00-1000	Architectural (30%)- PDR Development	15	17-Sep-25 A	18-Nov-25 A
CV-00-1000	Civil (30%) - PDR Development	20	17-Sep-25 A	18-Nov-25 A
EL-00-1000	Electrical (30%) - PDR Development	15	17-Sep-25 A	18-Nov-25 A
IC-00-1000	Controls (30%) - PDR Development	15	17-Sep-25 A	18-Nov-25 A
ME-00-1000	Mechanical (30%) - PDR Development	15	17-Sep-25 A	18-Nov-25 A
PR-00-1060	Process (30%) - PDR Development	40	17-Sep-25 A	18-Nov-25 A
DD-00-1000	Design (30%) - PDR Q3 Review (All Disciplines)	5	19-Nov-25 A	26-Nov-25 A
DD-30-1010	Design (30%) - Submit PDR to City (with 30% Design Deliverable)	2	28-Nov-25 A	01-Dec-25 A
DD-03-1080	Design (GMP 2) - Update PDR for 60% Deliverable	20	05-Mar-26 A	20-Mar-26 A
DD-02-1060	Design (GMP 2) - PDR 60% Update - Q3 Review - All Disciplines	5	20-Mar-26 A	26-Mar-26 A
DD-03-1070	Design (GMP 3) - Update PDR for 60% Deliverable	20	23-Mar-26 A	27-Mar-26 A
DD-02-1070	Design (GMP 2) - Submit PDR to City (with 60% Design Deliverable)	1	27-Mar-26 A	31-Mar-26 A
DD-03-1050	Design (GMP 3) - PDR 60% Update - Q3 Review - All Disciplines	5	30-Mar-26 A	02-Apr-26 A
DD-03-1060	Design (GMP 3) - Submit PDR to City (with 60% Design Deliverable)	1	03-Apr-26 A	03-Apr-26 A
Engineering Design Development		221	14-Jul-25 A	11-Jun-26
Process		221	13-Aug-25 A	11-Jun-26
30% Design Development		94	13-Aug-25 A	12-Dec-25 A
30% Activites		94	13-Aug-25 A	12-Dec-25 A
PR-30-1020	Process (30%) - Concept Plan View Layout Drawings	30	13-Aug-25 A	17-Sep-25 A
PR-10-1010	Process (30%) - Develop Site Plan	30	17-Sep-25 A	28-Oct-25 A
PR-10-1020	Process (30%) - Develop P&IDs	20	17-Sep-25 A	31-Oct-25 A
PR-10-1030	Process (30%) - Develop Equipment Schedule/Load List	20	01-Oct-25 A	03-Nov-25 A
PR-20-1050	Process (30%) - Hydraulic Profiles	20	17-Sep-25 A	19-Nov-25 A
PR-30-1000	Process (30%) - Design Drawings and Model Development to 30%	25	07-Oct-25 A	26-Nov-25 A
PR-30-1010	Process (30%) - Conduct Q3 Review	12	26-Nov-25 A	12-Dec-25 A
GMP 2 Design Development		67	15-Dec-25 A	31-Mar-26 A
GMP 2 Activites		67	15-Dec-25 A	31-Mar-26 A
PR-30-1050	Process (GMP 2) - Develop IPS/Aeration/Flex Tanks & Specifications	20	15-Dec-25 A	20-Mar-26 A
PR-30-1080	Process (GMP 2) - Develop Technical Equipment Specifications	25	19-Dec-25 A	20-Mar-26 A
PR-30-1090	Process (GMP 2) - Conduct Q3 Review	5	23-Mar-26 A	31-Mar-26 A
GMP 3 Design Development		128	12-Dec-25 A	11-Jun-26
GMP 3 Activites		128	12-Dec-25 A	11-Jun-26
PR-30-1040	Process (GMP 2) - Mechanical Coordination w/ GAs for Occupied Spaces	5	12-Dec-25 A	29-May-26
PR-30-1110	Process (GMP 3) - Develop Solids Management Design (Solids Bldg+Sludge Holding Tank+Cake Loadout)	40	06-Apr-26 A	29-May-26
PR-30-1130	Process (GMP 3) - Develop Technical Equipment Specifications	20	06-Apr-26 A	29-May-26
PR-30-1150	Process (GMP 3) - Conduct Q3 Review	9	01-Jun-26	11-Jun-26



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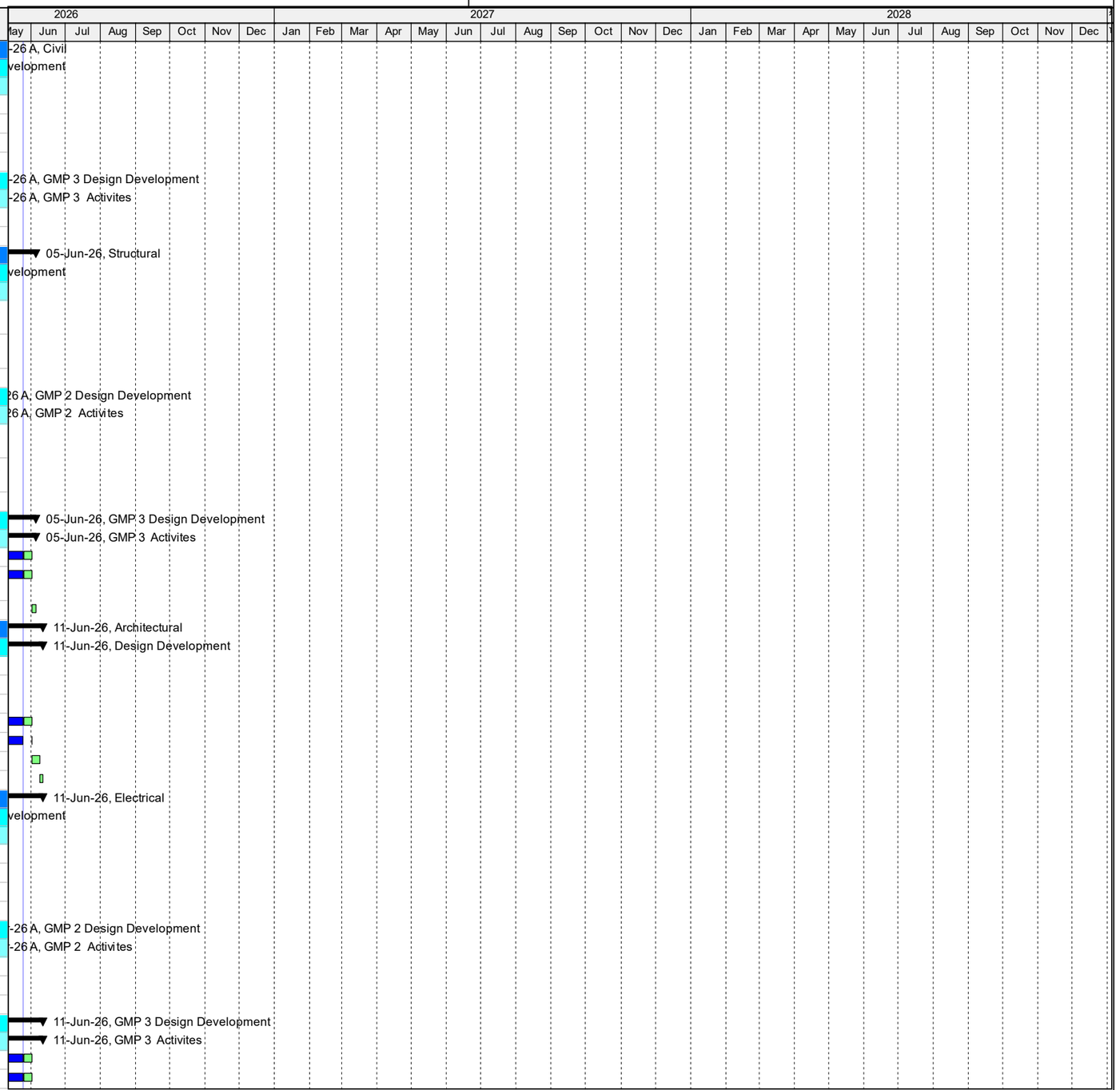
Activity ID	Activity Name	Original Duration	Start	Finish
Civil		165	14-Jul-25 A	01-Apr-26 A
30% Design Development		108	14-Jul-25 A	12-Dec-25 A
30% Activites		108	14-Jul-25 A	12-Dec-25 A
CV-30-1000	Civil (30%) - Develop Outfall Plan and Profile (for permitting)	35	14-Jul-25 A	29-Aug-25 A
CV-30-1010	Civil (30%) - Grading/Sidewalk/Road Design Development to 30%	30	19-Sep-25 A	26-Nov-25 A
CV-30-1020	Civil (30%) - Yard Piping Design Development to 30%	25	15-Oct-25 A	26-Nov-25 A
CV-30-1030	Civil (30%) - Conduct Q3 Review	10	28-Nov-25 A	12-Dec-25 A
GMP 3 Design Development		165	15-Dec-25 A	01-Apr-26 A
GMP 3 Activites		165	15-Dec-25 A	01-Apr-26 A
CV-60-1020	Civil (GMP 3) - Design Development to 60%	20	15-Dec-25 A	31-Mar-26 A
CV-60-1030	Civil (GMP 3) - Conduct Q3 Review	1	01-Apr-26 A	01-Apr-26 A
Structural		215	02-Oct-25 A	05-Jun-26
30% Design Development		92	02-Oct-25 A	12-Dec-25 A
30% Activites		92	02-Oct-25 A	12-Dec-25 A
ST-30-1000	Structural (30%) - Design Drawings and Model Development to 30% (Flex Tank, AreationBasins, Influent Pump Station)	30	02-Oct-25 A	07-Nov-25 A
ST-30-1010	Structural (30%) - Design Drawings and Model Development to 30% (Balance of Plant)	20	28-Oct-25 A	26-Nov-25 A
ST-30-1020	Structural (30%) - Conduct Q3 Review	10	26-Nov-25 A	12-Dec-25 A
GMP 2 Design Development		146	12-Dec-25 A	23-Mar-26 A
GMP 2 Activites		146	12-Dec-25 A	23-Mar-26 A
ST-60-1000	Structural (GMP 2) - Design Drawings and Model Development to 60% (Aeration)	30	15-Dec-25 A	20-Mar-26 A
ST-60-1030	Structural (GMP 2) - Design Drawings and Model Development to 60% (IPS)	30	12-Dec-25 A	20-Mar-26 A
ST-60-1050	Structural (GMP 2) - Conduct Q3 Review	5	23-Mar-26 A	23-Mar-26 A
GMP 3 Design Development		44	06-Apr-26 A	05-Jun-26
GMP 3 Activites		44	06-Apr-26 A	05-Jun-26
CV-60-1010	Civil (GMP 3) - Outfall Design Development to 60%	25	06-Apr-26 A	01-Jun-26
ST-60-1040	Structural (GMP 3) - Design Drawings and Model Development to 60% (Balance of Plant)	43	06-Apr-26 A	01-Jun-26
ST-60-1060	Structural (GMP 3) - Conduct Q3 Review	4	02-Jun-26	05-Jun-26
Architectural		219	21-Oct-25 A	11-Jun-26
Design Development		219	21-Oct-25 A	11-Jun-26
AR-30-1010	Architectural (30%) - Building Programmatic Meeting with City	5	21-Oct-25 A	21-Oct-25 A
AR-30-1000	Architectural (30%) - Develop General Arrangements of Buildings	20	21-Oct-25 A	26-Nov-25 A
AR-30-1040	Architectural (30%) - Conduct Q3 Review	10	26-Nov-25 A	01-Dec-25 A
AR-60-1050	Architectural (GMP 3) - Building Plans and Elevations Drawings	40	12-Dec-25 A	01-Jun-26
AR-60-1060	Architectural (GMP 3) - Doors & Window Schedule	10	08-May-26 A	02-Jun-26
AR-60-1070	Architectural (GMP 3) - Technical Specifications	5	02-Jun-26	08-Jun-26
AR-60-1080	Architectural (GMP 3) - Q3 Review	3	09-Jun-26	11-Jun-26
Electrical		219	10-Oct-25 A	11-Jun-26
30% Design Development		88	10-Oct-25 A	12-Dec-25 A
30% Activites		88	10-Oct-25 A	12-Dec-25 A
EL-30-1010	Electrical (30%) - Develop Site Main Power Routing	15	10-Oct-25 A	13-Nov-25 A
EL-30-1020	Electrical (30%) - Develop One-line Development to 30%	25	10-Oct-25 A	13-Nov-25 A
EL-30-1000	Electrical (30%) - Develop Electrical Room Layouts to 30%	15	20-Oct-25 A	26-Nov-25 A
EL-30-1030	Electrical (30%) - Conduct Q3 Review	5	28-Nov-25 A	12-Dec-25 A
GMP 2 Design Development		68	12-Dec-25 A	31-Mar-26 A
GMP 2 Activites		68	12-Dec-25 A	31-Mar-26 A
EL-60-1000	Electrical (60%) - Develop One-line Development to 60%	30	12-Dec-25 A	20-Mar-26 A
EL-60-1020	Electrical (GMP 2) - Design Drawings and Model Development to 60%	30	12-Dec-25 A	20-Mar-26 A
EL-60-1030	Electrical (GMP 2) - Conduct Q3 Review	5	23-Mar-26 A	31-Mar-26 A
GMP 3 Design Development		115	31-Dec-25 A	11-Jun-26
GMP 3 Activites		115	31-Dec-25 A	11-Jun-26
EL-60-1010	Electrical (GMP 3) - Develop Area Layouts to 60%	10	02-Feb-26 A	01-Jun-26
EL-60-1040	Electrical (GMP 3) - Electrical Equipment Schedule	20	15-Jan-26 A	01-Jun-26



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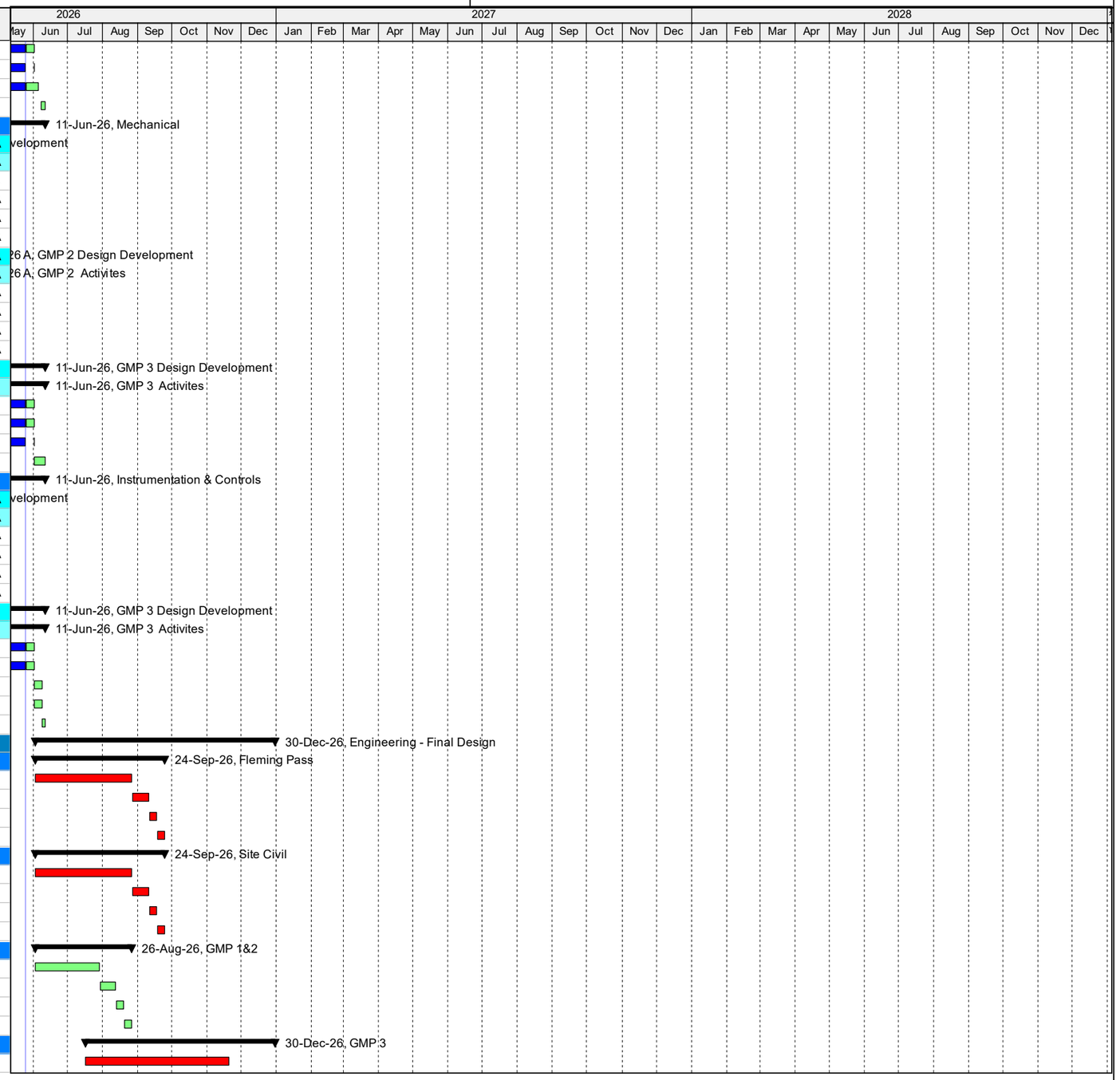
Activity ID	Activity Name	Original Duration	Start	Finish
EL-60-1060	Electrical (GMP 3) - Technical Specifications	40	31-Dec-25 A	01-Jun-26
EL-60-1050	Electrical (GMP 3) - Site Lighting and Security	15	04-May-26 A	02-Jun-26
EL-60-1080	Electrical (GMP 3) - Design Drawings and Model Development to 60%	100	31-Dec-25 A	05-Jun-26
EL-60-1090	Electrical (GMP 3) - Conduct Q3 Review	4	08-Jun-26	11-Jun-26
Mechanical		219	07-Oct-25 A	11-Jun-26
30% Design Development		97	07-Oct-25 A	12-Dec-25 A
30% Activites		97	07-Oct-25 A	12-Dec-25 A
ME-30-1000	Mechanical (GMP 1) - Classification Drawings at 30%	5	07-Oct-25 A	31-Oct-25 A
ME-30-1070	Mechanical (30%) - Mechanical Design Development to 30%	10	23-Oct-25 A	25-Nov-25 A
ME-30-1040	Mechanical (30%) - Preliminary Load Calculations	15	03-Nov-25 A	26-Nov-25 A
ME-30-1080	Mechanical (30%) - Q3 Quality Review	5	28-Nov-25 A	12-Dec-25 A
GMP 2 Design Development		161	12-Dec-25 A	23-Mar-26 A
GMP 2 Activites		161	12-Dec-25 A	23-Mar-26 A
ME-30-1050	Mechanical (60%) - HVAC Load List	25	12-Dec-25 A	13-Mar-26 A
ME-60-1000	Mechanical (GMP 2) - Utility Size/Location Stub-Outs from Buildings	18	12-Dec-25 A	13-Mar-26 A
ME-60-1010	Mechanical (GMP 2) - 60% Load List for Electrical	15	12-Dec-25 A	13-Mar-26 A
ME-60-1030	Mechanical (GMP 2) - Conduct Q3 Review	5	23-Mar-26 A	23-Mar-26 A
GMP 3 Design Development		48	06-Apr-26 A	11-Jun-26
GMP 3 Activites		48	06-Apr-26 A	11-Jun-26
ME-60-1060	Mechanical (GMP 3) - Finalize Ventilation & Heathing Req.	21	06-Apr-26 A	01-Jun-26
ME-60-1070	Mechanical (GMP 3) - Area Layouts (From Arch/Structural/Process)	1	06-Apr-26 A	01-Jun-26
ME-60-1040	Mechanical (GMP 3) Mechanical Design Development to 60%	30	07-Apr-26 A	02-Jun-26
ME-60-1050	Mechanical (GMP 3) - Conduct Q3 Review	8	02-Jun-26	11-Jun-26
Instrumentation & Controls		219	03-Nov-25 A	11-Jun-26
30% Design Development		93	03-Nov-25 A	12-Dec-25 A
30% Activites		93	03-Nov-25 A	12-Dec-25 A
IC-30-1000	Controls (30%) - Preliminary P&IDs (I&C)	50	03-Nov-25 A	26-Nov-25 A
IC-30-1010	Controls (30%) - Preliminary Instrument List	50	03-Nov-25 A	26-Nov-25 A
IC-30-1020	Controls (30%) - Preliminary I/O List	50	03-Nov-25 A	26-Nov-25 A
IC-30-1030	Controls (30%) - Q3 Quality Review	10	28-Nov-25 A	12-Dec-25 A
GMP 3 Design Development		126	12-Dec-25 A	11-Jun-26
GMP 3 Activites		126	12-Dec-25 A	11-Jun-26
IC-60-1020	Controls (GMP 3) - Develop Instrument Plans to 50%	50	12-Dec-25 A	01-Jun-26
IC-60-1040	Controls (GMP 3) - Develop Instrument List to 50%	50	12-Dec-25 A	01-Jun-26
IC-60-1010	Controls (GMP 3) - Develop I/O List to 60%	5	02-Jun-26	08-Jun-26
IC-60-1030	Controls (GMP 3) - Develop P&IDs (I&C) to 60%	5	02-Jun-26	08-Jun-26
IC-60-1050	Controls (GMP 3) - Conduct Q3 Review	3	09-Jun-26	11-Jun-26
Engineering - Final Design		146	03-Jun-26	30-Dec-26
Fleming Pass		80	03-Jun-26	24-Sep-26
DD-02-1030	Fleming Pass Design to IFC	60	03-Jun-26	26-Aug-26
DD-02-1032	City Review & Comment - Fleming Pass IFC	10	27-Aug-26	10-Sep-26
DD-02-1034	Incorporate City Comments	5	11-Sep-26	17-Sep-26
DD-02-1036	Issue Fleming Pass IFC Set	5	18-Sep-26	24-Sep-26
Site Civil		80	03-Jun-26	24-Sep-26
DD-02-1040	Site Civil Design to IFC	60	03-Jun-26	26-Aug-26
DD-02-1042	City Review & Comment - Site Civil IFC	10	27-Aug-26	10-Sep-26
DD-02-1044	Incorporate City Comments	5	11-Sep-26	17-Sep-26
DD-02-1046	Issue Site Civil IFC Set	5	18-Sep-26	24-Sep-26
GMP 1&2		60	03-Jun-26	26-Aug-26
DD-02-1051	GMP 1&2 Design to IFC (Process, Structural, Elect, Mech)	40	03-Jun-26	29-Jul-26
DD-02-1052	City Review & Comment - GMP 1&2 IFC	10	30-Jul-26	12-Aug-26
DD-02-1054	Incorporate City Comments	5	13-Aug-26	19-Aug-26
DD-02-1056	Issue GMP 1&2 IFC Set	5	20-Aug-26	26-Aug-26
GMP 3		115	17-Jul-26	30-Dec-26
DD-03-1061	GMP 3 Design to IFC	90	17-Jul-26	20-Nov-26



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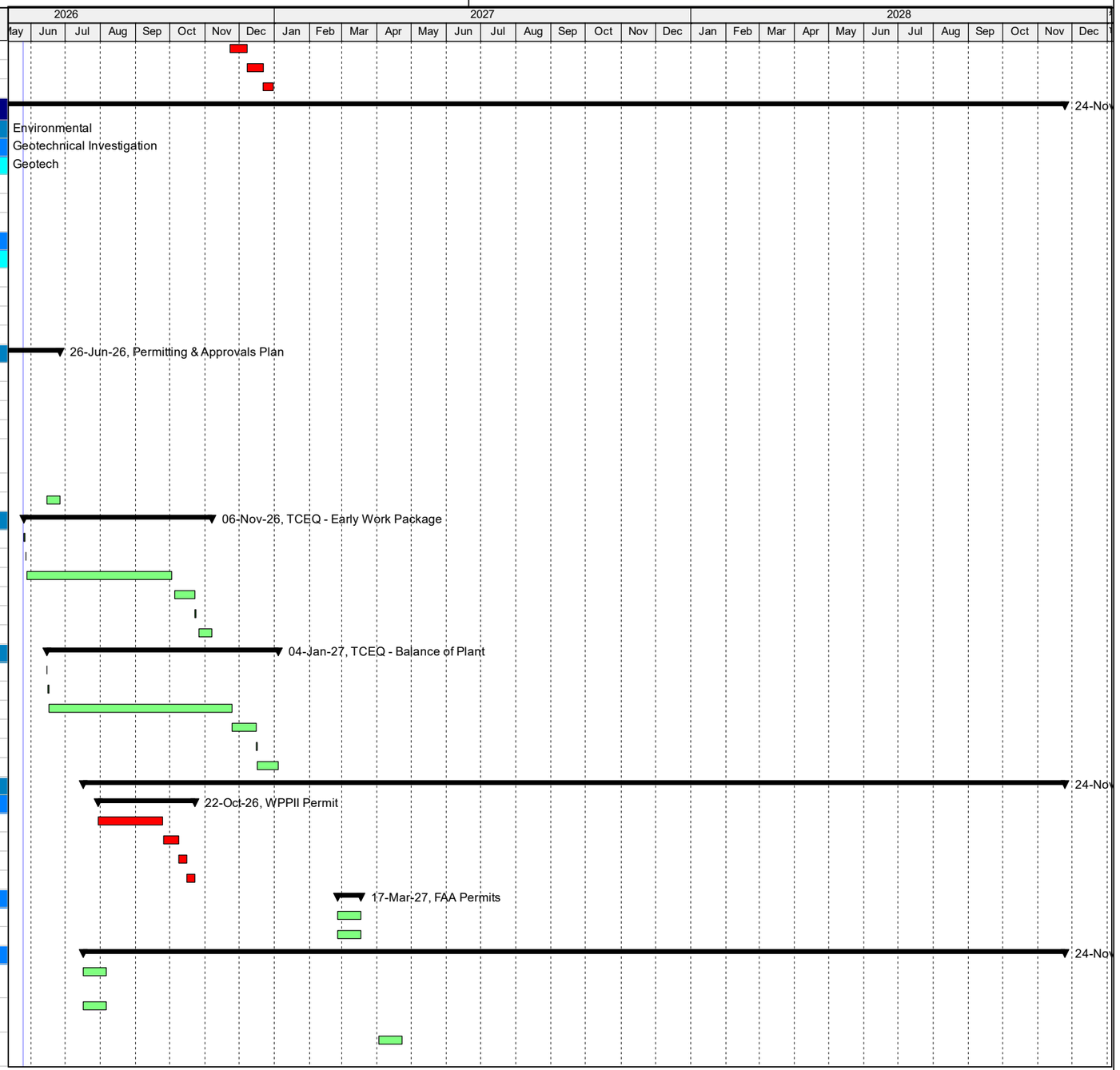
Activity ID	Activity Name	Original Duration	Start	Finish
DD-03-1062	City Review & Comment - GMP 3 IFC	10	23-Nov-26	07-Dec-26
DD-03-1064	Incorporate City Comments	10	08-Dec-26	21-Dec-26
DD-03-1066	Issue GMP 3 IFC Set	5	22-Dec-26	30-Dec-26
Permitting		843	01-Aug-25 A	24-Nov-28
Environmental		40	01-Aug-25 A	04-Mar-26 A
Geotechnical Investigation		40	01-Aug-25 A	04-Mar-26 A
Geotech		40	01-Aug-25 A	04-Mar-26 A
PM-00-1510	Geotech - Prepare Geotech Contract & Issue NTP	10	01-Aug-25 A	23-Sep-25 A
PM-00-1520	Geotech - Conduct Field Work (Boring)	15	15-Sep-25 A	20-Oct-25 A
PM-00-1530	Geotech - Prepare & Submit Boring Report	10	21-Oct-25 A	04-Mar-26 A
Site Survey		25	01-Aug-25 A	03-Nov-25 A
Survey		25	01-Aug-25 A	03-Nov-25 A
PM-00-1620	Survey - Prepare Survey Contract & Issue NTP	15	01-Aug-25 A	23-Sep-25 A
PM-00-1540	Survey - TOPO Survey Field Work	10	13-Oct-25 A	27-Oct-25 A
PM-00-1550	Survey - TOPO Survey Processing	15	27-Oct-25 A	31-Oct-25 A
PM-00-1560	Survey - Receive Final TOPO Survey	1	03-Nov-25 A	03-Nov-25 A
Permitting & Approvals Plan		230	01-Aug-25 A	26-Jun-26
EN-00-1000	Permitting - Develop Draft Permitting & Approvals Plan	30	01-Aug-25 A	04-Aug-25 A
EN-00-1010	Permitting - Submit Draft Permitting & Approvals Plan	14	04-Aug-25 A	15-Aug-25 A
EN-00-1020	Permitting - Owner Review Permitting & Approvals Plan	14	18-Aug-25 A	29-Aug-25 A
EN-01-1070	Permitting (GMP 1) - Create Permit Responsibility GMP 1 Exhibit	10	28-Aug-25 A	11-Sep-25 A
EN-30-1050	Permitting (30%) - Update Permitting & Approvals Plan - 30% Design Deliverable	75	30-Sep-25 A	16-Feb-26 A
EN-02-1080	Permitting (GMP 2) - Create Permit Responsibility GMP 2 Exhibit	10	16-Mar-26 A	17-Apr-26 A
EN-03-1090	Permitting (GMP 3) - Create Permit Responsibility GMP 3 Exhibit	10	15-Jun-26	26-Jun-26
TCEQ - Early Work Package		117	26-May-26	06-Nov-26
EN-02-2070	TCEQ (GMP 2) - Early Works Package Plan Review Meeting	1	26-May-26	26-May-26
EN-02-2080	TCEQ (GMP 2) - Submit Early Works Package Documents to TCEQ	1	27-May-26	27-May-26
EN-02-2090	TCEQ (GMP 2) - Early Works Package Documents	90	28-May-26	02-Oct-26
EN-02-2100	TCEQ (GMP 2) - Incorporate TCEQ Early Works Package Comments	14	05-Oct-26	22-Oct-26
EN-02-2110	TCEQ (GMP 2) - Submit Final Early Works Package to TCEQ	1	23-Oct-26	23-Oct-26
EN-02-2120	TCEQ (GMP 2) - Review and Approve Early Works Package Documents	10	26-Oct-26	06-Nov-26
TCEQ - Balance of Plant		140	15-Jun-26	04-Jan-27
EN-03-2130	TCEQ (GMP 3) - Balance of Plant Plan Review Meeting	1	15-Jun-26	15-Jun-26
EN-03-2140	TCEQ (GMP 3) - Submit Balance of Plant Documents to TCEQ	1	16-Jun-26	16-Jun-26
EN-03-2150	TCEQ (GMP 3) - Balance of Plant Documents	113	17-Jun-26	24-Nov-26
EN-03-2160	TCEQ (GMP 3) - Incorporate TCEQ Balance of Plant Comments	14	24-Nov-26	15-Dec-26
EN-03-2170	TCEQ (GMP 3) - Submit Final Balance of Plant to TCEQ	1	15-Dec-26	16-Dec-26
EN-03-2180	TCEQ (GMP 3) - Review and Approve Balance of Plant Documents	10	16-Dec-26	04-Jan-27
Phase 2 Permits		600	17-Jul-26	24-Nov-28
WPPII Permit		60	30-Jul-26	22-Oct-26
EN-03-1000	Develop WPPII Permit	40	30-Jul-26	24-Sep-26
EN-03-1010	City Review WPPII Permit	10	25-Sep-26	08-Oct-26
EN-03-1020	Address WPPII Permit Comments	5	09-Oct-26	15-Oct-26
EN-03-1030	City Review & Issue WPPII Permit (Resubmittal)	5	16-Oct-26	22-Oct-26
FAA Permits		15	25-Feb-27	17-Mar-27
EN-03-1040	Develop and Submit FAA Form 7460-1	15	25-Feb-27	17-Mar-27
EN-03-1050	Develop and Submit FAA Form 7460-2	15	25-Feb-27	17-Mar-27
SWPPP/SPCC		600	17-Jul-26	24-Nov-28
EN-03-1060	Develop & Submit Construction Spill Prevention Control and Countermeasure (SPCC)	15	17-Jul-26	06-Aug-26
EN-03-1070	Develop & Submit TPDES Gen Constr Permit No. TXR150000 - NOI (SWPPP)	15	17-Jul-26	06-Aug-26
EN-03-1091	Develop & Submit Hydrostatic Test Water Discharges (Gen Permit TXG670000)	15	02-Apr-27	22-Apr-27



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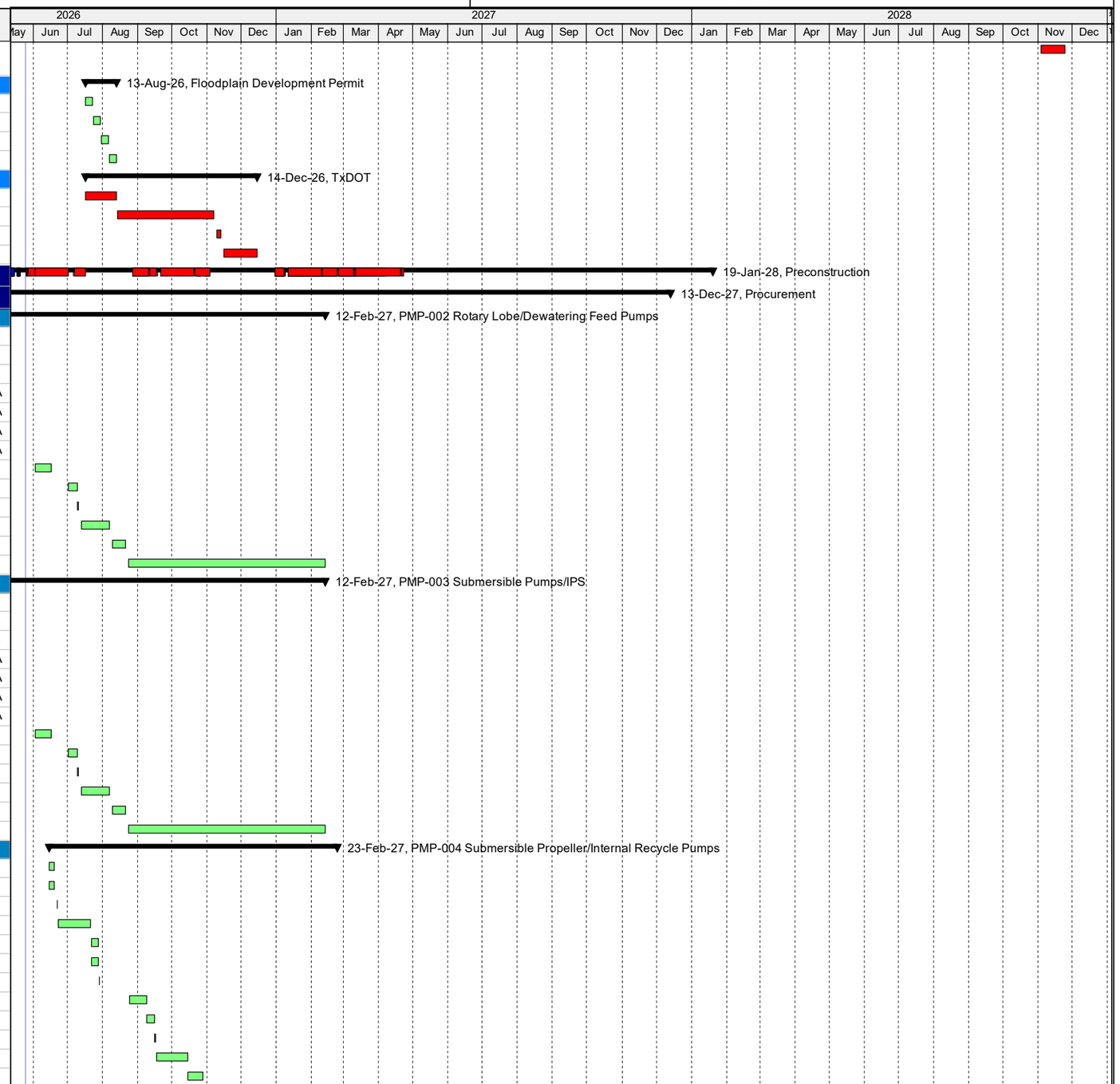
Activity ID	Activity Name	Original Duration	Start	Finish
EN-03-1080	Develop & Submit TPDES Gen Constr Permit No. TXR150000 - NOT (SWPPP)	15	03-Nov-28	24-Nov-28
Floodplain Development Permit		20	17-Jul-26	13-Aug-26
EN-03-2000	Develop & Submit Floodplain Development Permit	5	17-Jul-26	23-Jul-26
EN-03-2010	County/City Review Floodplain Development Permit	5	24-Jul-26	30-Jul-26
EN-03-2020	Address Floodplain Development Permit Comments	5	31-Jul-26	06-Aug-26
EN-03-2030	County/City Review & Issue Floodplain Development Permit	5	07-Aug-26	13-Aug-26
TxDOT		105	17-Jul-26	14-Dec-26
TN-02-1000	Develop & Submit Permit to Construct Access Driveway Access	20	17-Jul-26	13-Aug-26
TN-02-1010	TxDOT Review Permit to Construct Access Driveway	60	14-Aug-26	06-Nov-26
TN-02-1020	Address TxDOT Comments	5	09-Nov-26	13-Nov-26
TN-02-1030	TxDOT Review & Approve Permit to Construct Access Driveway	20	16-Nov-26	14-Dec-26
Preconstruction		625	13-Aug-25 A	19-Jan-28
Procurement		430	06-Apr-26 A	13-Dec-27
PMP-002 Rotary Lobe/Dewatering Feed Pumps		218	06-Apr-26 A	12-Feb-27
PO-1100	PMP-002 - Develop Technical Docs	5	06-Apr-26 A	10-Apr-26 A
PO-1105	PMP-002 - Develop Commercial Docs	5	06-Apr-26 A	10-Apr-26 A
PO-1110	PMP-002 - Conduct Q5 Review and Finalize	1	13-Apr-26 A	13-Apr-26 A
PO-1115	PMP-002 - Issue for Bid (+Bid Period)	17	14-Apr-26 A	06-May-26 A
PO-1120	PMP-002 - Technical Review	2	07-May-26 A	08-May-26 A
PO-1125	PMP-002 - Commercial Review	2	07-May-26 A	08-May-26 A
PO-1130	PMP-002 - Recommendation	1	11-May-26 A	11-May-26 A
PO-1135	PMP-002 - Final Negotiation	10	03-Jun-26	16-Jun-26
PO-1140	PMP-002 - Award & Execute	5	02-Jul-26	09-Jul-26
PO-1141	PMP-002 - NTP	1	10-Jul-26	10-Jul-26
PO-1145	PMP-002 - Vendor Develop and Submit Technical Submittals	20	13-Jul-26	07-Aug-26
PO-1150	PMP-002 - Submittal Review	10	10-Aug-26	21-Aug-26
PO-1155	PMP-002 - Fabricate and Deliver	120	24-Aug-26	12-Feb-27
PMP-003 Submersible Pumps/IPS		218	06-Apr-26 A	12-Feb-27
PO-1200	PMP-003 - Develop Technical Docs	5	06-Apr-26 A	10-Apr-26 A
PO-1205	PMP-003 - Develop Commercial Docs	5	06-Apr-26 A	10-Apr-26 A
PO-1210	PMP-003 - Conduct Q5 Review and Finalize	1	13-Apr-26 A	13-Apr-26 A
PO-1215	PMP-003 - Issue for Bid (+Bid Period)	17	14-Apr-26 A	06-May-26 A
PO-1220	PMP-003 - Technical Review	2	07-May-26 A	08-May-26 A
PO-1225	PMP-003 - Commercial Review	2	07-May-26 A	08-May-26 A
PO-1230	PMP-003 - Recommendation	1	11-May-26 A	11-May-26 A
PO-1235	PMP-003 - Final Negotiation	10	03-Jun-26	16-Jun-26
PO-1240	PMP-003 - Award & Execute	5	02-Jul-26	09-Jul-26
PO-1241	PMP-003 - NTP	1	10-Jul-26	10-Jul-26
PO-1245	PMP-003 - Vendor Develop and Submit Technical Submittals	20	13-Jul-26	07-Aug-26
PO-1250	PMP-003 - Submittal Review	10	10-Aug-26	21-Aug-26
PO-1255	PMP-003 - Fabricate and Deliver	120	24-Aug-26	12-Feb-27
PMP-004 Submersible Propeller/Internal Recycle Pumps		176	15-Jun-26	23-Feb-27
PO-1300	PMP-004 - Develop Technical Docs	5	15-Jun-26	19-Jun-26
PO-1305	PMP-004 - Develop Commercial Docs	5	15-Jun-26	19-Jun-26
PO-1310	PMP-004 - Conduct Q5 Review and Finalize	1	22-Jun-26	22-Jun-26
PO-1315	PMP-004 - Issue for Bid (+Bid Period)	20	23-Jun-26	21-Jul-26
PO-1320	PMP-004 - Technical Review	5	22-Jul-26	28-Jul-26
PO-1325	PMP-004 - Commercial Review	5	22-Jul-26	28-Jul-26
PO-1330	PMP-004 - Recommendation	1	29-Jul-26	29-Jul-26
PO-1335	PMP-004 - Final Negotiation	10	25-Aug-26	08-Sep-26
PO-1340	PMP-004 - Award & Execute	5	09-Sep-26	15-Sep-26
PO-1341	PMP-004 - NTP	1	16-Sep-26	16-Sep-26
PO-1345	PMP-004 - Vendor Develop and Submit Technical Submittals	20	17-Sep-26	14-Oct-26
PO-1350	PMP-004 - Submittal Review	10	15-Oct-26	28-Oct-26



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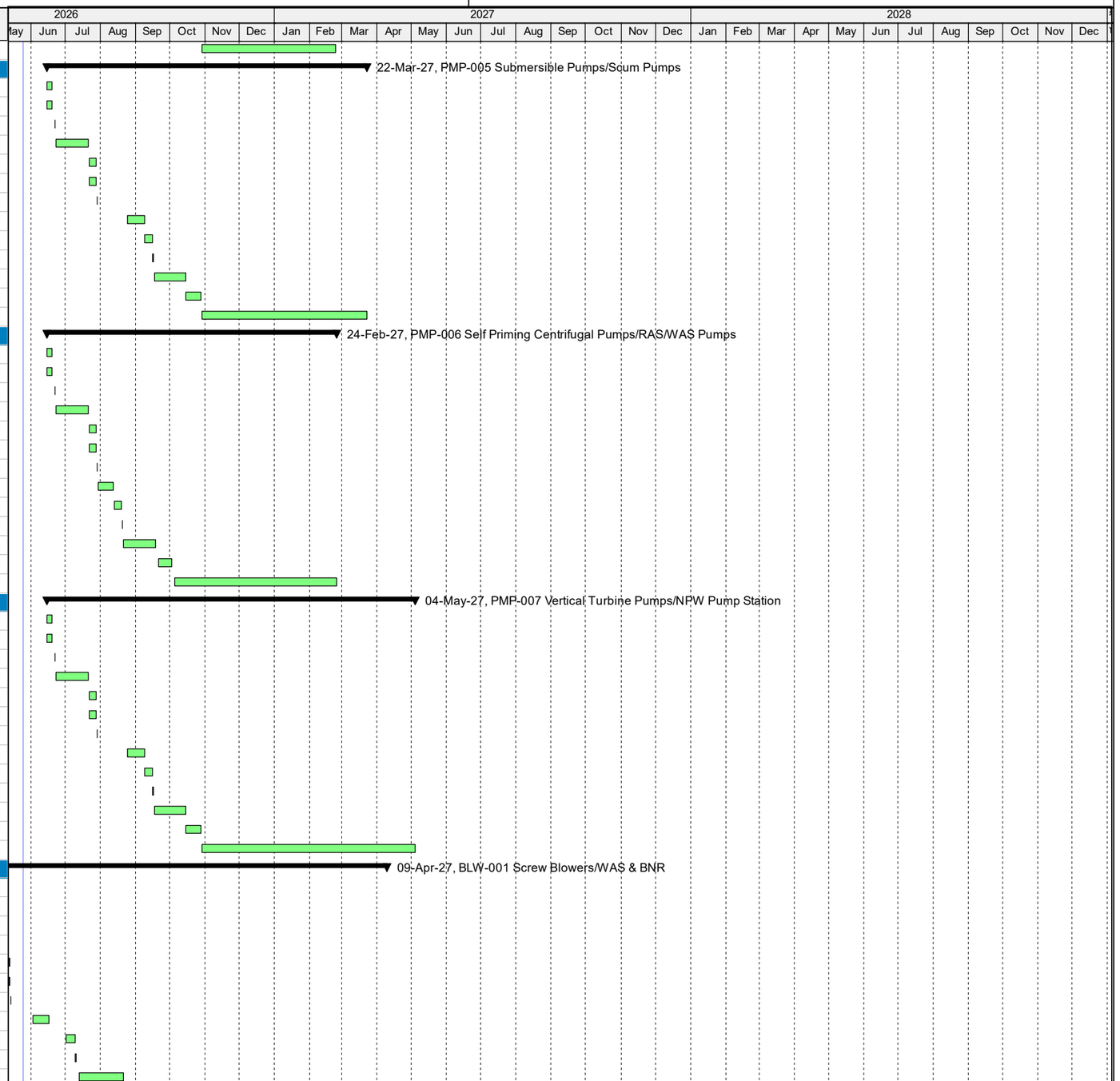
Activity ID	Activity Name	Original Duration	Start	Finish
PO-1355	PMP-004 - Fabricate and Deliver	80	29-Oct-26	23-Feb-27
PMP-005 Submersible Pumps/Scum Pumps		195	15-Jun-26	22-Mar-27
PO-1400	PMP-005 - Develop Technical Docs	5	15-Jun-26	19-Jun-26
PO-1405	PMP-005 - Develop Commercial Docs	5	15-Jun-26	19-Jun-26
PO-1410	PMP-005 - Conduct Q5 Review and Finalize	1	22-Jun-26	22-Jun-26
PO-1415	PMP-005 - Issue for Bid (+Bid Period)	20	23-Jun-26	21-Jul-26
PO-1420	PMP-005 - Technical Review	5	22-Jul-26	28-Jul-26
PO-1425	PMP-005 - Commercial Review	5	22-Jul-26	28-Jul-26
PO-1430	PMP-005 - Recommendation	1	29-Jul-26	29-Jul-26
PO-1435	PMP-005 - Final Negotiation	10	25-Aug-26	08-Sep-26
PO-1440	PMP-005 - Award & Execute	5	09-Sep-26	15-Sep-26
PO-1441	PMP-005 - NTP	1	16-Sep-26	16-Sep-26
PO-1445	PMP-005 - Vendor Develop and Submit Technical Submittals	20	17-Sep-26	14-Oct-26
PO-1450	PMP-005 - Submittal Review	10	15-Oct-26	28-Oct-26
PO-1455	PMP-005 - Fabricate and Deliver	99	29-Oct-26	22-Mar-27
PMP-006 Self Priming Centrifugal Pumps/RAS/WAS Pumps		177	15-Jun-26	24-Feb-27
PO-1500	PMP-006 - Develop Technical Docs	5	15-Jun-26	19-Jun-26
PO-1505	PMP-006 - Develop Commercial Docs	5	15-Jun-26	19-Jun-26
PO-1510	PMP-006 - Conduct Q5 Review and Finalize	1	22-Jun-26	22-Jun-26
PO-1515	PMP-006 - Issue for Bid (+Bid Period)	20	23-Jun-26	21-Jul-26
PO-1520	PMP-006 - Technical Review	5	22-Jul-26	28-Jul-26
PO-1525	PMP-006 - Commercial Review	5	22-Jul-26	28-Jul-26
PO-1530	PMP-006 - Recommendation	1	29-Jul-26	29-Jul-26
PO-1535	PMP-006 - Final Negotiation	10	30-Jul-26	12-Aug-26
PO-1540	PMP-006 - Award & Execute	5	13-Aug-26	19-Aug-26
PO-1541	PMP-006 - NTP	1	20-Aug-26	20-Aug-26
PO-1545	PMP-006 - Vendor Develop and Submit Technical Submittals	20	21-Aug-26	18-Sep-26
PO-1550	PMP-006 - Submittal Review	10	21-Sep-26	02-Oct-26
PO-1555	PMP-006 - Fabricate and Deliver	99	05-Oct-26	24-Feb-27
PMP-007 Vertical Turbine Pumps/NPW Pump Station		226	15-Jun-26	04-May-27
PO-1600	PMP-007 - Develop Technical Docs	5	15-Jun-26	19-Jun-26
PO-1605	PMP-007 - Develop Commercial Docs	5	15-Jun-26	19-Jun-26
PO-1610	PMP-007 - Conduct Q5 Review and Finalize	1	22-Jun-26	22-Jun-26
PO-1615	PMP-007 - Issue for Bid (+Bid Period)	20	23-Jun-26	21-Jul-26
PO-1620	PMP-007 - Technical Review	5	22-Jul-26	28-Jul-26
PO-1625	PMP-007 - Commercial Review	5	22-Jul-26	28-Jul-26
PO-1630	PMP-007 - Recommendation	1	29-Jul-26	29-Jul-26
PO-1635	PMP-007 - Final Negotiation	10	25-Aug-26	08-Sep-26
PO-1640	PMP-007 - Award & Execute	5	09-Sep-26	15-Sep-26
PO-1641	PMP-007 - NTP	1	16-Sep-26	16-Sep-26
PO-1645	PMP-007 - Vendor Develop and Submit Technical Submittals	20	17-Sep-26	14-Oct-26
PO-1650	PMP-007 - Submittal Review	10	15-Oct-26	28-Oct-26
PO-1655	PMP-007 - Fabricate and Deliver	130	29-Oct-26	04-May-27
BLW-001 Screw Blowers/WAS & BNR		258	06-Apr-26 A	09-Apr-27
PO-1700	BLW-001 - Develop Technical Docs	5	06-Apr-26 A	10-Apr-26 A
PO-1705	BLW-001 - Develop Commercial Docs	5	06-Apr-26 A	10-Apr-26 A
PO-1710	BLW-001 - Conduct Q5 Review and Finalize	1	13-Apr-26 A	13-Apr-26 A
PO-1715	BLW-001 - Issue for Bid (+Bid Period)	20	14-Apr-26 A	11-May-26 A
PO-1720	BLW-001 - Technical Review	2	12-May-26 A	13-May-26 A
PO-1725	BLW-001 - Commercial Review	2	12-May-26 A	13-May-26 A
PO-1730	BLW-001 - Recommendation	1	14-May-26 A	14-May-26 A
PO-1735	BLW-001 - Final Negotiation	10	03-Jun-26	16-Jun-26
PO-1740	BLW-001 - Award & Execute	5	02-Jul-26	09-Jul-26
PO-1741	BLW-001 - NTP	1	10-Jul-26	10-Jul-26
PO-1745	BLW-001 - Vendor Develop and Submit Technical Submittals	30	13-Jul-26	21-Aug-26



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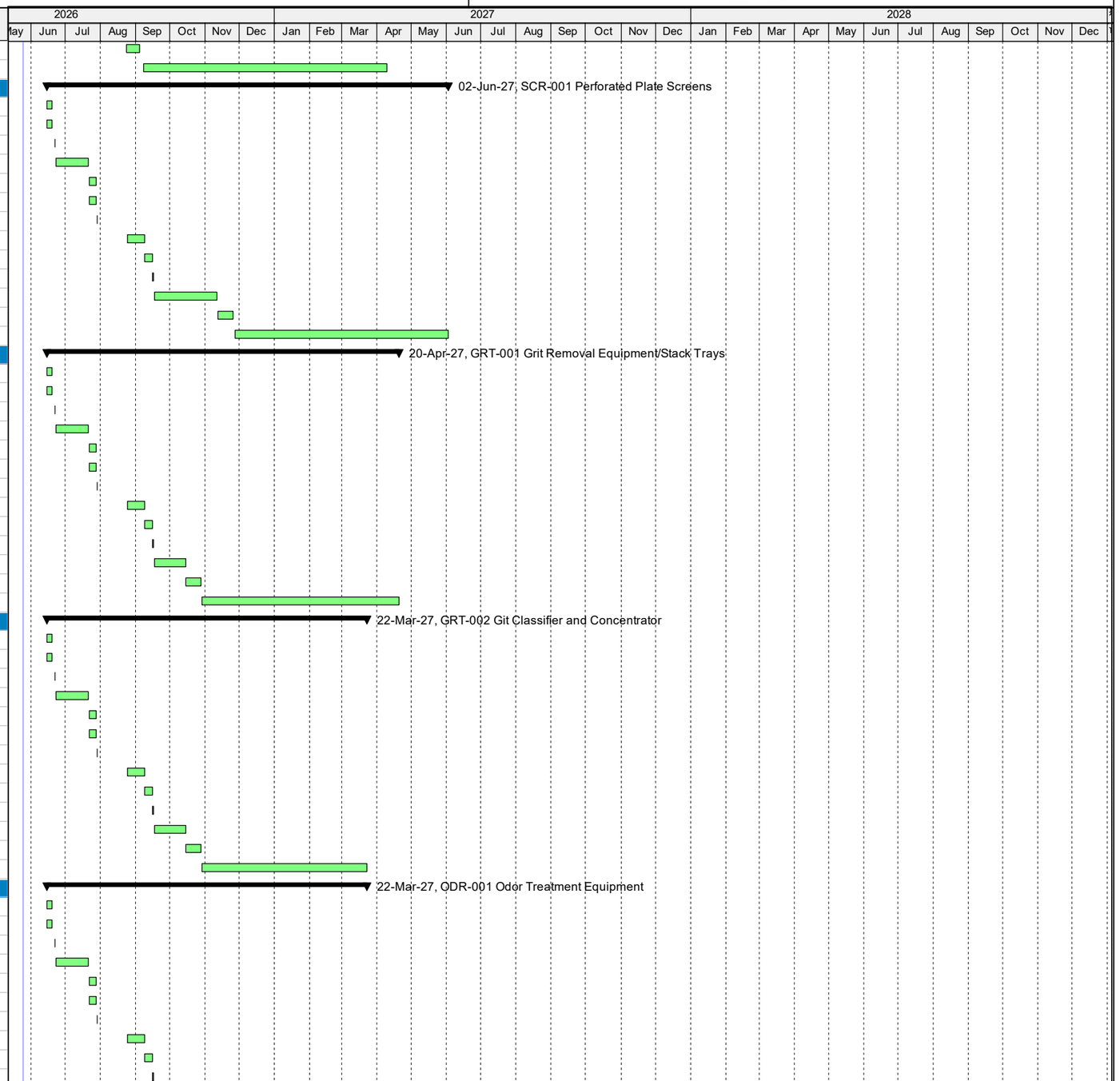
Activity ID	Activity Name	Original Duration	Start	Finish
PO-1750	BLW-001 - Submittal Review	10	24-Aug-26	04-Sep-26
PO-1755	BLW-001 - Fabricate and Deliver	150	08-Sep-26	09-Apr-27
SCR-001 Perforated Plate Screens		246	15-Jun-26	02-Jun-27
PO-1800	SCR-001 - Develop Technical Docs	5	15-Jun-26	19-Jun-26
PO-1805	SCR-001 - Develop Commercial Docs	5	15-Jun-26	19-Jun-26
PO-1810	SCR-001 - Conduct Q5 Review and Finalize	1	22-Jun-26	22-Jun-26
PO-1815	SCR-001 - Issue for Bid (+Bid Period)	20	23-Jun-26	21-Jul-26
PO-1820	SCR-001 - Technical Review	5	22-Jul-26	28-Jul-26
PO-1825	SCR-001 - Commercial Review	5	22-Jul-26	28-Jul-26
PO-1830	SCR-001 - Recommendation	1	29-Jul-26	29-Jul-26
PO-1835	SCR-001 - Final Negotiation	10	25-Aug-26	08-Sep-26
PO-1840	SCR-001 - Award & Execute	5	09-Sep-26	15-Sep-26
PO-1841	SCR-001 - NTP	1	16-Sep-26	16-Sep-26
PO-1845	SCR-001 - Vendor Develop and Submit Technical Submittals	40	17-Sep-26	11-Nov-26
PO-1850	SCR-001 - Submittal Review	10	12-Nov-26	25-Nov-26
PO-1855	SCR-001 - Fabricate and Deliver	130	27-Nov-26	02-Jun-27
GRT-001 Grit Removal Equipment/Stack Trays		216	15-Jun-26	20-Apr-27
PO-1900	GRT-001 - Develop Technical Docs	5	15-Jun-26	19-Jun-26
PO-1905	GRT-001 - Develop Commercial Docs	5	15-Jun-26	19-Jun-26
PO-1910	GRT-001 - Conduct Q5 Review and Finalize	1	22-Jun-26	22-Jun-26
PO-1915	GRT-001 - Issue for Bid (+Bid Period)	20	23-Jun-26	21-Jul-26
PO-1920	GRT-001 - Technical Review	5	22-Jul-26	28-Jul-26
PO-1925	GRT-001 - Commercial Review	5	22-Jul-26	28-Jul-26
PO-1930	GRT-001 - Recommendation	1	29-Jul-26	29-Jul-26
PO-1935	GRT-001 - Final Negotiation	10	25-Aug-26	08-Sep-26
PO-1940	GRT-001 - Award & Execute	5	09-Sep-26	15-Sep-26
PO-1941	GRT-001 - NTP	1	16-Sep-26	16-Sep-26
PO-1945	GRT-001 - Vendor Develop and Submit Technical Submittals	20	17-Sep-26	14-Oct-26
PO-1950	GRT-001 - Submittal Review	10	15-Oct-26	28-Oct-26
PO-1955	GRT-001 - Fabricate and Deliver	120	29-Oct-26	20-Apr-27
GRT-002 Git Classifier and Concentrator		195	15-Jun-26	22-Mar-27
PO-2000	GRT-002 - Develop Technical Docs	5	15-Jun-26	19-Jun-26
PO-2005	GRT-002 - Develop Commercial Docs	5	15-Jun-26	19-Jun-26
PO-2010	GRT-002 - Conduct Q5 Review and Finalize	1	22-Jun-26	22-Jun-26
PO-2015	GRT-002 - Issue for Bid (+Bid Period)	20	23-Jun-26	21-Jul-26
PO-2020	GRT-002 - Technical Review	5	22-Jul-26	28-Jul-26
PO-2025	GRT-002 - Commercial Review	5	22-Jul-26	28-Jul-26
PO-2030	GRT-002 - Recommendation	1	29-Jul-26	29-Jul-26
PO-2035	GRT-002 - Final Negotiation	10	25-Aug-26	08-Sep-26
PO-2040	GRT-002 - Award & Execute	5	09-Sep-26	15-Sep-26
PO-2041	GRT-002 - NTP	1	16-Sep-26	16-Sep-26
PO-2045	GRT-002 - Vendor Develop and Submit Technical Submittals	20	17-Sep-26	14-Oct-26
PO-2050	GRT-002 - Submittal Review	10	15-Oct-26	28-Oct-26
PO-2055	GRT-002 - Fabricate and Deliver	99	29-Oct-26	22-Mar-27
ODR-001 Odor Treatment Equipment		195	15-Jun-26	22-Mar-27
PO-2100	ODR-001 - Develop Technical Docs	5	15-Jun-26	19-Jun-26
PO-2105	ODR-001 - Develop Commercial Docs	5	15-Jun-26	19-Jun-26
PO-2110	ODR-001 - Conduct Q5 Review and Finalize	1	22-Jun-26	22-Jun-26
PO-2115	ODR-001 - Issue for Bid (+Bid Period)	20	23-Jun-26	21-Jul-26
PO-2120	ODR-001 - Technical Review	5	22-Jul-26	28-Jul-26
PO-2125	ODR-001 - Commercial Review	5	22-Jul-26	28-Jul-26
PO-2130	ODR-001 - Recommendation	1	29-Jul-26	29-Jul-26
PO-2135	ODR-001 - Final Negotiation	10	25-Aug-26	08-Sep-26
PO-2140	ODR-001 - Award & Execute	5	09-Sep-26	15-Sep-26
PO-2141	ODR-001 - NTP	1	16-Sep-26	16-Sep-26



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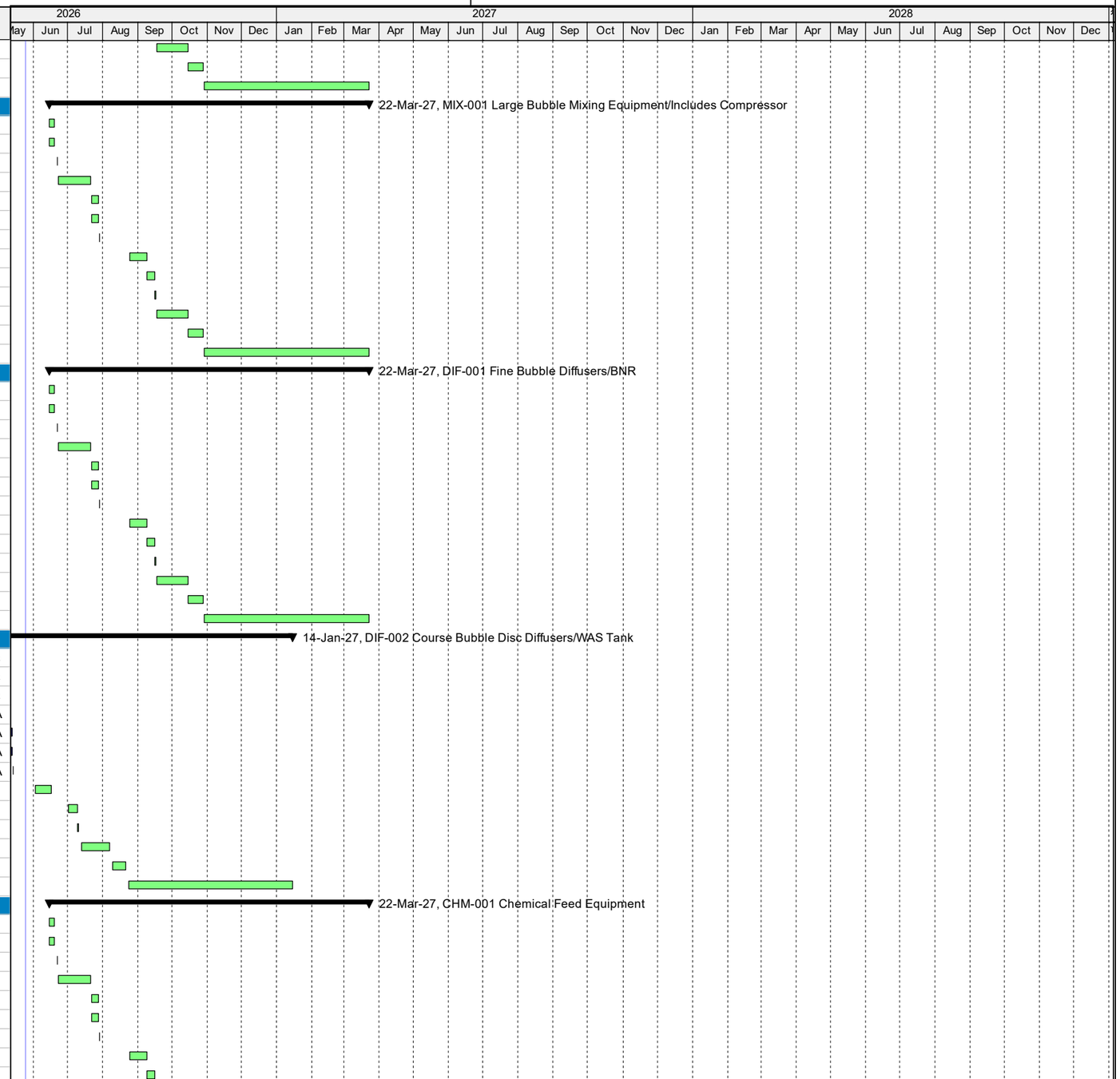
Activity ID	Activity Name	Original Duration	Start	Finish
PO-2145	ODR-001 - Vendor Develop and Submit Technical Submittals	20	17-Sep-26	14-Oct-26
PO-2150	ODR-001 - Submittal Review	10	15-Oct-26	28-Oct-26
PO-2155	ODR-001 - Fabricate and Deliver	99	29-Oct-26	22-Mar-27
MIX-001 Large Bubble Mixing Equipment/Includes Compressor		195	15-Jun-26	22-Mar-27
PO-2200	MIX-001 - Develop Technical Docs	5	15-Jun-26	19-Jun-26
PO-2205	MIX-001 - Develop Commercial Docs	5	15-Jun-26	19-Jun-26
PO-2210	MIX-001 - Conduct Q5 Review and Finalize	1	22-Jun-26	22-Jun-26
PO-2215	MIX-001 - Issue for Bid (+Bid Period)	20	23-Jun-26	21-Jul-26
PO-2220	MIX-001 - Technical Review	5	22-Jul-26	28-Jul-26
PO-2225	MIX-001 - Commercial Review	5	22-Jul-26	28-Jul-26
PO-2230	MIX-001 - Recommendation	1	29-Jul-26	29-Jul-26
PO-2235	MIX-001 - Final Negotiation	10	25-Aug-26	08-Sep-26
PO-2240	MIX-001 - Award & Execute	5	09-Sep-26	15-Sep-26
PO-2241	MIX-001 - NTP	1	16-Sep-26	16-Sep-26
PO-2245	MIX-001 - Vendor Develop and Submit Technical Submittals	20	17-Sep-26	14-Oct-26
PO-2250	MIX-001 - Submittal Review	10	15-Oct-26	28-Oct-26
PO-2255	MIX-001 - Fabricate and Deliver	99	29-Oct-26	22-Mar-27
DIF-001 Fine Bubble Diffusers/BNR		195	15-Jun-26	22-Mar-27
PO-2300	DIF-001 - Develop Technical Docs	5	15-Jun-26	19-Jun-26
PO-2305	DIF-001 - Develop Commercial Docs	5	15-Jun-26	19-Jun-26
PO-2310	DIF-001 - Conduct Q5 Review and Finalize	1	22-Jun-26	22-Jun-26
PO-2315	DIF-001 - Issue for Bid (+Bid Period)	20	23-Jun-26	21-Jul-26
PO-2320	DIF-001 - Technical Review	5	22-Jul-26	28-Jul-26
PO-2325	DIF-001 - Commercial Review	5	22-Jul-26	28-Jul-26
PO-2330	DIF-001 - Recommendation	1	29-Jul-26	29-Jul-26
PO-2335	DIF-001 - Final Negotiation	10	25-Aug-26	08-Sep-26
PO-2340	DIF-001 - Award & Execute	5	09-Sep-26	15-Sep-26
PO-2341	DIF-001 - NTP	1	16-Sep-26	16-Sep-26
PO-2345	DIF-001 - Vendor Develop and Submit Technical Submittals	20	17-Sep-26	14-Oct-26
PO-2350	DIF-001 - Submittal Review	10	15-Oct-26	28-Oct-26
PO-2355	DIF-001 - Fabricate and Deliver	99	29-Oct-26	22-Mar-27
DIF-002 Course Bubble Disc Diffusers/WAS Tank		197	06-Apr-26 A	14-Jan-27
PO-2400	DIF-002 - Develop Technical Docs	5	06-Apr-26 A	10-Apr-26 A
PO-2405	DIF-002 - Develop Commercial Docs	5	06-Apr-26 A	10-Apr-26 A
PO-2410	DIF-002 - Conduct Q5 Review and Finalize	1	13-Apr-26 A	13-Apr-26 A
PO-2415	DIF-002 - Issue for Bid (+Bid Period)	20	14-Apr-26 A	11-May-26 A
PO-2420	DIF-002 - Technical Review	2	12-May-26 A	13-May-26 A
PO-2425	DIF-002 - Commercial Review	2	12-May-26 A	13-May-26 A
PO-2430	DIF-002 - Recommendation	1	14-May-26 A	14-May-26 A
PO-2435	DIF-002 - Final Negotiation	10	03-Jun-26	16-Jun-26
PO-2440	DIF-002 - Award & Execute	5	02-Jul-26	09-Jul-26
PO-2441	DIF-002 - NTP	1	10-Jul-26	10-Jul-26
PO-2445	DIF-002 - Vendor Develop and Submit Technical Submittals	20	13-Jul-26	07-Aug-26
PO-2450	DIF-002 - Submittal Review	10	10-Aug-26	21-Aug-26
PO-2455	DIF-002 - Fabricate and Deliver	99	24-Aug-26	14-Jan-27
CHM-001 Chemical Feed Equipment		195	15-Jun-26	22-Mar-27
PO-2500	CHM-001 - Develop Technical Docs	5	15-Jun-26	19-Jun-26
PO-2505	CHM-001 - Develop Commercial Docs	5	15-Jun-26	19-Jun-26
PO-2510	CHM-001 - Conduct Q5 Review and Finalize	1	22-Jun-26	22-Jun-26
PO-2515	CHM-001 - Issue for Bid (+Bid Period)	20	23-Jun-26	21-Jul-26
PO-2520	CHM-001 - Technical Review	5	22-Jul-26	28-Jul-26
PO-2525	CHM-001 - Commercial Review	5	22-Jul-26	28-Jul-26
PO-2530	CHM-001 - Recommendation	1	29-Jul-26	29-Jul-26
PO-2535	CHM-001 - Final Negotiation	10	25-Aug-26	08-Sep-26
PO-2540	CHM-001 - Award & Execute	5	09-Sep-26	15-Sep-26



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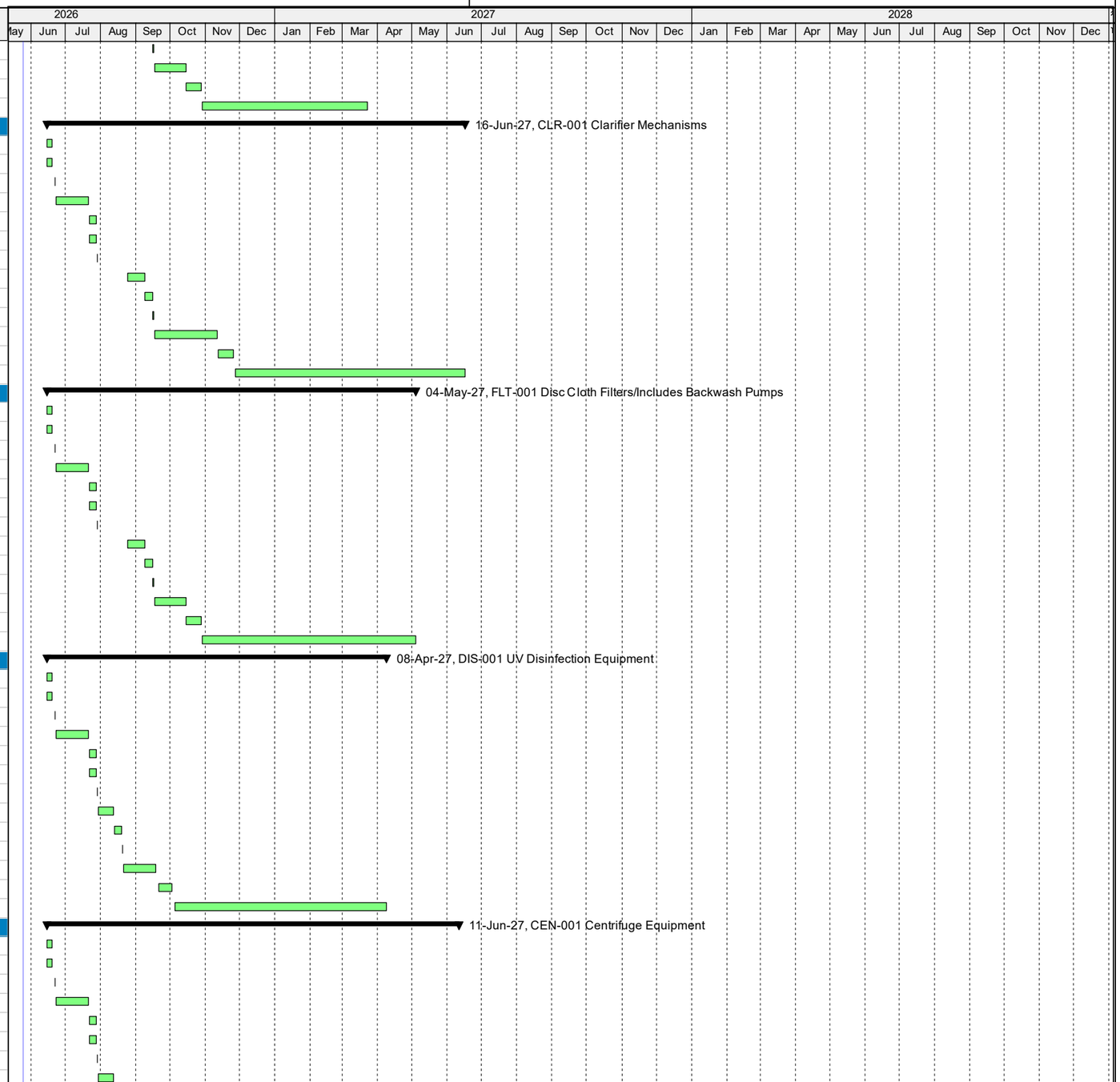
Activity ID	Activity Name	Original Duration	Start	Finish
PO-2541	CHM-001 - NTP	1	16-Sep-26	16-Sep-26
PO-2545	CHM-001 - Vendor Develop and Submit Technical Submittals	20	17-Sep-26	14-Oct-26
PO-2550	CHM-001 - Submittal Review	10	15-Oct-26	28-Oct-26
PO-2555	CHM-001 - Fabricate and Deliver	99	29-Oct-26	22-Mar-27
CLR-001 Clarifier Mechanisms		256	15-Jun-26	16-Jun-27
PO-2600	CLR-001 - Develop Technical Docs	5	15-Jun-26	19-Jun-26
PO-2605	CLR-001 - Develop Commercial Docs	5	15-Jun-26	19-Jun-26
PO-2610	CLR-001 - Conduct Q5 Review and Finalize	1	22-Jun-26	22-Jun-26
PO-2615	CLR-001 - Issue for Bid (+Bid Period)	20	23-Jun-26	21-Jul-26
PO-2620	CLR-001 - Technical Review	5	22-Jul-26	28-Jul-26
PO-2625	CLR-001 - Commercial Review	5	22-Jul-26	28-Jul-26
PO-2630	CLR-001 - Recommendation	1	29-Jul-26	29-Jul-26
PO-2635	CLR-001 - Final Negotiation	10	25-Aug-26	08-Sep-26
PO-2640	CLR-001 - Award & Execute	5	09-Sep-26	15-Sep-26
PO-2641	CLR-001 - NTP	1	16-Sep-26	16-Sep-26
PO-2645	CLR-001 - Vendor Develop and Submit Technical Submittals	40	17-Sep-26	11-Nov-26
PO-2650	CLR-001 - Submittal Review	10	12-Nov-26	25-Nov-26
PO-2655	CLR-001 - Fabricate and Deliver	140	27-Nov-26	16-Jun-27
FLT-001 Disc Cloth Filters/Includes Backwash Pumps		226	15-Jun-26	04-May-27
PO-2700	FLT-001 - Develop Technical Docs	5	15-Jun-26	19-Jun-26
PO-2705	FLT-001 - Develop Commercial Docs	5	15-Jun-26	19-Jun-26
PO-2710	FLT-001 - Conduct Q5 Review and Finalize	1	22-Jun-26	22-Jun-26
PO-2715	FLT-001 - Issue for Bid (+Bid Period)	20	23-Jun-26	21-Jul-26
PO-2720	FLT-001 - Technical Review	5	22-Jul-26	28-Jul-26
PO-2725	FLT-001 - Commercial Review	5	22-Jul-26	28-Jul-26
PO-2730	FLT-001 - Recommendation	1	29-Jul-26	29-Jul-26
PO-2735	FLT-001 - Final Negotiation	10	25-Aug-26	08-Sep-26
PO-2740	FLT-001 - Award & Execute	5	09-Sep-26	15-Sep-26
PO-2741	FLT-001 - NTP	1	16-Sep-26	16-Sep-26
PO-2745	FLT-001 - Vendor Develop and Submit Technical Submittals	20	17-Sep-26	14-Oct-26
PO-2750	FLT-001 - Submittal Review	10	15-Oct-26	28-Oct-26
PO-2755	FLT-001 - Fabricate and Deliver	130	29-Oct-26	04-May-27
DIS-001 UV Disinfection Equipment		208	15-Jun-26	08-Apr-27
PO-2800	DIS-001 - Develop Technical Docs	5	15-Jun-26	19-Jun-26
PO-2805	DIS-001 - Develop Commercial Docs	5	15-Jun-26	19-Jun-26
PO-2810	DIS-001 - Conduct Q5 Review and Finalize	1	22-Jun-26	22-Jun-26
PO-2815	DIS-001 - Issue for Bid (+Bid Period)	20	23-Jun-26	21-Jul-26
PO-2820	DIS-001 - Technical Review	5	22-Jul-26	28-Jul-26
PO-2825	DIS-001 - Commercial Review	5	22-Jul-26	28-Jul-26
PO-2830	DIS-001 - Recommendation	1	29-Jul-26	29-Jul-26
PO-2835	DIS-001 - Final Negotiation	10	30-Jul-26	12-Aug-26
PO-2840	DIS-001 - Award & Execute	5	13-Aug-26	19-Aug-26
PO-2841	DIS-001 - NTP	1	20-Aug-26	20-Aug-26
PO-2845	DIS-001 - Vendor Develop and Submit Technical Submittals	20	21-Aug-26	18-Sep-26
PO-2850	DIS-001 - Submittal Review	10	21-Sep-26	02-Oct-26
PO-2855	DIS-001 - Fabricate and Deliver	130	05-Oct-26	08-Apr-27
CEN-001 Centrifuge Equipment		253	15-Jun-26	11-Jun-27
PO-2900	CEN-001 - Develop Technical Docs	5	15-Jun-26	19-Jun-26
PO-2905	CEN-001 - Develop Commercial Docs	5	15-Jun-26	19-Jun-26
PO-2910	CEN-001 - Conduct Q5 Review and Finalize	1	22-Jun-26	22-Jun-26
PO-2915	CEN-001 - Issue for Bid (+Bid Period)	20	23-Jun-26	21-Jul-26
PO-2920	CEN-001 - Technical Review	5	22-Jul-26	28-Jul-26
PO-2925	CEN-001 - Commercial Review	5	22-Jul-26	28-Jul-26
PO-2930	CEN-001 - Recommendation	1	29-Jul-26	29-Jul-26
PO-2935	CEN-001 - Final Negotiation	10	30-Jul-26	12-Aug-26



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PO-2940	CEN-001 - Award & Execute	5	13-Aug-26	19-Aug-26
PO-2941	CEN-001 - NTP	1	20-Aug-26	20-Aug-26
PO-2945	CEN-001 - Vendor Develop and Submit Technical Submittals	20	21-Aug-26	18-Sep-26
PO-2950	CEN-001 - Submittal Review	10	21-Sep-26	02-Oct-26
PO-2955	CEN-001 - Fabricate and Deliver	175	05-Oct-26	11-Jun-27
POL-001 Polymer Feed		138	15-Jun-26	30-Dec-26
PO-3000	POL-001 - Develop Technical Docs	5	15-Jun-26	19-Jun-26
PO-3005	POL-001 - Develop Commercial Docs	5	15-Jun-26	19-Jun-26
PO-3010	POL-001 - Conduct Q5 Review and Finalize	1	22-Jun-26	22-Jun-26
PO-3015	POL-001 - Issue for Bid (+Bid Period)	20	23-Jun-26	21-Jul-26
PO-3020	POL-001 - Technical Review	5	22-Jul-26	28-Jul-26
PO-3025	POL-001 - Commercial Review	5	22-Jul-26	28-Jul-26
PO-3030	POL-001 - Recommendation	1	29-Jul-26	29-Jul-26
PO-3035	POL-001 - Final Negotiation	10	30-Jul-26	12-Aug-26
PO-3040	POL-001 - Award & Execute	5	13-Aug-26	19-Aug-26
PO-3041	POL-001 - NTP	1	20-Aug-26	20-Aug-26
PO-3045	POL-001 - Vendor Develop and Submit Technical Submittals	40	21-Aug-26	16-Oct-26
PO-3050	POL-001 - Submittal Review	10	19-Oct-26	30-Oct-26
PO-3055	POL-001 - Fabricate and Deliver	40	02-Nov-26	30-Dec-26
CON-001 Conveyors/Includes Dump Gates		226	15-Jun-26	04-May-27
PO-3100	CON-001 - Develop Technical Docs	5	15-Jun-26	19-Jun-26
PO-3105	CON-001 - Develop Commercial Docs	5	15-Jun-26	19-Jun-26
PO-3110	CON-001 - Conduct Q5 Review and Finalize	1	22-Jun-26	22-Jun-26
PO-3115	CON-001 - Issue for Bid (+Bid Period)	20	23-Jun-26	21-Jul-26
PO-3120	CON-001 - Technical Review	5	22-Jul-26	28-Jul-26
PO-3125	CON-001 - Commercial Review	5	22-Jul-26	28-Jul-26
PO-3130	CON-001 - Recommendation	1	29-Jul-26	29-Jul-26
PO-3135	CON-001 - Final Negotiation	10	25-Aug-26	08-Sep-26
PO-3140	CON-001 - Award & Execute	5	09-Sep-26	15-Sep-26
PO-3141	CON-001 - NTP	1	16-Sep-26	16-Sep-26
PO-3145	CON-001 - Vendor Develop and Submit Technical Submittals	20	17-Sep-26	14-Oct-26
PO-3150	CON-001 - Submittal Review	10	15-Oct-26	28-Oct-26
PO-3155	CON-001 - Fabricate and Deliver	130	29-Oct-26	04-May-27
GTE-001 Slide Gates		195	15-Jun-26	22-Mar-27
PO-3200	GTE-001 - Develop Technical Docs	5	15-Jun-26	19-Jun-26
PO-3205	GTE-001 - Develop Commercial Docs	5	15-Jun-26	19-Jun-26
PO-3210	GTE-001 - Conduct Q5 Review and Finalize	1	22-Jun-26	22-Jun-26
PO-3215	GTE-001 - Issue for Bid (+Bid Period)	20	23-Jun-26	21-Jul-26
PO-3220	GTE-001 - Technical Review	5	22-Jul-26	28-Jul-26
PO-3225	GTE-001 - Commercial Review	5	22-Jul-26	28-Jul-26
PO-3230	GTE-001 - Recommendation	1	29-Jul-26	29-Jul-26
PO-3235	GTE-001 - Final Negotiation	10	25-Aug-26	08-Sep-26
PO-3240	GTE-001 - Award & Execute	5	09-Sep-26	15-Sep-26
PO-3241	GTE-001 - NTP	1	16-Sep-26	16-Sep-26
PO-3245	GTE-001 - Vendor Develop and Submit Technical Submittals	20	17-Sep-26	14-Oct-26
PO-3250	GTE-001 - Submittal Review	10	15-Oct-26	28-Oct-26
PO-3255	GTE-001 - Fabricate and Deliver	99	29-Oct-26	22-Mar-27
FLU-001 Parshall Flume		195	15-Jun-26	22-Mar-27
PO-3300	FLU-001 - Develop Technical Docs	5	15-Jun-26	19-Jun-26
PO-3305	FLU-001 - Develop Commercial Docs	5	15-Jun-26	19-Jun-26
PO-3310	FLU-001 - Conduct Q5 Review and Finalize	1	22-Jun-26	22-Jun-26
PO-3315	FLU-001 - Issue for Bid (+Bid Period)	20	23-Jun-26	21-Jul-26
PO-3320	FLU-001 - Technical Review	5	22-Jul-26	28-Jul-26
PO-3325	FLU-001 - Commercial Review	5	22-Jul-26	28-Jul-26
PO-3330	FLU-001 - Recommendation	1	29-Jul-26	29-Jul-26

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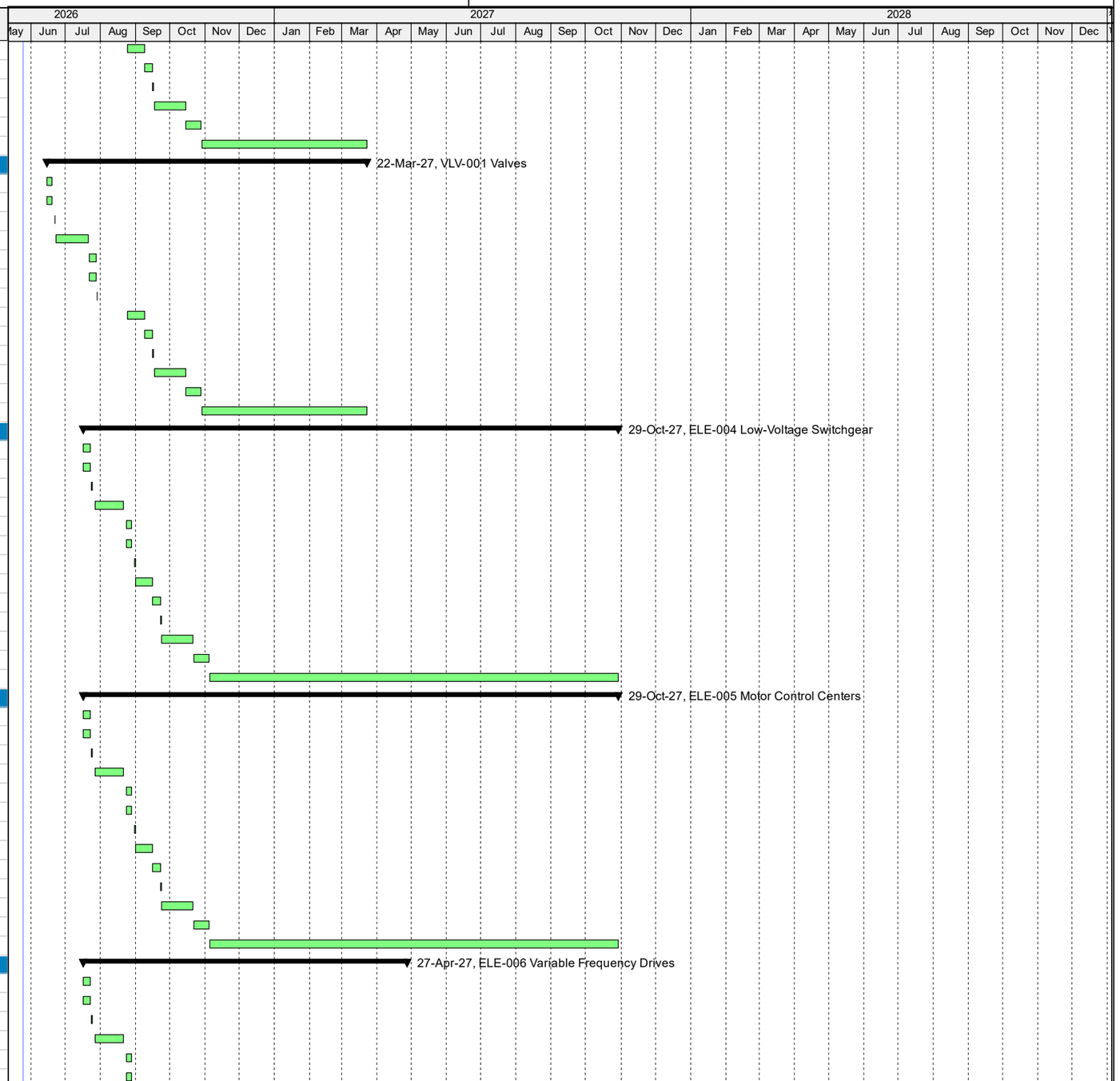
PO-3335	FLU-001 - Final Negotiation	10	25-Aug-26	08-Sep-26
PO-3340	FLU-001 - Award & Execute	5	09-Sep-26	15-Sep-26
PO-3341	FLU-001 - NTP	1	16-Sep-26	16-Sep-26
PO-3345	FLU-001 - Vendor Develop and Submit Technical Submittals	20	17-Sep-26	14-Oct-26
PO-3350	FLU-001 - Submittal Review	10	15-Oct-26	28-Oct-26
PO-3355	FLU-001 - Fabricate and Deliver	99	29-Oct-26	22-Mar-27
VLV-001 Valves		195	15-Jun-26	22-Mar-27
PO-3400	VLV-001 - Develop Technical Docs	5	15-Jun-26	19-Jun-26
PO-3405	VLV-001 - Develop Commercial Docs	5	15-Jun-26	19-Jun-26
PO-3410	VLV-001 - Conduct Q5 Review and Finalize	1	22-Jun-26	22-Jun-26
PO-3415	VLV-001 - Issue for Bid (+Bid Period)	20	23-Jun-26	21-Jul-26
PO-3420	VLV-001 - Technical Review	5	22-Jul-26	28-Jul-26
PO-3425	VLV-001 - Commercial Review	5	22-Jul-26	28-Jul-26
PO-3430	VLV-001 - Recommendation	1	29-Jul-26	29-Jul-26
PO-3435	VLV-001 - Final Negotiation	10	25-Aug-26	08-Sep-26
PO-3440	VLV-001 - Award & Execute	5	09-Sep-26	15-Sep-26
PO-3441	VLV-001 - NTP	1	16-Sep-26	16-Sep-26
PO-3445	VLV-001 - Vendor Develop and Submit Technical Submittals	20	17-Sep-26	14-Oct-26
PO-3450	VLV-001 - Submittal Review	10	15-Oct-26	28-Oct-26
PO-3455	VLV-001 - Fabricate and Deliver	99	29-Oct-26	22-Mar-27
ELE-004 Low-Voltage Switchgear		328	17-Jul-26	29-Oct-27
PO-3800	ELE-004 - Develop Technical Docs	5	17-Jul-26	23-Jul-26
PO-3805	ELE-004 - Develop Commercial Docs	5	17-Jul-26	23-Jul-26
PO-3810	ELE-004 - Conduct Q5 Review and Finalize	1	24-Jul-26	24-Jul-26
PO-3815	ELE-004 - Issue for Bid (+Bid Period)	20	27-Jul-26	21-Aug-26
PO-3820	ELE-004 - Technical Review	5	24-Aug-26	28-Aug-26
PO-3825	ELE-004 - Commercial Review	5	24-Aug-26	28-Aug-26
PO-3830	ELE-004 - Recommendation	1	31-Aug-26	31-Aug-26
PO-3835	ELE-004 - Final Negotiation	10	01-Sep-26	15-Sep-26
PO-3840	ELE-004 - Award & Execute	5	16-Sep-26	22-Sep-26
PO-3841	ELE-004 - NTP	1	23-Sep-26	23-Sep-26
PO-3845	ELE-004 - Vendor Develop and Submit Technical Submittals	20	24-Sep-26	21-Oct-26
PO-3850	ELE-004 - Submittal Review	10	22-Oct-26	04-Nov-26
PO-3855	ELE-004 - Fabricate and Deliver	250	05-Nov-26	29-Oct-27
ELE-005 Motor Control Centers		328	17-Jul-26	29-Oct-27
PO-3900	ELE-005 - Develop Technical Docs	5	17-Jul-26	23-Jul-26
PO-3905	ELE-005 - Develop Commercial Docs	5	17-Jul-26	23-Jul-26
PO-3910	ELE-005 - Conduct Q5 Review and Finalize	1	24-Jul-26	24-Jul-26
PO-3915	ELE-005 - Issue for Bid (+Bid Period)	20	27-Jul-26	21-Aug-26
PO-3920	ELE-005 - Technical Review	5	24-Aug-26	28-Aug-26
PO-3925	ELE-005 - Commercial Review	5	24-Aug-26	28-Aug-26
PO-3930	ELE-005 - Recommendation	1	31-Aug-26	31-Aug-26
PO-3935	ELE-005 - Final Negotiation	10	01-Sep-26	15-Sep-26
PO-3940	ELE-005 - Award & Execute	5	16-Sep-26	22-Sep-26
PO-3941	ELE-005 - NTP	1	23-Sep-26	23-Sep-26
PO-3945	ELE-005 - Vendor Develop and Submit Technical Submittals	20	24-Sep-26	21-Oct-26
PO-3950	ELE-005 - Submittal Review	10	22-Oct-26	04-Nov-26
PO-3955	ELE-005 - Fabricate and Deliver	250	05-Nov-26	29-Oct-27
ELE-006 Variable Frequency Drives		198	17-Jul-26	27-Apr-27
PO-4000	ELE-006 - Develop Technical Docs	5	17-Jul-26	23-Jul-26
PO-4005	ELE-006 - Develop Commercial Docs	5	17-Jul-26	23-Jul-26
PO-4010	ELE-006 - Conduct Q5 Review and Finalize	1	24-Jul-26	24-Jul-26
PO-4015	ELE-006 - Issue for Bid (+Bid Period)	20	27-Jul-26	21-Aug-26
PO-4020	ELE-006 - Technical Review	5	24-Aug-26	28-Aug-26
PO-4025	ELE-006 - Commercial Review	5	24-Aug-26	28-Aug-26



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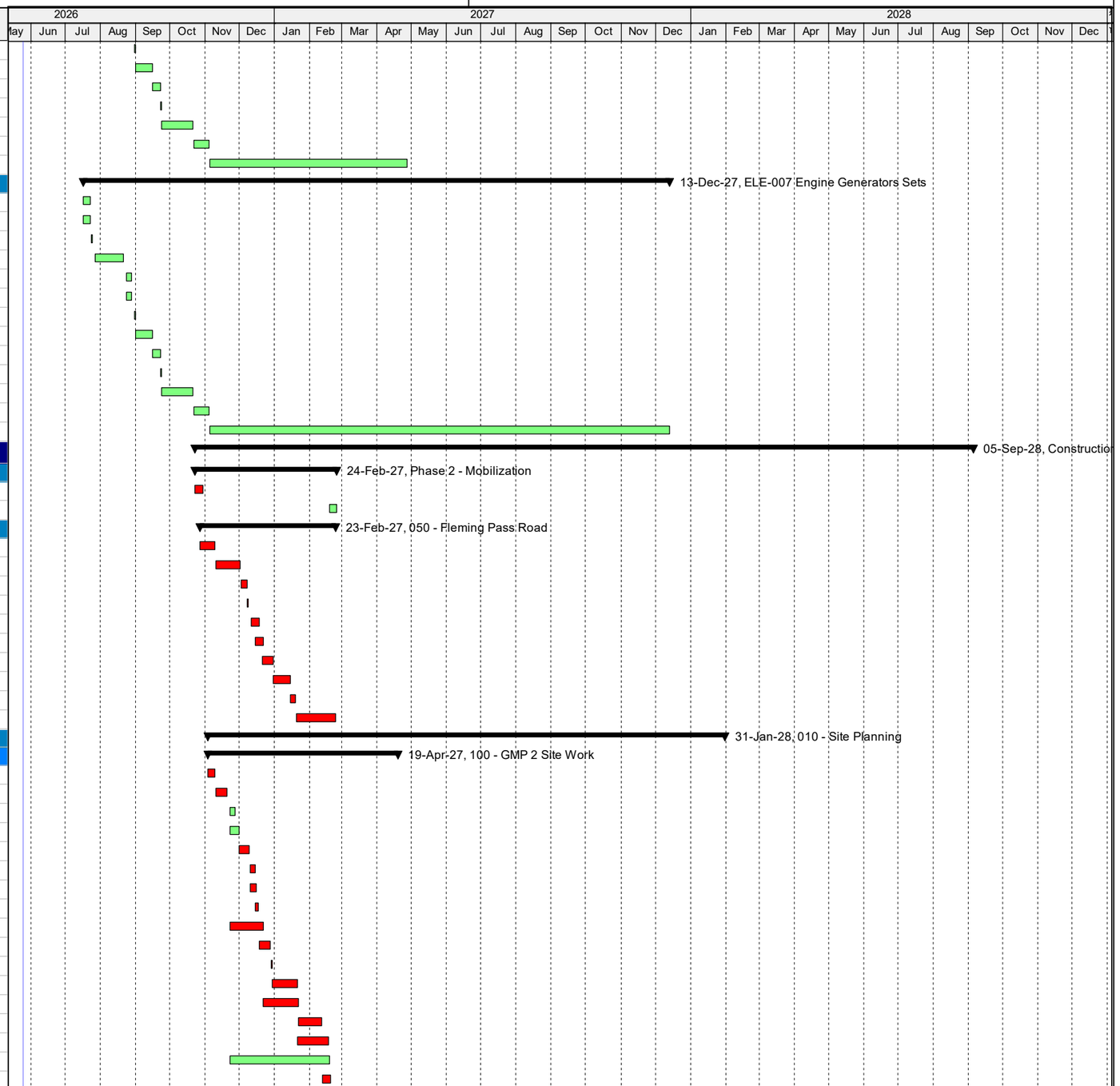
PO-4030	ELE-006 - Recommendation	1	31-Aug-26	31-Aug-26
PO-4035	ELE-006 - Final Negotiation	10	01-Sep-26	15-Sep-26
PO-4040	ELE-006 - Award & Execute	5	16-Sep-26	22-Sep-26
PO-4041	ELE-006 - NTP	1	23-Sep-26	23-Sep-26
PO-4045	ELE-006 - Vendor Develop and Submit Technical Submittals	20	24-Sep-26	21-Oct-26
PO-4050	ELE-006 - Submittal Review	10	22-Oct-26	04-Nov-26
PO-4055	ELE-006 - Fabricate and Deliver	120	05-Nov-26	27-Apr-27
ELE-007 Engine Generators Sets		358	17-Jul-26	13-Dec-27
PO-4100	ELE-007 - Develop Technical Docs	5	17-Jul-26	23-Jul-26
PO-4105	ELE-007 - Develop Commercial Docs	5	17-Jul-26	23-Jul-26
PO-4110	ELE-007 - Conduct Q5 Review and Finalize	1	24-Jul-26	24-Jul-26
PO-4115	ELE-007 - Issue for Bid (+Bid Period)	20	27-Jul-26	21-Aug-26
PO-4120	ELE-007 - Technical Review	5	24-Aug-26	28-Aug-26
PO-4125	ELE-007 - Commercial Review	5	24-Aug-26	28-Aug-26
PO-4130	ELE-007 - Recommendation	1	31-Aug-26	31-Aug-26
PO-4135	ELE-007 - Final Negotiation	10	01-Sep-26	15-Sep-26
PO-4140	ELE-007 - Award & Execute	5	16-Sep-26	22-Sep-26
PO-4141	ELE-007 - NTP	1	23-Sep-26	23-Sep-26
PO-4145	ELE-007 - Vendor Develop and Submit Technical Submittals	20	24-Sep-26	21-Oct-26
PO-4150	ELE-007 - Submittal Review	10	22-Oct-26	04-Nov-26
PO-4155	ELE-007 - Fabricate and Deliver	280	05-Nov-26	13-Dec-27
Construction		474	23-Oct-26	05-Sep-28
Phase 2 - Mobilization		85	23-Oct-26	24-Feb-27
MOBP2-1000	Contractor Mobilization	5	23-Oct-26	29-Oct-26
MOBP2-1010	Office Trailer Mobilization	5	18-Feb-27	24-Feb-27
050 - Fleming Pass Road		82	27-Oct-26	23-Feb-27
050-2280	050 - Prep Right-of-Way	10	27-Oct-26	09-Nov-26
050-2290	050 - Grading & Box Culvert Install	15	10-Nov-26	01-Dec-26
001-2300	050 - Install SWPPP BMP's	4	02-Dec-26	07-Dec-26
050-2320	050 - Place RipRap	1	08-Dec-26	08-Dec-26
050-2330	050 - Access Road Excavation	6	11-Dec-26	18-Dec-26
050-2310	050 - F&I Culvert Drainage	5	15-Dec-26	21-Dec-26
001-2340	050 - Access Road Embankment	6	21-Dec-26	30-Dec-26
050-2350	050 - Place Flexbase	10	31-Dec-26	14-Jan-27
050-2360	050 - Proof Roll Pavement Sub-Surface	3	15-Jan-27	19-Jan-27
050-2370	050 - Place Pavement & Install/Remove Bypass Lanes	25	20-Jan-27	23-Feb-27
010 - Site Planning		314	03-Nov-26	31-Jan-28
100 - GMP 2 Site Work		116	03-Nov-26	19-Apr-27
100-4000	100 - MOW/Clear/Grub	5	03-Nov-26	09-Nov-26
100-4100	100 - Install SWPPP, Construction Entrance	9	10-Nov-26	20-Nov-26
100-4040	100 - Install Manhole (Must be Installed by 1/15/27)	4	23-Nov-26	27-Nov-26*
100-4070	100 - Install Potable Water Line	5	23-Nov-26	30-Nov-26
100-4035	100 - Temp Road F&I Culvert Draiange - West	7	01-Dec-26	09-Dec-26
100-4045	100 - Temp Road Place Erosion Control - West	3	10-Dec-26	14-Dec-26
100-4065	100 - Temp Road Access Road Excavation - West	4	10-Dec-26	15-Dec-26
100-4055	100 - Temp Road Access Road Embankment - West	3	15-Dec-26	17-Dec-26
100-4025	100 - Site Grading - West	20	23-Nov-26	21-Dec-26
100-4075	100 - Temp Road Place Flexbase - West	5	18-Dec-26	28-Dec-26
100-4085	100 - Temp Road Proof Roll Pavement Surface - West	1	29-Dec-26	29-Dec-26
100-2035	100 - Install Laydown Temp Electrical	15	30-Dec-26	20-Jan-27
100-4030	100 - Site Grading - East	20	22-Dec-26	21-Jan-27
100-3000	100 - Temp Road Subgrade Preparation	15	22-Jan-27	11-Feb-27
100-2030	100 - Prep Laydown & Parking	20	21-Jan-27	17-Feb-27
100-2000	100 - Yard Piping Influent Piping	60	23-Nov-26	18-Feb-27
100-3100	100 - Temp Road F&I Culvert Draiange - East	6	12-Feb-27	19-Feb-27



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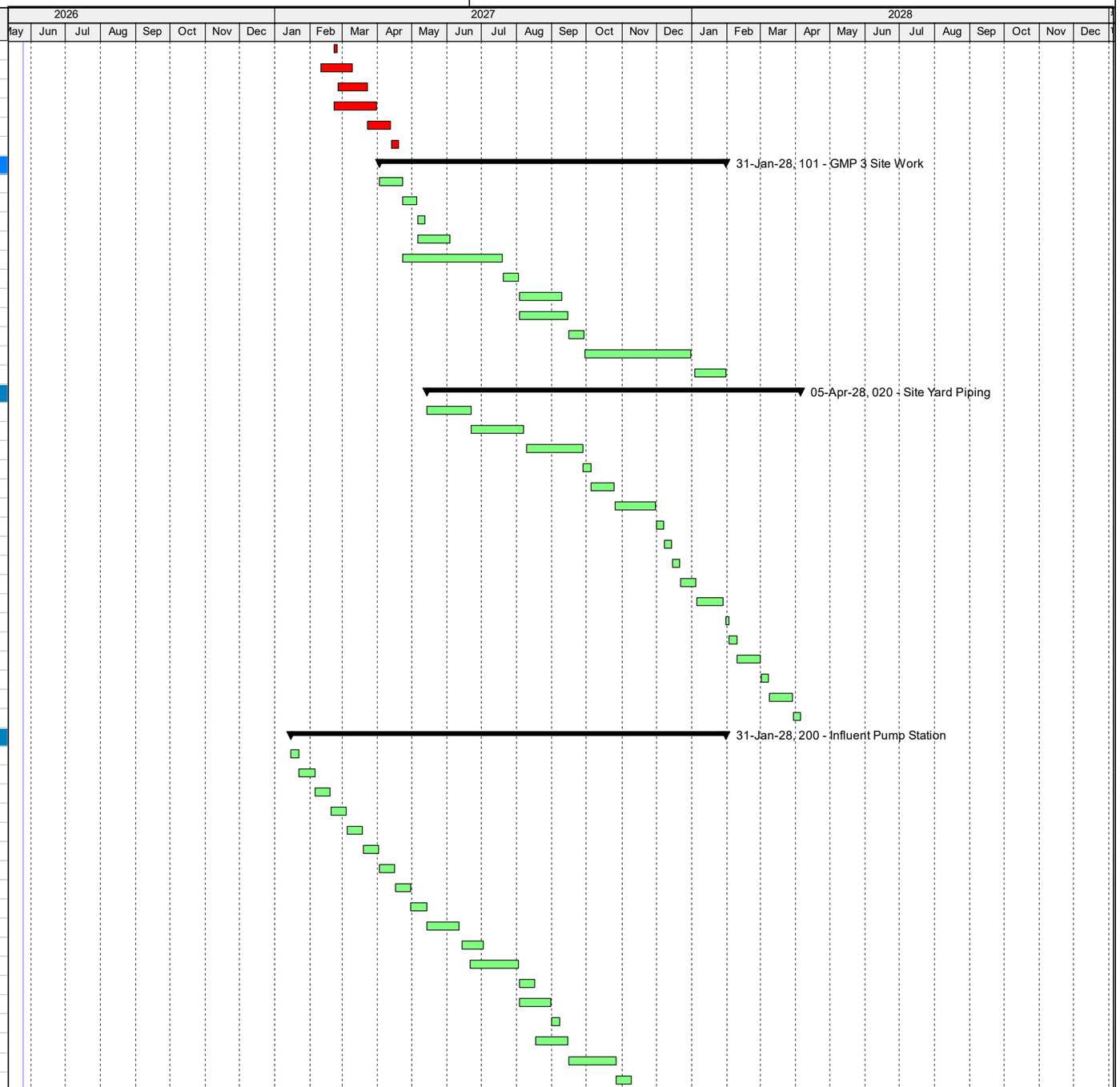
Activity ID	Activity Name	Original Duration	Start	Finish
100-3020	100 - Temp Road Place Erosion Control - East	3	22-Feb-27	24-Feb-27
100-2040	100 - Install Temp Site Fencing - East	20	10-Feb-27	09-Mar-27
100-3040	100 - Temp Road Access Road Embankment - East	18	25-Feb-27	22-Mar-27
100-3030	100 - Temp Road Access Road Excavation - East	27	22-Feb-27	30-Mar-27
100-3050	100 - Temp Road Place Flexbase - East	15	23-Mar-27	12-Apr-27
100-3060	100 - Temp Road Proof Roll Pavement Surface - East	5	13-Apr-27	19-Apr-27
101 - GMP 3 Site Work		210	02-Apr-27	31-Jan-28
101-1000	101 - MOW/Clear/Grub - Southeast Outfall	15	02-Apr-27	22-Apr-27
101-1010	101 - Install SWPPP, Construction Entrance	9	23-Apr-27	05-May-27
101-1080	101 - Install Temp Site Fencing	5	06-May-27	12-May-27
101-1070	101 - Prep Additional Laydown & Parking, If Needed	20	06-May-27	03-Jun-27
101-1050	101 - Site Grading - Additional Drainage Ponds, Block Mat	60	23-Apr-27	19-Jul-27
101-1090	101 - Road Subgrade Restoration	10	20-Jul-27	02-Aug-27
101-1130	101 - Road Excavation	27	03-Aug-27	09-Sep-27
101-1140	101 - Road Place Flexbase	30	03-Aug-27	14-Sep-27
101-1150	101 - Road Proof Roll Pavement Surface	10	15-Sep-27	28-Sep-27
101-1160	101 - Final Road Pavement	65	29-Sep-27	31-Dec-27
101-1170	101 - Site Restoration, Final Grading, and Fencing	20	04-Jan-28	31-Jan-28
020 - Site Yard Piping		227	14-May-27	05-Apr-28
020-1005	020 - Site Potable Water Service Piping	26	14-May-27	21-Jun-27
020-1015	020 - Site Sanitary Sewer Yard Piping	33	22-Jun-27	06-Aug-27
020-1030	020 - Site Storm Piping	35	09-Aug-27	27-Sep-27
020-1040	020 - Site Plant Effluent Piping	5	28-Sep-27	04-Oct-27
020-1050	020 - Site Nonpotable Water Piping	15	05-Oct-27	25-Oct-27
020-1060	020 - Site WAS Piping	25	26-Oct-27	30-Nov-27
020-1070	020 - Site Influent Force main Piping	5	01-Dec-27	07-Dec-27
020-1080	020 - Site Underground Odor Control Piping	5	08-Dec-27	14-Dec-27
020-1090	020 - Site Grit Piping	5	15-Dec-27	21-Dec-27
020-1100	020 - Site BNR Influent/Effluent Piping	7	22-Dec-27	04-Jan-28
020-1110	020 - Site Final Clarifier Influent/Effluent Piping	18	05-Jan-28	28-Jan-28
020-1120	020 - Site Underground Plant Air	3	31-Jan-28	02-Feb-28
020-1130	020 - Site Underground Blower Piping	5	03-Feb-28	09-Feb-28
020-1140	020 - Site RAS Piping	15	10-Feb-28	01-Mar-28
020-1150	020 - Site Scum Piping	5	02-Mar-28	08-Mar-28
020-1160	020 - Site Filter Influent/Bypass	15	09-Mar-28	29-Mar-28
020-1170	020 - Site UV Effluent	5	30-Mar-28	05-Apr-28
200 - Influent Pump Station		265	15-Jan-27	31-Jan-28
200-1000	200 - Initial Excavation	5	15-Jan-27	21-Jan-27
200-1010	200 - Cassion Exterior Wall 1st Lift	10	22-Jan-27	04-Feb-27
200-1020	200 - Excavate/Sink 1st Lift	10	05-Feb-27	18-Feb-27
200-1030	200 - Cassion Exterior Wall 2nd Lift	10	19-Feb-27	04-Mar-27
200-1032	200 - Excavate/Sink 2nd Lift	10	05-Mar-27	18-Mar-27
200-1034	200 - Cassion Exterior Wall Final Lift	10	19-Mar-27	01-Apr-27
200-1036	200 - Excavate/Sink Final Lift	10	02-Apr-27	15-Apr-27
200-1040	200 - Concrete Plug / Seal Slab	10	16-Apr-27	29-Apr-27
200-1050	200 - Foundation	10	30-Apr-27	13-May-27
200-1190	200 - Leak Testing	20	14-May-27	11-Jun-27
200-1090	200 - Backfill Cassion	15	14-Jun-27	02-Jul-27
200-1070	200 - Interior Walls	30	21-Jun-27	02-Aug-27
200-1140	200 - Slide Gates	10	03-Aug-27	16-Aug-27
200-1110	200 - Process Piping (Interior & Exterior)	20	03-Aug-27	30-Aug-27
200-1072	200 - Grout Inverts	5	31-Aug-27	07-Sep-27
200-1075	200 - Interior Lining (Walls & Floor)	20	17-Aug-27	14-Sep-27
200-1150	200 - Concrete Lid	30	15-Sep-27	26-Oct-27
200-1160	200 - Grout & Finish Work	10	27-Oct-27	09-Nov-27



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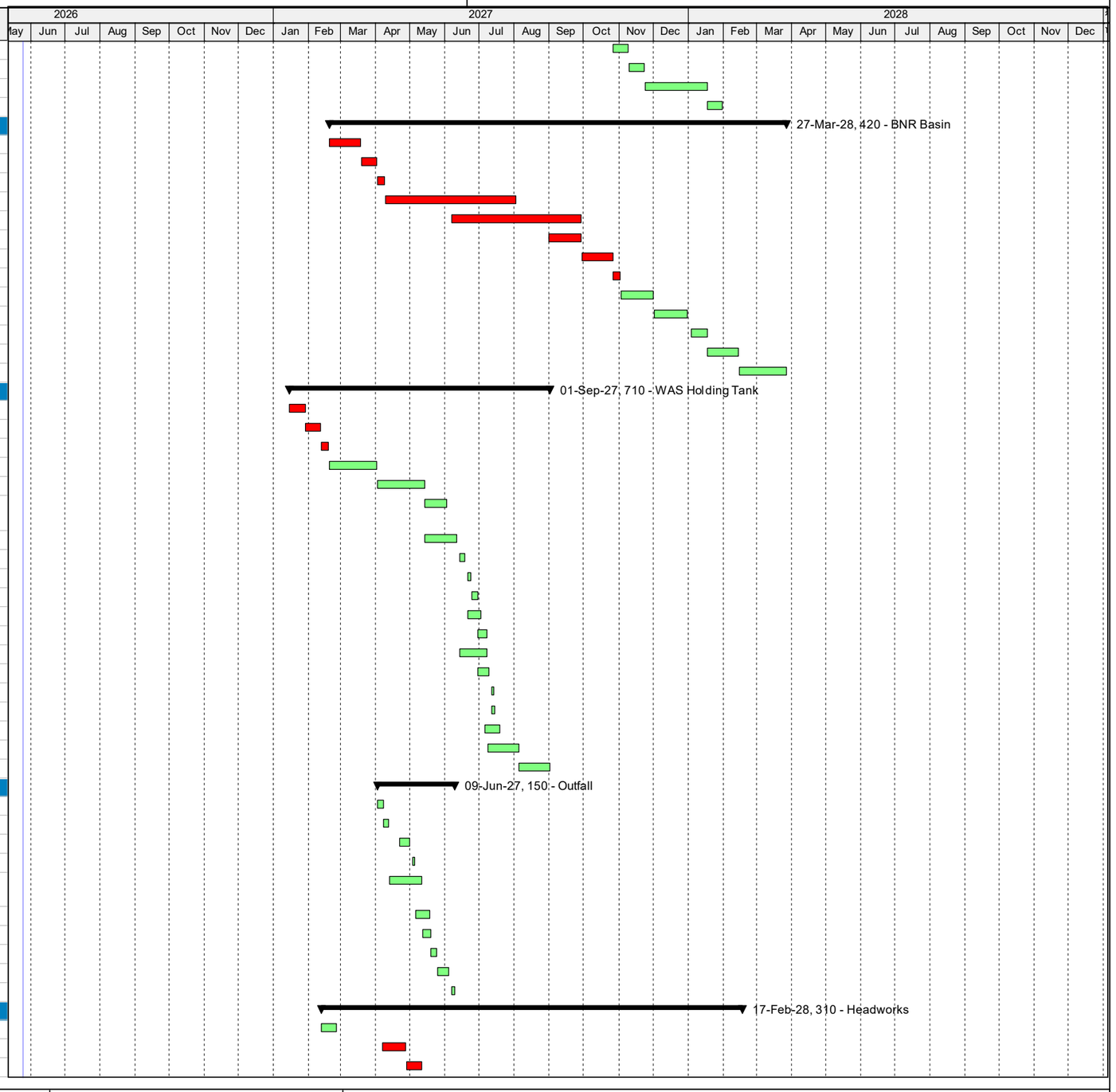
Activity ID	Activity Name	Original Duration	Start	Finish
200-1165	200 - Interior Lining (Lid)	10	27-Oct-27	09-Nov-27
200-1170	200 - Exterior Misc. Metals	10	10-Nov-27	23-Nov-27
200-1180	200 - Electrical & I&C	35	24-Nov-27	17-Jan-28
200-1120	200 - Permanent Pumps	10	18-Jan-28	31-Jan-28
420 - BNR Basin		280	19-Feb-27	27-Mar-28
420-1010-1	420 - Overexcavation	20	19-Feb-27	18-Mar-27
420-1020	420 - Underslab Piping	10	19-Mar-27	01-Apr-27
420-1025	420 - Place Aggregate Subgrade	5	02-Apr-27	08-Apr-27
420-1030	420 - Foundation	80	09-Apr-27	02-Aug-27
420-1040	420 - Vertical Concrete Walls	80	07-Jun-27	28-Sep-27
420-1050	420 - Interior Concrete Walls	20	31-Aug-27	28-Sep-27
420-1080	420 - Leak Testing	20	29-Sep-27	26-Oct-27
420-1052	420 - Backfill Basin	5	27-Oct-27	02-Nov-27
420-1055	420 - Diffuser Equipment Piping (GMP 3)	20	03-Nov-27	01-Dec-27
420-1056	420 - Air Piping (GMP 3)	20	02-Dec-27	31-Dec-27
420-1057	420 - Recycle Piping (GMP 3)	10	04-Jan-28	17-Jan-28
420-1060	420 - Misc. Metals (GMP 3)	20	18-Jan-28	14-Feb-28
420-1070	420 - Electrical & Lighting (GMP 3)	30	15-Feb-28	27-Mar-28
710 - WAS Holding Tank		162	15-Jan-27	01-Sep-27
710-1010-1	710 - Overexcavation	10	15-Jan-27	28-Jan-27
710-1010	710 - Underslab Piping	10	29-Jan-27	11-Feb-27
710-1025	710 - Excavate to subgrade	5	12-Feb-27	18-Feb-27
710-1030	710 - Slab Foundation	30	19-Feb-27	01-Apr-27
710-1040	710 - Concrete Walls	30	02-Apr-27	13-May-27
710-5180	710 - Install Pump & Haul Piping	12	14-May-27	02-Jun-27
710-5190	710 - Leak Testing	20	14-May-27	11-Jun-27
710-1045	710 - Backfill WAS Tank	5	14-Jun-27	18-Jun-27
710-3460	710 - Pumps- Install Pump Pads (WAS Tank)	3	21-Jun-27	23-Jun-27
710-3480	710 - Set Pump Skids (WAS Tank)	4	24-Jun-27	29-Jun-27
710-1090	710 - Slide Gate	10	21-Jun-27	02-Jul-27
710-3540	710 - Install Lightpole (WAS Tank)	5	30-Jun-27	07-Jul-27
710-5170	710 - Install Mixing/Aeration System	17	14-Jun-27	07-Jul-27
710-3490	710 - Pump Instrument and Controls (WAS Tank)	7	30-Jun-27	09-Jul-27
710-3560	710 - Test Instrumentation & Controls (WAS Tank)	2	12-Jul-27	13-Jul-27
710-3500	710 - Startup & Commision Pumps (WAS Tank)	3	12-Jul-27	14-Jul-27
710-1100	710 - Misc. Metals and Walkways (GMP 3)	10	06-Jul-27	19-Jul-27
710-1050	710 - Above Grade Process Piping	20	08-Jul-27	04-Aug-27
710-1060	710 - Above Grade Electrical	20	05-Aug-27	01-Sep-27
150 - Outfall		48	02-Apr-27	09-Jun-27
150-1020	150 - Dewater & Earthen Dam	4	02-Apr-27	07-Apr-27
150-1030	150 - Setup Dewatering (if necessary)	3	08-Apr-27	12-Apr-27
150-1050	150 - Outfall Piping (410-LF)	7	22-Apr-27	30-Apr-27
150-1060	150 - Install Manhole 3 at STA 10+37.65	3	03-May-27	05-May-27
150-1040	150 - Install Concrete Outfall with First Section of Pipe (Wingwall+Riprap)	21	13-Apr-27	11-May-27
150-1070	150 - Outfall Piping (511-LF)	9	06-May-27	18-May-27
150-1080	150 - Remove Earthen Dam & Restore Creek	6	12-May-27	19-May-27
150-1090	150 - Install Manhole 2 at STA 5+26.08	4	19-May-27	24-May-27
150-1100	150 - Outfall Piping (526-LF)	8	25-May-27	04-Jun-27
150-1110	150 - Install Manhole 1 at STA 0+00 Plant Site	3	07-Jun-27	09-Jun-27
310 - Headworks		258	12-Feb-27	17-Feb-28
310-1000	310 - Overexcavation	10	12-Feb-27	25-Feb-27
310-1010	310 - Underslab Piping	15	07-Apr-27	27-Apr-27
310-1020	310 - Underslab Electrical	10	28-Apr-27	11-May-27



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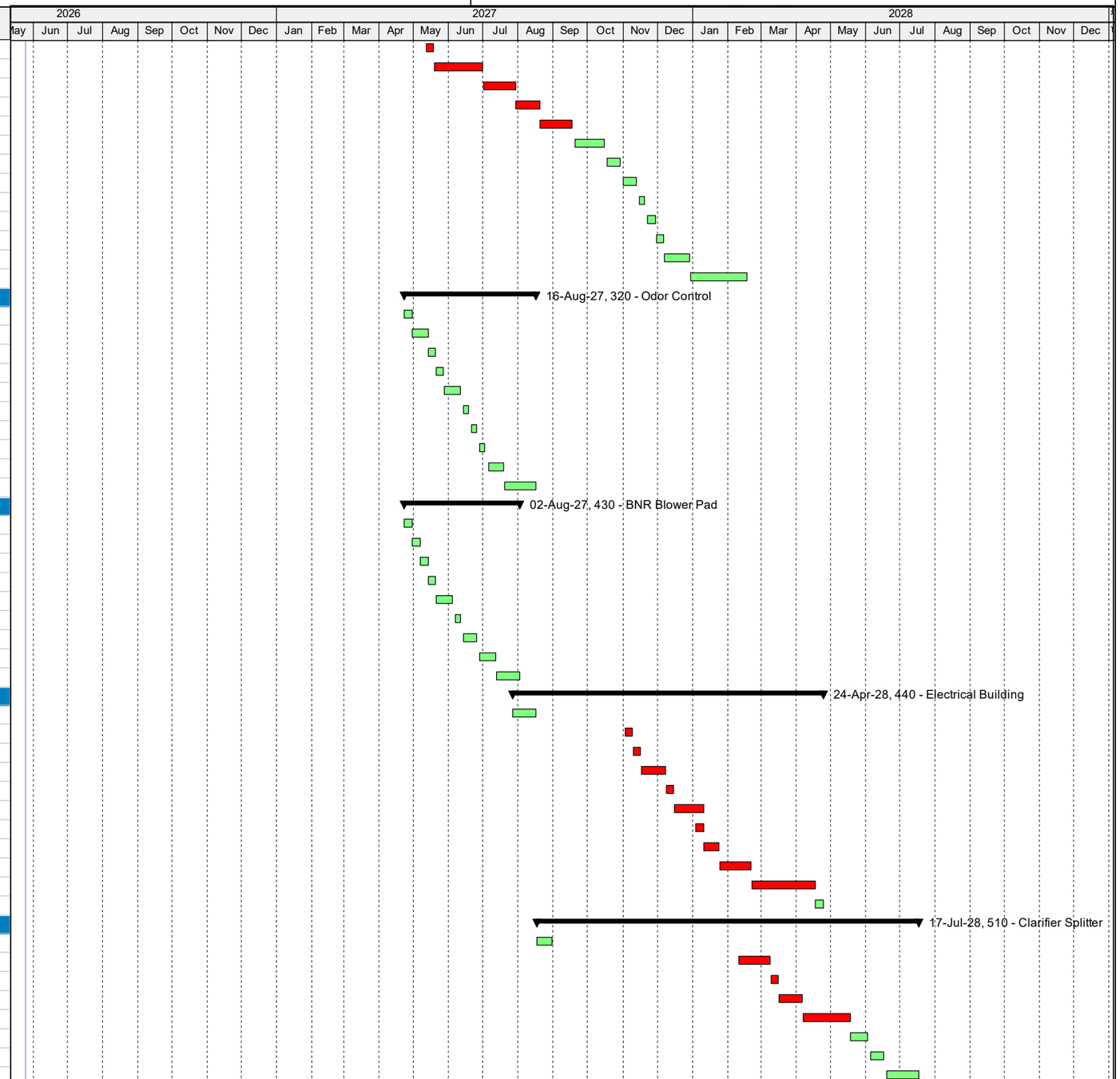
310-1022	310 - Place Aggregate Subase	5	12-May-27	18-May-27
310-1040	310 - Foundation	30	19-May-27	30-Jun-27
310-1050	310 - Exterior Walls	20	01-Jul-27	29-Jul-27
310-1060	310 - Channel Walls	15	30-Jul-27	19-Aug-27
310-1070	310 - Elevated Floors	20	20-Aug-27	17-Sep-27
310-1090	310 - Gates, Bar Screens & Stop Logs	20	20-Sep-27	15-Oct-27
310-1100	310 - Process Piping	10	18-Oct-27	29-Oct-27
310-1110	310 - Fine Screens	10	01-Nov-27	12-Nov-27
310-1112	310 - Git Removal	5	15-Nov-27	19-Nov-27
310-1114	310 - Screen Washer & Compactor	5	22-Nov-27	29-Nov-27
310-1116	310 - Grit Washer/Classifier	5	30-Nov-27	06-Dec-27
310-1115	310 - Grating & Misc. Metals	15	07-Dec-27	29-Dec-27
310-1120	310 - General Electrical and I&C	35	30-Dec-27	17-Feb-28
320 - Odor Control		80	23-Apr-27	16-Aug-27
320-1000	320 - Excavate to Foundation Elevation	5	23-Apr-27	29-Apr-27
320-1010	320 - Underslab Piping	10	30-Apr-27	13-May-27
320-1020	320 - Underslab Electrical	5	14-May-27	20-May-27
320-1022	320 - Place Aggregate Sub-base	5	21-May-27	27-May-27
320-1030	320 - Foundation	10	28-May-27	11-Jun-27
320-1040	320 - Housekeeping Pads	5	14-Jun-27	18-Jun-27
320-1050	320 - Install Filter Tank	5	21-Jun-27	25-Jun-27
320-1060	320 - Install Blower	5	28-Jun-27	02-Jul-27
320-1070	320 - Above Slab Process Piping	10	06-Jul-27	19-Jul-27
320-1080	320 - Above Slab Electrical and I&C	20	20-Jul-27	16-Aug-27
430 - BNR Blower Pad		70	23-Apr-27	02-Aug-27
430-1000	430 - Subgrade Preparations	5	23-Apr-27	29-Apr-27
430-1010	430 - Underslab Piping	5	30-Apr-27	06-May-27
430-1015	430 - Underslab Electrical	5	07-May-27	13-May-27
430-1017	430 - Place Aggregate Sub-base	5	14-May-27	20-May-27
430-1020	430 - Foundation	10	21-May-27	04-Jun-27
430-1040	430 - Above Grade Pipe & Supports	5	07-Jun-27	11-Jun-27
430-1050	430 - Blower Installation	10	14-Jun-27	25-Jun-27
430-1055	430 - Canopy	10	28-Jun-27	12-Jul-27
430-1060	430 - Electrical & Lighting	15	13-Jul-27	02-Aug-27
440 - Electrical Building		190	27-Jul-27	24-Apr-28
440-1010-1	440 - Overexcavation	15	27-Jul-27	16-Aug-27
440-1010	440 - Underslab Electrical	5	03-Nov-27	09-Nov-27
440-1012	440 - Place Aggregate Sub-base	5	10-Nov-27	16-Nov-27
440-1020	440 - Foundation	15	17-Nov-27	08-Dec-27
440-1030	440 - Housekeeping Pads / Foundation Cure Time	5	09-Dec-27	15-Dec-27
440-1040	440 - PEMB Installation	15	16-Dec-27	10-Jan-28
440-1060	440 - Doors & Hardware	5	04-Jan-28	10-Jan-28
440-1070	440 - HVAC	10	11-Jan-28	24-Jan-28
440-1080	440 - Electrical Equipment Installation	20	25-Jan-28	21-Feb-28
440-1090	440 - Above Slab Electrical (Wire, Conduit & Lighting)	40	22-Feb-28	17-Apr-28
440-1100	440 - External Misc. Metals	5	18-Apr-28	24-Apr-28
510 - Clarifier Splitter		233	17-Aug-27	17-Jul-28
510-1000	510 - Overexcavation	10	17-Aug-27	30-Aug-27
510-1030	510 - Underslab Piping	20	11-Feb-28	09-Mar-28
510-1032	510 - Place Aggregate Sub-base	5	10-Mar-28	16-Mar-28
510-1050	510 - Foundation	15	17-Mar-28	06-Apr-28
510-1060	510 - Vertical Walls	30	07-Apr-28	18-May-28
510-1075	510 - Install Gates & Stop Log Plates	10	19-May-28	02-Jun-28
510-1090	510 - Grating & Misc. Metals	10	05-Jun-28	16-Jun-28
510-1100	510 - Electrical & Lighting	20	19-Jun-28	17-Jul-28



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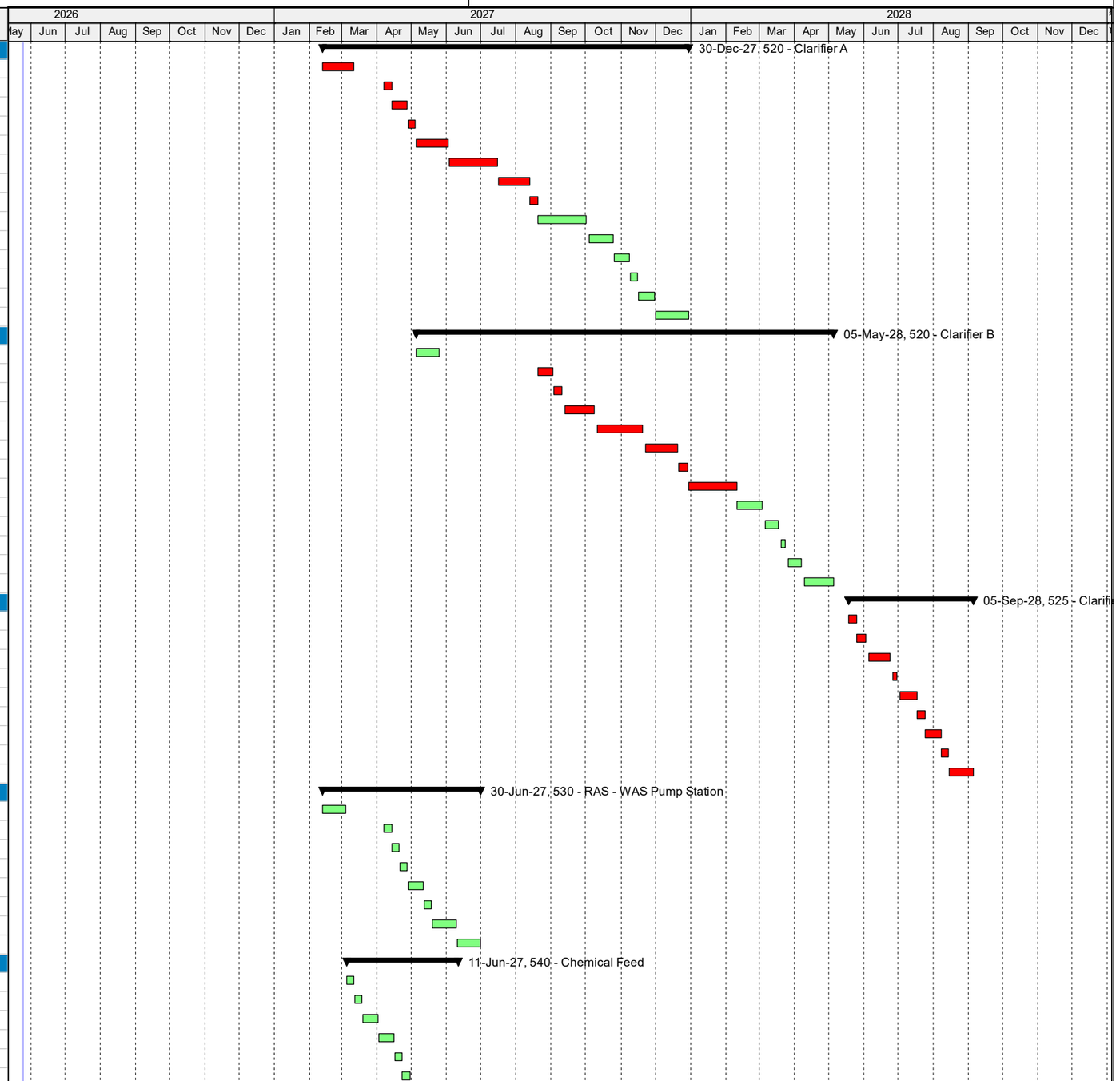
Activity ID	Activity Name	Original Duration	Start	Finish
520 - Clarifier A		224	12-Feb-27	30-Dec-27
520-1010-2	520 - Overexcavation	20	12-Feb-27	11-Mar-27
520-1010	520A - Underslab Piping	5	07-Apr-27	13-Apr-27
520-1030	520A - Clarifier Column Base	10	14-Apr-27	27-Apr-27
520-1032	520A - Place Aggregate Sub-base	5	28-Apr-27	04-May-27
520-1040	520A - Clarifier Floor	20	05-May-27	02-Jun-27
520-1050	520A - Vertical Walls	30	03-Jun-27	15-Jul-27
520-1220	520A - Leak Testing	20	16-Jul-27	12-Aug-27
520-1055	520A - Backfill Clarifier Walls	5	13-Aug-27	19-Aug-27
520-1060	520A - Concrete Effluent Trough	30	20-Aug-27	01-Oct-27
520-1070	520A-Clarifier Mechanism	16	04-Oct-27	25-Oct-27
520-1080	520A - Walkway & Misc. Metals	10	26-Oct-27	08-Nov-27
520-1082	520A - Grount Clarifier Floor Topping	5	09-Nov-27	15-Nov-27
520-1090	520A - Above Slab Piping	10	16-Nov-27	30-Nov-27
520-1100	520A - Above Slab Electrical	20	01-Dec-27	30-Dec-27
520 - Clarifier B		256	05-May-27	05-May-28
520-1120	520B - Underslab Piping	15	05-May-27	25-May-27
520-1140	520B - Clarifier Column Base	10	20-Aug-27	02-Sep-27
520-1142	520B - Place Aggregate Sub-base	5	03-Sep-27	10-Sep-27
520-1150	520B - Clarifier Floor	20	13-Sep-27	08-Oct-27
520-1160	520B - Vertical Walls	30	11-Oct-27	19-Nov-27
520-1230	520B - Leak Testing	20	22-Nov-27	20-Dec-27
520-1165	520B - Backfill Clarifier Walls	5	21-Dec-27	29-Dec-27
520-1170	520B - Concrete Effluent Trough	30	30-Dec-27	10-Feb-28
520-1180	520B-Clarifier Mechanism	16	11-Feb-28	03-Mar-28
520-1190	520B - Walkway & Misc. Metals	10	06-Mar-28	17-Mar-28
520-1192	520B - Grout Clarifier Floor Topping	5	20-Mar-28	24-Mar-28
520-1200	520B - Above Slab Piping	10	27-Mar-28	07-Apr-28
520-1210	520B - Above Slab Electrical	20	10-Apr-28	05-May-28
525 - Clarifier Scum Pump Station		75	19-May-28	05-Sep-28
525-1010	525 - Excavate to Foundation Elevation	5	19-May-28	25-May-28
525-1020	525 - Place Aggregate Sub-base	5	26-May-28	02-Jun-28
525-1030	525 - Foundation	15	05-Jun-28	23-Jun-28
525-1040	525 - Precast Pump Station	5	26-Jun-28	30-Jun-28
525-1050	525 - Ground Pump Station Invert	10	03-Jul-28	17-Jul-28
525-1060	525 - Set Scum Pumps	5	18-Jul-28	24-Jul-28
525-1070	525 - Process Piping, Supports and Valves	10	25-Jul-28	07-Aug-28
525-1080	525 - Misc. Metals & Grating	5	08-Aug-28	14-Aug-28
525-1090	525 - Electrical and I&C	15	15-Aug-28	05-Sep-28
530 - RAS - WAS Pump Station		98	12-Feb-27	30-Jun-27
530-1010-2	530 - Overexcavation	15	12-Feb-27	04-Mar-27
530-1010	530 - Underslab Piping	5	07-Apr-27	13-Apr-27
530-1020	530 - Underslab Electrical	5	14-Apr-27	20-Apr-27
530-1022	530 - Place Aggregate Sub-base	5	21-Apr-27	27-Apr-27
530-1030	530 - Foundation	10	28-Apr-27	11-May-27
530-1040	530 - Above Slab Pumps	5	12-May-27	18-May-27
530-1050	530 - Above Slab Process Piping	15	19-May-27	09-Jun-27
530-1060	530 - General Electrical and I&C	15	10-Jun-27	30-Jun-27
540 - Chemical Feed		70	05-Mar-27	11-Jun-27
540-1000	540 - Excavate to Foundation Elevation	5	05-Mar-27	11-Mar-27
540-1010	540 - Place Aggregate Sub-base	5	12-Mar-27	18-Mar-27
540-1030	540 - Foundation	10	19-Mar-27	01-Apr-27
540-1040	540 - Containment Walls	10	02-Apr-27	15-Apr-27
540-1050	540 - Housekeeping Pad	5	16-Apr-27	22-Apr-27
540-1060	540 - Chemical Pump Enclosure	5	23-Apr-27	29-Apr-27



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Activity ID	Activity Name	Original Duration	Start	Finish
540-1070	540 - Install Chemical Storage Tank	5	30-Apr-27	06-May-27
540-1080	540 - Above Slab Process Piping	10	07-May-27	20-May-27
540-1090	540 - Above Slab Electrical and I&C	15	21-May-27	11-Jun-27
610 - Filters, UV, and NPW		315	19-May-27	14-Aug-28
610-1000	610 - Overexcavation	15	19-May-27	09-Jun-27
610-1007	610 - Underslab Piping	5	20-Sep-27	24-Sep-27
610-1014	610 - Underslab Electrical	5	27-Sep-27	01-Oct-27
610-1015	610 - Place Aggregate Sub-base	5	04-Oct-27	08-Oct-27
610-1020	610 - Foundation	20	11-Oct-27	05-Nov-27
610-1030	610 - Exterior Walls	30	08-Nov-27	20-Dec-27
610-1035	610 - Backfill Exterior Walls	5	21-Dec-27	29-Dec-27
610-1040	610 - Interior Walls	30	30-Dec-27	10-Feb-28
610-1050	610 - Elevated Floors	15	11-Feb-28	02-Mar-28
610-1060	610 - Process Piping	20	03-Mar-28	30-Mar-28
610-1070	610 - Disc Filters	10	31-Mar-28	13-Apr-28
610-1072	610 - UV Equipment	15	14-Apr-28	04-May-28
610-1074	610 - NPW Pumps	5	05-May-28	11-May-28
610-1076	610 - NPW Bladder Tank	5	12-May-28	18-May-28
610-1078	610 - Slide Gates	5	19-May-28	25-May-28
610-1080	610 - Grating & Misc. Metals	10	26-May-28	09-Jun-28
610-1090	610 - Structural Steel (PEMB)	15	12-Jun-28	30-Jun-28
610-1100	610 - General Electrical and I&C	30	03-Jul-28	14-Aug-28
620 - Effluent Structure		204	11-Oct-27	28-Jul-28
620-1000	620 - Overexcavation	15	11-Oct-27	29-Oct-27
620-1015	620-Place Aggregate Sub-base	5	03-Mar-28	09-Mar-28
620-1020	620 - Foundation	15	10-Mar-28	30-Mar-28
620-1030	620 - Vertical Walls	30	31-Mar-28	11-May-28
620-1040	620 - Interior Walls	15	12-May-28	02-Jun-28
620-1050	620 - Elevated Floors	15	05-Jun-28	23-Jun-28
620-1060	620 - Process Piping	4	26-Jun-28	29-Jun-28
620-1070	620 - Parshall Flume	5	30-Jun-28	07-Jul-28
620-1080	620 - Grating & Misc. Metals	10	10-Jul-28	21-Jul-28
620-1090	620 - General Electrical and I&C	5	24-Jul-28	28-Jul-28
715 - WAS Blower Pad		150	27-Oct-26	28-May-27
715-1010	715 - Excavation to Foundation Grade	5	27-Oct-26	02-Nov-26
715-1020	715 - Underslab Piping	5	03-Nov-26	09-Nov-26
715-1030	715 - Underslab Electrical	5	10-Nov-26	16-Nov-26
715-1040	715 - Place Aggregate Base Subgrade	5	17-Nov-26	23-Nov-26
715-1050	715 - Foundation	10	24-Nov-26	08-Dec-26
715-1060	715 - Above Grade Pipe & Supports	5	09-Dec-26	15-Dec-26
715-1075	715 - Blower Installation	15	12-Apr-27	30-Apr-27
715-1085	715 - Canopy	5	03-May-27	07-May-27
715-1090	715 - Electrical & I&C	15	10-May-27	28-May-27
720 - Dewatering Building		330	09-Apr-27	26-Jul-28
720-1001	720 - Overexcavation	10	09-Apr-27	22-Apr-27
720-1004	720 - Underslab Piping (Process & Plumbing)	10	28-May-27	11-Jun-27
720-1005	720 - Underslab Electrical	10	14-Jun-27	25-Jun-27
720-1010	720 - Install Spread Footing	15	28-Jun-27	19-Jul-27
720-1015	720 - Place Aggregate Sub-base	5	20-Jul-27	26-Jul-27
720-1020	720 - Slab-On-Grade	30	27-Jul-27	07-Sep-27
720-1050	720 - Above Grade Process Piping	20	08-Sep-27	05-Oct-27
720-1060	720 - Above Grade Electrical (Electrical Room)	40	06-Oct-27	01-Dec-27
720-1070	720 - PEMB	20	02-Dec-27	31-Dec-27
720-1080	720 - Dewatering Centrifuges	15	04-Jan-28	24-Jan-28
720-1082	720 - Crossover & Truck Loading Conveyors	15	25-Jan-28	14-Feb-28

Actual Work | Remaining Work | Critical Remaining Work | Milestone | Summary

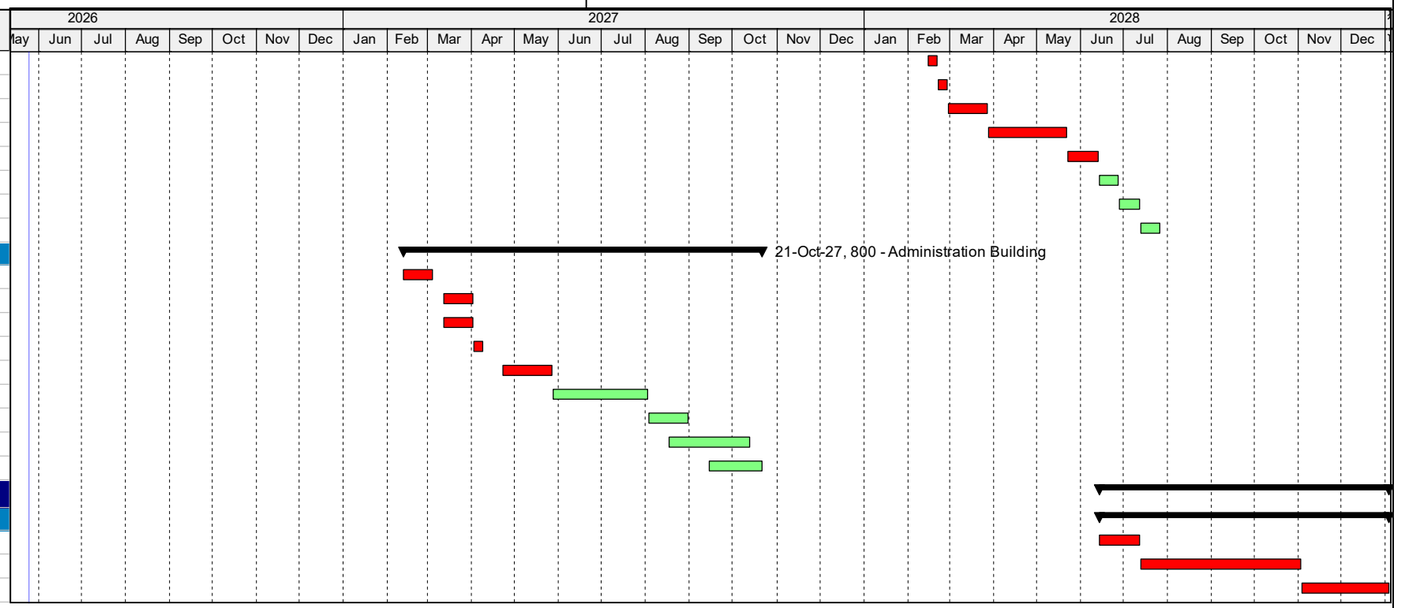
FM 1978 Water Reclamation Facility
Data Date:25-May-26
Print date:08-Jun-26 16:06

San Marcos WWTP

Project Schedule as of 25-May-26

BURNS McDONNELL

Activity ID	Activity Name	Original Duration	Start	Finish
720-1084	720 - Polymer Feed	5	15-Feb-28	21-Feb-28
720-1086	720 - Dewatering Feed Pumps	5	22-Feb-28	28-Feb-28
720-1090	720 - Misc. Metals	20	29-Feb-28	27-Mar-28
720-1100	720 - General Electrical and I&C	40	28-Mar-28	22-May-28
720-1105	720 - Electrical Gear Install	15	23-May-28	13-Jun-28
720-1110	720 - HVAC & Plumbing	10	14-Jun-28	27-Jun-28
720-1130	720 - Bridge Crane Installation	10	28-Jun-28	12-Jul-28
720-2000	720 - Building Finishes & Hardware (Doors, Fire Alarm Signs, Etc.)	10	13-Jul-28	26-Jul-28
800 - Administration Building		177	12-Feb-27	21-Oct-27
800-1010-2	800 - Overexcavation	15	12-Feb-27	04-Mar-27
800-1010	800 - Underslab Piping	15	12-Mar-27	01-Apr-27
800-1020	800 - Underslab Electrical	15	12-Mar-27	01-Apr-27
800-1025	800 - Place Aggregate Sub-base	5	02-Apr-27	08-Apr-27
800-1030	800 - Foundation	25	23-Apr-27	27-May-27
800-1040	800 - PEMB Installation	45	28-May-27	02-Aug-27
800-1060	800 - Interior Framing, Walls & Rough-In (MEP)	20	03-Aug-27	30-Aug-27
800-1070	800 - Interior Finishes & Hardware	40	17-Aug-27	12-Oct-27
800-1080	800 - Electrical Room	28	14-Sep-27	21-Oct-27
Startup & Commissioning		140	14-Jun-28	03-Jan-29
Start Up & Commissioning		140	14-Jun-28	03-Jan-29
COM-1000	Electrical Energization	20	14-Jun-28	12-Jul-28
COM-2000	Commissioning (Water Testing)	80	13-Jul-28	02-Nov-28
COM-3000	Start Up / Seeding	40	03-Nov-28	03-Jan-29



Actual Work | Remaining Work | Critical Remaining Work | Milestone | Summary

ATTACHMENT 1A-9 – SCHEDULE OF VALUES

APPLICATION AND CERTIFICATION FOR PAYMENT

APPLICATION NO:
APPLICATION DATE:
PERIOD TO:
CONTRACTOR'S PROJECT NO: 187533

A	B		C			D	E	F	G		H
ID	DESCRIPTION OF WORK		SCHEDULED VALUE	CHANGE ORDER VALUE	TOTAL ITEM VALUE	WORK COMPLETED	THIS PERIOD	MATERIALS PRESENTLY STORED (NOT IN D OR E)	TOTAL COMPLETED AND STORED TO DATE (D+E+F)	% (G ÷ C)	BALANCE TO FINISH (C - G)
1	**Phase 2 Engineering & Permitting**		$ 5,390,310.00	$ -	$ 5,390,310.00		$ -	$ -	$ -	0%	$ 5,390,310.00
2	Design Progress IFB to IFC - Fleming Pass		$ 92,339.00	$ -	$ 92,339.00		$ -	$ -	$ -	0%	$ 92,339.00
3	Design Progress IFB to IFC - Site Improvements		$ 922,172.00	$ -	$ 922,172.00		$ -	$ -	$ -	0%	$ 922,172.00
4	Design Progress IFB to IFC - GMP 1&2		$ 1,659,403.00	$ -	$ 1,659,403.00		$ -	$ -	$ -	0%	$ 1,659,403.00
5	Design Progress IFB to IFC - GMP 3		$ 786,396.00	$ -	$ 786,396.00		$ -	$ -	$ -	0%	$ 786,396.00
6	Engineering Services During Construction		$ 1,822,871.00	$ -	$ 1,822,871.00		$ -	$ -	$ -	0%	$ 1,822,871.00
7	Record Drawings - To be included in a future Contract Price Amendment			$ -	$ -		$ -	$ -	$ -	#DIV/0!	$ -
8	Water Reclamation Facility Operations Manual - To be included in a future Contract Price Amendment			$ -	$ -		$ -	$ -	$ -	#DIV/0!	$ -
9	Permitting		$ 107,129.00	$ -	$ 107,129.00		$ -	$ -	$ -	0%	$ 107,129.00
10	**General Conditions**		$ 4,806,181.00	$ -	$ 4,806,181.00		$ -	$ -	$ -	0%	$ 4,806,181.00
11	Mobilization		$ 389,058.00	$ -	$ 389,058.00		$ -	$ -	$ -	0%	$ 389,058.00
12	Bonds & Insurance		$ 799,936.00	$ -	$ 799,936.00		$ -	$ -	$ -	0%	$ 799,936.00
13	Construction General Conditions		$ 3,617,187.00	$ -	$ 3,617,187.00		$ -	$ -	$ -	0%	$ 3,617,187.00
14	Demobilization - To be included in a future Contract Price Amendment			$ -	$ -		$ -	$ -	$ -	#DIV/0!	$ -
15	**Fleming Pass Improvements**		$ 1,460,024.00	$ -	$ 1,460,024.00		$ -	$ -	$ -	0%	$ 1,460,024.00
16	Site Preparation/SWPPP	S310	$ 56,460.00	$ -	$ 56,460.00		$ -	$ -	$ -	0%	$ 56,460.00
17	Clearing & Grubbing	S310	$ 30,961.00	$ -	$ 30,961.00		$ -	$ -	$ -	0%	$ 30,961.00
18	Saw Cut and Demo Existing Asphalt for Tie-In Work	S310	$ 30,405.00	$ -	$ 30,405.00		$ -	$ -	$ -	0%	$ 30,405.00
19	Remove Existing Aggregate Road As Needed	S310	$ 37,008.00	$ -	$ 37,008.00		$ -	$ -	$ -	0%	$ 37,008.00
20	Restoration and Seeding	S310	$ 56,683.00	$ -	$ 56,683.00		$ -	$ -	$ -	0%	$ 56,683.00
21	Site Grading/Earthwork	S310	$ 178,047.00	$ -	$ 178,047.00		$ -	$ -	$ -	0%	$ 178,047.00
22	Road & Driveway Paving and Subgrade Prep	S310	$ 720,847.00	$ -	$ 720,847.00		$ -	$ -	$ -	0%	$ 720,847.00
23	Temporary Construction Access Road	S310	$ 15,641.00	$ -	$ 15,641.00		$ -	$ -	$ -	0%	$ 15,641.00
24	Stormwater Culverts	S310	$ 263,158.00	$ -	$ 263,158.00		$ -	$ -	$ -	0%	$ 263,158.00
25	Cattle Guard	S310	$ 19,549.00	$ -	$ 19,549.00		$ -	$ -	$ -	0%	$ 19,549.00
26	Install and Maintain Concrete Washout	S310	$ 4,785.00	$ -	$ 4,785.00		$ -	$ -	$ -	0%	$ 4,785.00
27	Traffic Control	S310	$ 41,695.00	$ -	$ 41,695.00		$ -	$ -	$ -	0%	$ 41,695.00
28	Permanent Signage	S310	$ 4,785.00	$ -	$ 4,785.00		$ -	$ -	$ -	0%	$ 4,785.00
29	**Water Reclamation Facility Construction**		$ 18,666,625.00	$ -	$ 18,666,625.00		$ -	$ -	$ -	0%	$ 18,666,625.00
30	010 - Site Planning		$ 5,622,699.00	$ -	$ 5,622,699.00		$ -	$ -	$ -	0%	$ 5,622,699.00
31	Install SWPPP BMPs	S100	$ 167,978.00	$ -	$ 167,978.00		$ -	$ -	$ -	0%	$ 167,978.00
32	SWPPP Removal	S100	$ 25,832.00	$ -	$ 25,832.00		$ -	$ -	$ -	0%	$ 25,832.00
33	Laydown Yard, Install	S100	$ 54,261.00	$ -	$ 54,261.00		$ -	$ -	$ -	0%	$ 54,261.00
34	Clear & Grub	S100	$ 54,261.00	$ -	$ 54,261.00		$ -	$ -	$ -	0%	$ 54,261.00
35	**Earthwork & Grading**			$ -	$ -		$ -	$ -	$ -	#DIV/0!	$ -
36	Strip & Stockpile Topsoil (SY)	S100	$ 82,690.00	$ -	$ 82,690.00		$ -	$ -	$ -	0%	$ 82,690.00
37	Rough grading	S100	$ 511,628.00	$ -	$ 511,628.00		$ -	$ -	$ -	0%	$ 511,628.00
38	Embankment (Fill from on-site material)	S100	$ 452,269.00	$ -	$ 452,269.00		$ -	$ -	$ -	0%	$ 452,269.00
39	Install Eathen Berms	S100	$ 54,261.00	$ -	$ 54,261.00		$ -	$ -	$ -	0%	$ 54,261.00
40	Install WW MH 09	S100	$ 111,120.00	$ -	$ 111,120.00		$ -	$ -	$ -	0%	$ 111,120.00
41	**Roadways**			$ -	$ -		$ -	$ -	$ -	#DIV/0!	$ -
42	**Prepare Subgrade & Geogrid - Perm Roadway**			$ -	$ -		$ -	$ -	$ -	#DIV/0!	$ -
43	Grade and Compact Subgrade Below Geogrid	S100	$ 198,907.00	$ -	$ 198,907.00		$ -	$ -	$ -	0%	$ 198,907.00
44	Install Geogrid	S100	$ 99,748.00	$ -	$ 99,748.00		$ -	$ -	$ -	0%	$ 99,748.00
45	**Compacted Subgrade - Perm Roadway**			$ -	$ -		$ -	$ -	$ -	#DIV/0!	$ -
46	Grade and Compact Subgrade	S100	$ 167,978.00	$ -	$ 167,978.00		$ -	$ -	$ -	0%	$ 167,978.00
47	**Contractor Staging Area**			$ -	$ -		$ -	$ -	$ -	#DIV/0!	$ -
48	Aggregate Surface	S100	$ 56,761.00	$ -	$ 56,761.00		$ -	$ -	$ -	0%	$ 56,761.00
49	**Fences & Gates**			$ -	$ -		$ -	$ -	$ -	#DIV/0!	$ -

APPLICATION AND CERTIFICATION FOR PAYMENT

APPLICATION NO:
APPLICATION DATE:
PERIOD TO:
CONTRACTOR'S PROJECT NO: 187533

A	B		C			D	E	F	G		H
ID	DESCRIPTION OF WORK		SCHEDULED VALUE	CHANGE ORDER VALUE	TOTAL ITEM VALUE	WORK COMPLETED	THIS PERIOD	MATERIALS PRESENTLY STORED (NOT IN D OR E)	TOTAL COMPLETED AND STORED TO DATE (D+E+F)	% (G ÷ C)	BALANCE TO FINISH (C - G)
50	Install Temp Fence	S100	$ 14,460.00	$ -	$ 14,460.00		$ -	$ -	$ -	0%	$ 14,460.00
51	Install Barb Wire Fencing	S100	$ 105,434.00	$ -	$ 105,434.00		$ -	$ -	$ -	0%	$ 105,434.00
52	**Stormwater**			$ -	$ -		$ -	$ -	$ -	#DIV/0!	$ -
53	Rip Rap/Block Mat	S100	$ 8,775.00	$ -	$ 8,775.00		$ -	$ -	$ -	0%	$ 8,775.00
54	ELB Storm Water Double Box Culvert 1	S100	$ 90,876.00	$ -	$ 90,876.00		$ -	$ -	$ -	0%	$ 90,876.00
55	ELB Storm Water Singel Box Culvert 1	S100	$ 42,890.00	$ -	$ 42,890.00		$ -	$ -	$ -	0%	$ 42,890.00
56	ELB Storm Water Singel Box Culvert 2	S100	$ 37,204.00	$ -	$ 37,204.00		$ -	$ -	$ -	0%	$ 37,204.00
57	Install Drainage Channels	S100	$ 54,261.00	$ -	$ 54,261.00		$ -	$ -	$ -	0%	$ 54,261.00
58	**Process Underground**			$ -	$ -		$ -	$ -	$ -	#DIV/0!	$ -
59	Furnish and Install UG 30" Plant Influent Gravity	S100	$ 1,760,010.00	$ -	$ 1,760,010.00		$ -	$ -	$ -	0%	$ 1,760,010.00
60	Furnish & Install UG 42" Plant Influent Gravity	S100	$ 204,593.00	$ -	$ 204,593.00		$ -	$ -	$ -	0%	$ 204,593.00
61	Furnish & Intall UG 48" Plant Influent Gravity	S100	$ 312,624.00	$ -	$ 312,624.00		$ -	$ -	$ -	0%	$ 312,624.00
62	Furnish & Install 6" Sanitary Gravity	S100	$ 122,491.00	$ -	$ 122,491.00		$ -	$ -	$ -	0%	$ 122,491.00
63	Furnish & Install Plant Influent Manholes	S100	$ 509,128.00	$ -	$ 509,128.00		$ -	$ -	$ -	0%	$ 509,128.00
64	Furnish & Install Sanitary Manholes	S100	$ 144,525.00	$ -	$ 144,525.00		$ -	$ -	$ -	0%	$ 144,525.00
65	**Stormwater Sedimentation Basin (North)**			$ -	$ -		$ -	$ -	$ -	#DIV/0!	$ -
66	Excavation (North Sedimentation Basin)	S100	$ 54,261.00	$ -	$ 54,261.00		$ -	$ -	$ -	0%	$ 54,261.00
67	Grading (North Sedimentation Basin)	S100	$ 20,146.00	$ -	$ 20,146.00		$ -	$ -	$ -	0%	$ 20,146.00
68	Slope Seeding & Stabilization (North Sedimentation Basin)	S100	$ 14,460.00	$ -	$ 14,460.00		$ -	$ -	$ -	0%	$ 14,460.00
69	**Stormwater Sedimentation Basin (Southeast)**			$ -	$ -		$ -	$ -	$ -	#DIV/0!	$ -
70	Excavation (Southeast Sedimentation Basin)	S100	$ 54,261.00	$ -	$ 54,261.00		$ -	$ -	$ -	0%	$ 54,261.00
71	Grading (Southeast Sedimentation Basin)	S100	$ 20,146.00	$ -	$ 20,146.00		$ -	$ -	$ -	0%	$ 20,146.00
72	Slope Seeding & Stabilization (Southeast Sedimentation Basin)	S100	$ 14,460.00	$ -	$ 14,460.00		$ -	$ -	$ -	0%	$ 14,460.00
73	150, 160 - Temporary Systems - Placeholders below, SOV to be mutually agreed at time of Owner Allowance Au		$ -	$ -	$ -		$ -	$ -	$ -	#DIV/0!	$ -
74	Temporary Systems - Temporary Pumps			$ -	$ -		$ -	$ -	$ -	#DIV/0!	$ -
75	Temporary Systems - Temporary Power to Rotary Lobe Pumps and Blowers			$ -	$ -		$ -	$ -	$ -	#DIV/0!	$ -
76	Temporary Systems - Temporary Power to TBD Submersible Pumps			$ -	$ -		$ -	$ -	$ -	#DIV/0!	$ -
77	Temporary Systems - Control and Communications Systems			$ -	$ -		$ -	$ -	$ -	#DIV/0!	$ -
78	Temporary Systems - Temporary Piping and Valves			$ -	$ -		$ -	$ -	$ -	#DIV/0!	$ -
79	Temporary Systems - Monthly Rental Charges			$ -	$ -		$ -	$ -	$ -	#DIV/0!	$ -
80	200 - Influent Pump Station		$ 5,319,181.00	$ -	$ 5,319,181.00		$ -	$ -	$ -	0%	$ 5,319,181.00
81	Excavation & Backfill	S350	$ 557,234.00	$ -	$ 557,234.00		$ -	$ -	$ -	0%	$ 557,234.00
82	Exterior Caisson Shell	S350	$ 1,121,427.00	$ -	$ 1,121,427.00		$ -	$ -	$ -	0%	$ 1,121,427.00
83	Interior Caisson Shell	S350	$ 1,121,427.00	$ -	$ 1,121,427.00		$ -	$ -	$ -	0%	$ 1,121,427.00
84	Seal slab/Plug Footing	S350	$ 369,169.00	$ -	$ 369,169.00		$ -	$ -	$ -	0%	$ 369,169.00
85	Structural Foundation	S350	$ 369,169.00	$ -	$ 369,169.00		$ -	$ -	$ -	0%	$ 369,169.00
86	Leak Test Caisson Shell	S350	$ 181,103.00	$ -	$ 181,103.00		$ -	$ -	$ -	0%	$ 181,103.00
87	Interior CIP Divider Walls	S330	$ 255,479.00	$ -	$ 255,479.00		$ -	$ -	$ -	0%	$ 255,479.00
88	Interior CIP Baffle Wall	S330	$ 255,479.00	$ -	$ 255,479.00		$ -	$ -	$ -	0%	$ 255,479.00
89	Interior CIP Column	S330	$ 153,748.00	$ -	$ 153,748.00		$ -	$ -	$ -	0%	$ 153,748.00
90	Suspended Slab w/Integral Beam (Slab on Grade)	S330	$ 205,864.00	$ -	$ 205,864.00		$ -	$ -	$ -	0%	$ 205,864.00
91	Grout Invert	S330	$ 28,672.00	$ -	$ 28,672.00		$ -	$ -	$ -	0%	$ 28,672.00
92	Access Hatches	S330	$ 49,518.00	$ -	$ 49,518.00		$ -	$ -	$ -	0%	$ 49,518.00
93	Install Tank Liner	S900	$ 508,366.00	$ -	$ 508,366.00		$ -	$ -	$ -	0%	$ 508,366.00
94	Interior Process Pipe	S330	$ 52,115.00	$ -	$ 52,115.00		$ -	$ -	$ -	0%	$ 52,115.00
95	Coat Interior Process Pipe	S900	$ 30,911.00	$ -	$ 30,911.00		$ -	$ -	$ -	0%	$ 30,911.00
96	Submersible Pumps Accessories Installation (guardrails, supports, etc.)	S330	$ 7,826.00	$ -	$ 7,826.00		$ -	$ -	$ -	0%	$ 7,826.00
97	Submersible Pump Grouting	S330	$ 7,826.00	$ -	$ 7,826.00		$ -	$ -	$ -	0%	$ 7,826.00
98	Submersible Pump Installation - Future			$ -	$ -		$ -	$ -	$ -	#DIV/0!	$ -
99	Electrical Rough-In	S2600	$ 43,848.00	$ -	$ 43,848.00		$ -	$ -	$ -	0%	$ 43,848.00
100	Electrical Pull & Terminate - Future			$ -	$ -		$ -	$ -	$ -	#DIV/0!	$ -

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ID	DESCRIPTION OF WORK		SCHEDULED VALUE	CHANGE ORDER VALUE	TOTAL ITEM VALUE	WORK COMPLETED	THIS PERIOD	MATERIALS PRESENTLY STORED (NOT IN D OR E)	TOTAL COMPLETED AND STORED TO DATE (D+E+F)	% (G ÷ C)	BALANCE TO FINISH (C - G)
101	Valve Pad - Excavation & Soil Improvements - Future			$ -	$ -		$ -	$ -	$ -	#DIV/0!	$ -
102	Valve Pad - Concrete - Future			$ -	$ -		$ -	$ -	$ -	#DIV/0!	$ -
103	Valve Pad - Process Piping, Valves & Instrumentation - Future			$ -	$ -		$ -	$ -	$ -	#DIV/0!	$ -
104	Valve Pad - Electrical - Future			$ -	$ -		$ -	$ -	$ -	#DIV/0!	$ -
105	310 - Headworks - To be included in Future Contract Price Amendment		$ -	$ -	$ -		$ -	$ -	$ -	#DIV/0!	$ -
116	320 - Odor Control - To be included in future Contract Price Amendment		$ -	$ -	$ -		$ -	$ -	$ -	#DIV/0!	$ -
126	420 - BNR Basin		$ 4,211,208.00	$ -	$ 4,211,208.00		$ -	$ -	$ -	0%	$ 4,211,208.00
127	Excavation and Soil Improvements	S330	$ 864,999.00	$ -	$ 864,999.00		$ -	$ -	$ -	0%	$ 864,999.00
128	Basin Slab	S330	$ 1,045,725.00	$ -	$ 1,045,725.00		$ -	$ -	$ -	0%	$ 1,045,725.00
129	Basin Exterior Walls	S330	$ 1,252,889.00	$ -	$ 1,252,889.00		$ -	$ -	$ -	0%	$ 1,252,889.00
130	Basin Interior Walls	S330	$ 1,042,207.00	$ -	$ 1,042,207.00		$ -	$ -	$ -	0%	$ 1,042,207.00
131	Coat Misc Items - GMP 1&2 Only	S900	$ 5,388.00	$ -	$ 5,388.00		$ -	$ -	$ -	0%	$ 5,388.00
132	Install Air Piping - Future			$ -	$ -		$ -	$ -	$ -	#DIV/0!	$ -
133	Fine Bubble Diffuser Installation - Future			$ -	$ -		$ -	$ -	$ -	#DIV/0!	$ -
134	Install Internal Recycle Piping - Future			$ -	$ -		$ -	$ -	$ -	#DIV/0!	$ -
135	Install Internal Recycle Pumps - Future			$ -	$ -		$ -	$ -	$ -	#DIV/0!	$ -
136	Electrical Rough-In - Future			$ -	$ -		$ -	$ -	$ -	#DIV/0!	$ -
137	Electrical Pull & Terminate - Future			$ -	$ -		$ -	$ -	$ -	#DIV/0!	$ -
138	Coat Process Piping - Future			$ -	$ -		$ -	$ -	$ -	#DIV/0!	$ -
139	Install Misc Metals - Walkways & Handrail - Future			$ -	$ -		$ -	$ -	$ -	#DIV/0!	$ -
140	Install Misc Metals - Stairs and Platforms - Future			$ -	$ -		$ -	$ -	$ -	#DIV/0!	$ -
141	Install Basin Lighting - Future			$ -	$ -		$ -	$ -	$ -	#DIV/0!	$ -
142	430 - Blower Pad - To be included in future Contract Price Amendment		$ -	$ -	$ -		$ -	$ -	$ -	#DIV/0!	$ -
152	440 - Electrical Building - To be included in future Contract Price Amendment		$ -	$ -	$ -		$ -	$ -	$ -	#DIV/0!	$ -
163	510 - Final Clarifier Splitter - To be included in future Contract Price Amendment		$ -	$ -	$ -		$ -	$ -	$ -	#DIV/0!	$ -
172	520 - Final Clarifiers - To be included in future Contract Price Amendment		$ -	$ -	$ -		$ -	$ -	$ -	#DIV/0!	$ -
181	520 - RAS-WAS Pump Station - To be included in future Contract Price Amendment		$ -	$ -	$ -		$ -	$ -	$ -	#DIV/0!	$ -
191	540 - Chemical Feed - To be included in future Contract Price Amendment		$ -	$ -	$ -		$ -	$ -	$ -	#DIV/0!	$ -
200	610 - Filters, UV & NPW - To be included in future Contract Price Amendment		$ -	$ -	$ -		$ -	$ -	$ -	#DIV/0!	$ -
211	710 - WAS Holding Tank		$ 3,513,537.00	$ -	$ 3,513,537.00		$ -	$ -	$ -	0%	$ 3,513,537.00
212	Excavation and Soil Improvements	S330	$ 520,492.00	$ -	$ 520,492.00		$ -	$ -	$ -	0%	$ 520,492.00
213	Holding Tank Slab	S330	$ 585,000.00	$ -	$ 585,000.00		$ -	$ -	$ -	0%	$ 585,000.00
214	Holding Tank Exterior Walls	S330	$ 699,434.00	$ -	$ 699,434.00		$ -	$ -	$ -	0%	$ 699,434.00
215	Holding Tank Interior Walls	S330	$ 597,010.00	$ -	$ 597,010.00		$ -	$ -	$ -	0%	$ 597,010.00
216	Pump Pad Slab	S330	$ 85,838.00	$ -	$ 85,838.00		$ -	$ -	$ -	0%	$ 85,838.00
217	Blower Pad Slab	S330	$ 84,965.00	$ -	$ 84,965.00		$ -	$ -	$ -	0%	$ 84,965.00
218	Install WAS blowers	S330	$ 96,419.00	$ -	$ 96,419.00		$ -	$ -	$ -	0%	$ 96,419.00
219	Install Air Piping	S330	$ 93,863.00	$ -	$ 93,863.00		$ -	$ -	$ -	0%	$ 93,863.00
220	Blower Pad Coatings	S900	$ 550.00	$ -	$ 550.00		$ -	$ -	$ -	0%	$ 550.00
221	Install Coarse Bubble Diffusers	S330	$ 54,628.00	$ -	$ 54,628.00		$ -	$ -	$ -	0%	$ 54,628.00
222	Install Pump Suction Piping & Telescoping Valves	S330	$ 160,200.00	$ -	$ 160,200.00		$ -	$ -	$ -	0%	$ 160,200.00
223	Install Pumps, Piping & Valves	S330	$ 165,253.00	$ -	$ 165,253.00		$ -	$ -	$ -	0%	$ 165,253.00
224	Pump Pad Coatings	S900	$ 27,443.00	$ -	$ 27,443.00		$ -	$ -	$ -	0%	$ 27,443.00
225	Temporary Electrical Rough-In	S2600	$ 139,927.00	$ -	$ 139,927.00		$ -	$ -	$ -	0%	$ 139,927.00
226	Temporary Electrical Pull & Terminate	S2600	$ 100,497.00	$ -	$ 100,497.00		$ -	$ -	$ -	0%	$ 100,497.00
227	Permanent Electrical Rough-In - GMP 2	S2600	$ 51,010.00	$ -	$ 51,010.00		$ -	$ -	$ -	0%	$ 51,010.00
228	Permanent Electrical Pull & Terminate - GMP 2	S2600	$ 51,008.00	$ -	$ 51,008.00		$ -	$ -	$ -	0%	$ 51,008.00
229	Permanent Electrical Rough-In - Future			$ -	$ -		$ -	$ -	$ -	#DIV/0!	$ -
230	Permanent Electrical Pull & Terminate - Future			$ -	$ -		$ -	$ -	$ -	#DIV/0!	$ -
231	Install Misc Metals - Walkways & Handrail - Future			$ -	$ -		$ -	$ -	$ -	#DIV/0!	$ -
232	Install Misc Metals - Stairs and Platforms - Future			$ -	$ -		$ -	$ -	$ -	#DIV/0!	$ -

APPLICATION AND CERTIFICATION FOR PAYMENT

APPLICATION NO:
APPLICATION DATE:
PERIOD TO:
CONTRACTOR'S PROJECT NO: 187533

A	B	C			D	E	F	G		H
ID	DESCRIPTION OF WORK	SCHEDULED VALUE	CHANGE ORDER VALUE	TOTAL ITEM VALUE	WORK COMPLETED	THIS PERIOD	MATERIALS PRESENTLY STORED (NOT IN D OR E)	TOTAL COMPLETED AND STORED TO DATE (D+E+F)	% (G ÷ C)	BALANCE TO FINISH (C - G)
233	Install Tank Lighting - Future		$ -	$ -		$ -	$ -	$ -	#DIV/0!	$ -
234	720 - Dewatering Building - To be included in future Contract Price Amendment	$ -	$ -	$ -		$ -	$ -	$ -	#DIV/0!	$ -
245	800 - Administration Building - To be included in future Contract Price Amendment	$ -	$ -	$ -	$ -	$ -	$ -	$ -	#DIV/0!	$ -
255	150 - Outfall - To be included in future Contract Price Amendment	$ -	$ -	$ -		$ -	$ -	$ -	#DIV/0!	$ -
261	System Integration - To be included in future Contract Price Amendment	$ -	$ -	$ -		$ -	$ -	$ -	#DIV/0!	$ -
267	**Procurement**	$ 4,884,878.00	$ -	$ 4,884,878.00		$ -	$ -	$ -		$ 4,884,878.00
268	PMP-002 - Rotary Lobe Pumps (Dewatering Feed)	$ 124,050.00	$ -	$ 124,050.00		$ -	$ -	$ -	0%	$ 124,050.00
269	PMP-003 - Submersible Pumps (Influent Pump Station)	$ 359,279.00	$ -	$ 359,279.00		$ -	$ -	$ -	0%	$ 359,279.00
270	BLW-001 - Screw Blowers/WAS & BNR	$ 700,291.00	$ -	$ 700,291.00		$ -	$ -	$ -	0%	$ 700,291.00
271	DIF-002 - Coarse Bubble Disc Diffusers/WAS Tank	$ 112,158.00	$ -	$ 112,158.00		$ -	$ -	$ -	0%	$ 112,158.00
272	PMP-004 - Submersible Propeller/Internal Recycle Pumps - To be included in Future Contract Price Amendment		$ -	$ -		$ -	$ -	$ -	#DIV/0!	$ -
273	PMP-005 - Submersible Pumps/Scum Pumps - To be included in Future Contract Price Amendment		$ -	$ -		$ -	$ -	$ -	#DIV/0!	$ -
274	PMP-006 - Self Priming Centrifugal Pumps/RAS/WAS Pumps - To be included in Future Contract Price Amendment		$ -	$ -		$ -	$ -	$ -	#DIV/0!	$ -
275	PMP-007 - Vertical Turbine Pumps/NPW Pump Station - To be included in Future Contract Price Amendment		$ -	$ -		$ -	$ -	$ -	#DIV/0!	$ -
276	SCR-001 - Perforated Plate Screens - To be included in Future Contract Price Amendment		$ -	$ -		$ -	$ -	$ -	#DIV/0!	$ -
277	GRT-001 - Grit Removal Equipment/Stack Trays - To be included in Future Contract Price Amendment		$ -	$ -		$ -	$ -	$ -	#DIV/0!	$ -
278	ODR-001 - Odor Treatment Equipment - To be included in Future Contract Price Amendment		$ -	$ -		$ -	$ -	$ -	#DIV/0!	$ -
279	MIX-001 - Large Bubble Mixing Equipment/Includes Compressor - To be included in Future Contract Price Amendment		$ -	$ -		$ -	$ -	$ -	#DIV/0!	$ -
280	DIF-001 - Fine Bubble Diffusers/BNR - To be included in Future Contract Price Amendment		$ -	$ -		$ -	$ -	$ -	#DIV/0!	$ -
281	DIS-001 - UV Disinfection Equipment - To be included in Future Contract Price Amendment		$ -	$ -		$ -	$ -	$ -	#DIV/0!	$ -
282	CEN-001 - Centrifuge Equipment - To be included in Future Contract Price Amendment		$ -	$ -		$ -	$ -	$ -	#DIV/0!	$ -
283	POL-001 - Polymer Feed - To be included in Future Contract Price Amendment		$ -	$ -		$ -	$ -	$ -	#DIV/0!	$ -
284	CON-001 - Conveyors/Includes Dump Gates - To be included in Future Contract Price Amendment		$ -	$ -		$ -	$ -	$ -	#DIV/0!	$ -
285	GTE-001 - Slide Gates - To be included in Future Contract Price Amendment		$ -	$ -		$ -	$ -	$ -	#DIV/0!	$ -
286	FLU-001 - Parshall Flume - To be included in Future Contract Price Amendment		$ -	$ -		$ -	$ -	$ -	#DIV/0!	$ -
287	VLV-001 - Valves - To be included in Future Contract Price Amendment		$ -	$ -		$ -	$ -	$ -	#DIV/0!	$ -
288	ELE-000 - Electrical Equipment Procurement Allocation	$ 3,589,100.00	$ -	$ 3,589,100.00		$ -	$ -	$ -	0%	$ 3,589,100.00
289	ELE-005 - Switchboards & Motor Control Centers - SOV will be determined after procurement is complete		$ -	$ -		$ -	$ -	$ -	#DIV/0!	$ -
290	ELE-006 - Variable Frequency Drives - SOV will be determined after procurement is complete		$ -	$ -		$ -	$ -	$ -	#DIV/0!	$ -
291	ELE-007 - Engine Generators Sets - SOV will be determined after procurement is complete		$ -	$ -		$ -	$ -	$ -	#DIV/0!	$ -
292	**Design Builder Contingency & Fee**	$ 4,197,685.00	$ -	$ 4,197,685.00	$ -	$ -	$ -	$ -	0%	$ 4,197,685.00
293	Design-Builder Contingency	$ 1,439,286.00	$ -	$ 1,439,286.00		$ -	$ -	$ -	0%	$ 1,439,286.00
294	Design-Builder Fee	$ 2,758,399.00	$ -	$ 2,758,399.00		$ -	$ -	$ -	0%	$ 2,758,399.00
295	**GMP Total**	**$ 39,405,703.00**	**$ -**	**$ 39,405,703.00**	**$ -**	**$ -**	**$ -**	**$ -**	**0%**	**$ 39,405,703.00**
295	**Owner Allowances and Contingency**	$ 1,850,413.00	$ -	$ 1,850,413.00	$ -	$ -	$ -	$ -	0%	$ 1,850,413.00
296	Owner Allowance #1 - Interim WW Management	$ 732,213.00	$ -	$ 732,213.00		$ -	$ -	$ -	0%	$ 732,213.00
297	Owner Contingency	$ 1,118,200.00	$ -	$ 1,118,200.00		$ -	$ -	$ -	0%	$ 1,118,200.00
298										
299	**Contract Total / Progress Totals**	**$ 41,256,116.00**	**$ -**	**$ 41,256,116.00**	**$ -**	**$ -**	**$ -**	**$ -**	**0%**	**$ 41,256,116.00**

ATTACHMENT 1A-10 – PRE-FINAL DESIGN DOCUMENTS

Phase 2A (formerly called GMP 1&2) 60% documents as referenced in Attachment 1A-4 – Work Description

CONTRACT DRAWINGS

GENERAL DRAWINGS:

DRAWING NO	DRAWING TITLE
000G001	COVER
000G002	INDEX
000G004	GENERAL LEGEND

CIVIL DRAWINGS:

DRAWING NO	DRAWING TITLE
002TP1C001	CIVIL LEGEND AND ABBREVIATIONS
002TP1C002	CIVIL GENERAL NOTES
002TP1C101	CIVIL SURVEY CONTROL PLAN
002TP1C102	CIVIL CONSTRUCTION ACCESS PLAN
002TP1C110	CIVIL STORM EXISTING DRAINAGE AREA PLAN
002YP1C111	CIVIL STORM PROPOSED DRAINAGE AREA PLAN
002TP1REF01	CIVIL REFERENCE DRAWING COSM STANDARD CONSTRUCTION NOTES
006TP1C501	CIVIL STANDARD DETAILS 1
006TP1C502	CIVIL STANDARD DETAILS 2
006TP1C503	CIVIL STANDARD DETAILS 3
1 006TP1C504	CIVIL STANDARD DETAILS 4
006TP1REF01	CIVIL REFERENCE DRAWING COSM STANDARD DETAILS 1
006TP1REF02	CIVIL REFERENCE DRAWING COSM STANDARD DETAILS 2
006TP1REF03	CIVIL REFERENCE DRAWING COSM STANDARD DETAILS 3
006TP1REF04	CIVIL REFERENCE DRAWING COSM STANDARD DETAILS 4
006TP1REF05	CIVIL REFERENCE DRAWING COSM STANDARD DETAILS 5
006TP1REF06	CIVIL REFERENCE DRAWING COSM STANDARD DETAILS 6
006TP1REF07	CIVIL REFERENCE DRAWING COSM STANDARD DETAILS 7
006TP1REF08	CIVIL REFERENCE DRAWING COSM STANDARD DETAILS 8
006TP1REF09	CIVIL REFERENCE DRAWING COSM STANDARD DETAILS 9
006TP1REF10	CIVIL REFERENCE DRAWING COSM STANDARD DETAILS 10
006TP1REF11	CIVIL REFERENCE DRAWING COSM STANDARD DETAILS 11
006TP1REF12	CIVIL REFERENCE DRAWING COSM STANDARD DETAILS 12
006TP1REF13	CIVIL REFERENCE DRAWING COSM STANDARD DETAILS 13
006TP1REF14	CIVIL REFERENCE DRAWING COSM STANDARD DETAILS 14
006TP1REF15	CIVIL REFERENCE DRAWING COSM STANDARD DETAILS 15
006TP1REF16	CIVIL REFERENCE DRAWING COSM STANDARD DETAILS 16
006TP1REF17	CIVIL REFERENCE DRAWING COSM STANDARD DETAILS 17
006TP1REF18	CIVIL REFERENCE DRAWING COSM STANDARD DETAILS 18
006TP1REF19	CIVIL REFERENCE DRAWING COSM STANDARD DETAILS 19
006TP1REF20	CIVIL REFERENCE DRAWING COSM STANDARD DETAILS 20
006TP1REF21	CIVIL REFERENCE DRAWING COSM STANDARD DETAILS 21
006TP1REF22	CIVIL REFERENCE DRAWING COSM STANDARD DETAILS 22
006TP1REF23	CIVIL REFERENCE DRAWING COSM STANDARD DETAILS 23
006TP1REF24	CIVIL REFERENCE DRAWING COSM STANDARD DETAILS 24
010TP1CD100	CIVIL OVERALL DEMOLITION PLAN
010TP1C101	CIVIL OVERALL SITE, GRADING, AND PIPING PLAN
010TP1C301	CIVIL ENLARGED SITE, GRADING, AND PIPING PLAN 1
010TP1C302	CIVIL ENLARGED SITE, GRADING, AND PIPING PLAN 2
010TP1C303	CIVIL ENLARGED SITE, GRADING, AND PIPING PLAN 3
010TP1C304	CIVIL ENLARGED SITE, GRADING, AND PIPING PLAN 4
010TP1C305	CIVIL ENLARGED SITE, GRADING, AND PIPING PLAN 5
010TP1C310	CIVIL SITE AND GRADING POINTS TABLE(S)
010TP1C311	CIVIL PIPING POINTS TABLE(S)
040TP1C101	CIVIL OVERALL EROSION AND SEDIMENT CONTROL PLAN
040TP1C301	CIVIL ENLARGED EROSION AND SEDIMENT CONTROL PLAN - WWTP SITE
040TP1C302	CIVIL ENLARGED EROSION AND SEDIMENT CONTROL PLAN - FLEMING PASS

STRUCTURAL DRAWINGS:

DRAWING NO	DRAWING TITLE
002S001	STRUCTURAL GENERAL NOTES SHEET 1
002S002	STRUCTURAL GENERAL NOTES SHEET 2
006S001	STRUCTURAL LEGEND
006S501	STRUCTURAL STANDARD DETAILS SHEET 1
006S502	STRUCTURAL STANDARD DETAILS SHEET 2
006S503	STRUCTURAL STANDARD DETAILS SHEET 3
006S504	STRUCTURAL STANDARD DETAILS SHEET 4
006S505	STRUCTURAL STANDARD DETAILS SHEET 5
006S506	STRUCTURAL STANDARD DETAILS SHEET 6
006S507	STRUCTURAL STANDARD DETAILS SHEET 7
200S101	INFLUENT PUMP STATION PLANS
200S102	INFLUENT PUMP STATION VALVE PAD PLAN AND SECTION
200S301	INFLUENT PUMP STATION SECTIONS AND DETAILS SHEET 1
200S302	INFLUENT PUMP STATION SECTIONS AND DETAILS SHEET 2
200S303	INFLUENT PUMP STATION SECTIONS AND DETAILS SHEET 3
420S102	BNR BASINS FOUNDATION PLAN
420S103	BNR BASINS TOP PLAN @ EL 614.00'
420S301	BNR BASINS SECTIONS SHEET 1
420S302	BNR BASINS SECTIONS SHEET 2
710S101	WAS HOLDING TANK FOUNDATION PLAN
710S102	WAS HOLDING TANK TOP PLAN @ EL 608.50'
710S103	WAS HOLDING TANK BLOWER CANOPY PLAN AND SECTION
710S301	WAS HOLDING TANK SECTIONS AND DETAILS

ELECTRICAL DRAWINGS:

DRAWING NO	DRAWING TITLE
000E001	ELECTRICAL LEGEND
006TP1E001	ELECTRICAL STANDARD DETAILS SHEET 1
100TP1E101	ELECTRICAL SITE PLAN AND AREA CLASSIFICATION
200E101	INFLUENT PUMP STATION PLAN
710TP1E101	FLEX TANK ELECTRICAL PLAN
710TP1E601	ELECTRICAL FLEX TANK ONE-LINE DIAGRAM

PROCESS DRAWINGS:

DRAWING NO	DRAWING TITLE
002D001	PROCESS LEGEND, ABBREVIATIONS, AND GENERAL NOTES
002TP1D601	PROCESS FLOW DIAGRAM PUMP AND HAUL
006D501	PROCESS STANDARD DETAILS SHEET 1
006D502	PROCESS STANDARD DETAILS SHEET 2
006D503	PROCESS STANDARD DETAILS SHEET 3
006D504	PROCESS STANDARD DETAILS SHEET 4
200D101	INFLUENT PUMP STATION OVERALL PLAN
200D102	INFLUENT PUMP STATION ENGLARGED WET WELL PLAN
200D103	INFLUENT PUMP STATION ENLARGED PIPING PLAN
200D301	INFLUENT PUMP STATION WET WELL SECTIONS I
200D302	INFLUENT PUMP STATION WET WELL SECTIONS II
200D303	INFLUENT PUMP STATION PIPING SECTIONS
420D101	UPPER BNR BASINS PLAN
420D102	LOWER BNR BASINS PLAN
420D103	BNR BASINS ISOMETRIC
420D301	BNR BASINS SECTIONS I
420D302	BNR BASINS SECTIONS II
710D101	WAS HOLDING TANK PLAN
710D102	ENLARGED PUMP PAD PLAN
710D103	ENLARGED BLOWER PAD PLAN
710D301	FLEX TANK SECTIONS SHEET 1
710D302	FLEX TANK SECTIONS SHEET 2

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THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF INTERIM REVIEW UNDER THE AUTHORITY OF: ADAM BOGUSCH
TEXAS NO: 85386 ON DATE: 04/06/26
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no.	date	by	ckd	description
0	03/31/26	AJH	AJH	GMP 1/2: ISSUED FOR BID
1	04/06/26	AJH	AJH	CIVIL SHEETS ADDED

BURNS McDONNELL
6200 BRIDGE POINT PARKWAY, SUITE 400
AUSTIN, TX 78730
Burns & McDonnell Engineering Co, Inc.
FIRM Reg. No. F-845

FM 1978 WATER RECLAMATION FACILITY

Index I

Drawing 000G002

LEGEND

EXISTING		NEW
●	1/2 INCH IRON ROD FOUND	
⊙	IRON PIPE FOUND	
⊗	1/2 INCH IRON ROD FOUND WITH ORANGE CAP "2633"	
⊠	1/2 INCH IRON ROD FOUND WITH YELLOW CAP "DAM 5348"	
⊠	1/2 INCH IRON ROD FOUND WITH ORANGE CAP "BAIN MEDINA"	
◉	1/2 ALUMINUM CAP FOUND STAMPED "DELAROSA-HERNANDEZ 2008'	
⊗	1/2 INCH IRON ROD FOUND WITH ORANGE "HAYES RPLS 5703"	
◉	1/2 INCH IRON ROD "MDS SURVEYING" FOUND	
◉	1/2 INCH IRON ROD FOUND WITH YELLOW CAP "WCR"	
⊗	1/2 INCH IRON ROD FOUND WITH YELLOW CAP "BYRN"	
○	1/2 INCH IRON ROD SET WITH YELLOW CAP "BASELINE CORP."	
△	CONTROL POINT SET	
⬡	POST	
	POWER POLE	
	ANCHOR GUY WIRE	
⊠	ELECTRIC METER	
	SIGN	
	MAILBOX	
GATE	GATE	
T	TELEPHONE PEDESTAL	
	TREE WITH TAG	
	CATTLE GUARD	
	WATER	
	CONCRETE PAVEMENT	
	ASPHALT PAVEMENT	
	AGGREGATE PAVEMENT	
	STRUCTURE	
	STRUCTURE (FUTURE)	
	LAYDOWN AREA	
	ROCK BERM	
	FLOOD 100 YEAR INTERIOR	
	STABILIZED CONSTRUCTION ENTRANCE	
	TIED CONCRETE BLOCK MAT	
	SOIL RETENTION BLANKET	
	EROSION CONTROL LOG	
	SILT FENCE	

LEGEND

EXISTING		NEW
P	PROPERTY LINE	
	DEED LINE	
	CHAINLINK FENCE	
	METAL FENCE	
// //	WOOD FENCE	
X X	WIRE FENCE	
	SECURITY FENCE	XXX
OHE	OVERHEAD UTILITY LINE	OHE
	TOE (TOPO)	
	TOP (TOPO)	
25	MAJOR CONTOUR	25
24	MINOR CONTOUR	24
	GRADING LIMITS	
	FLOWLINE	
	FLOOD 100 YEAR INTERIOR	
	FLOOD BUFFER	
	FLOOD QUALITY	
P/E	PERMANENT EASEMENT	
T/E	TEMPORARY EASEMENT	
ST	STORM SEWER	
SS	SANITARY SEWER	
SSFM	SANITARY SEWER FORCE MAIN	
INT	SANITARY SEWER INTERCEPTOR	
WL	POTABLE WATER	
NPW	NON-POTABLE WATER	
AIR	AIR	
CA	COMPRESSED AIR	
BBE	BNR BASIN EFFLUENT	
BBI	BNR BASIN INFLUENT	
BYPS	FILTER BYPASS	
FTI	FILTER INFLUENT	
FCE	FINAL CLARIFIER EFFLUENT	
FCI	FINAL CLARIFIER INFLUENT	
FOA	FOUL ODOR AIR	
GRE	GRIT EFFLUENT	
EFF	PLANT EFFLUENT	
INF	PLANT INFLUENT FORCE MAIN	
RAS	RETURN ACTIVATED SLUDGE	
SCM	SCUM	
UVE	UV EFFLUENT	
WAS	WASTE ACTIVATED SLUDGE	

ABBREVIATIONS:

@	-	AT
%	-	PERCENT
AGG	-	AGGREGATE
APPROX	-	APPROXIMATELY
ASPH	-	ASPHALT
ASTM	-	AMERICAN SOCIETY FOR TESTING AND MATERIALS (INTERNATIONAL)
BLDG	-	BUILDING
BOP	-	BOTTOM OF PIPE
BM#	-	BENCHMARK NUMBER
CAV	-	COMBINATION AIR VALVE
CCFRPM	-	CENTRIFUGALLY CAST FIBERGLASS REINFORCED POLYMER MORTAR
CL	-	CENTERLINE
CLR	-	CLEAR OR CLEARANCE
CONC	-	CONCRETE
CP#	-	CONTROL POINT NUMBER
Ø OR DIA	-	DIAMETER
DIP	-	DUCTILE IRON PIPE
DR	-	DIMENSION RATIO
DWG	-	DRAWING
E	-	EAST OR EASTING
EG	-	EXISTING GRADE
DND	-	DO NOT DISTURB
EL	-	ELEVATION
EOP	-	EDGE OF PAVEMENT
ESMT	-	EASEMENT
ETC	-	ETCETERA
EW	-	EACH WAY
EXIST	-	EXISTING
FF	-	FINISHED FLOOR
FG	-	FINISHED GRADE
FL	-	FLOWLINE
FT OR '	-	FOOT OR FEET
HDPE	-	HIGH DENSITY POLYETHYLENE
HP	-	HIGH POINT
ID	-	INSIDE DIMENSION OR DIAMETER
IN OR "	-	INCH
INCL	-	INCLUDED
INV	-	INVERT
JB	-	JUNCTION BOX
LF	-	LINEAR FEET
LP	-	LOW POINT
MAX	-	MAXIMUM
MH	-	MANHOLE
MIN	-	MINIMUM
MUTCD	-	MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (CURRENT VERSION)
N	-	NORTH OR NORTHING
NO OR#	-	NUMBER
OC	-	ON CENTER
OD	-	OUTSIDE DIMENSION OR DIAMETER
PP	-	POWER POLE
PC	-	POINT CIRCLE
PT	-	POINT TANGENT
PCC	-	PORTLAND CEMENT CONCRETE
PSI	-	POUNDS PER SQUARE INCH
PROP	-	PROPOSED
PVC	-	POLYVINYL CHLORIDE
R	-	RADIUS
RCB	-	REINFORCED CONCRETE BOX
RCP	-	REINFORCED CONCRETE PIPE
RD	-	ROAD
S	-	SOUTH
SDR	-	STANDARD DIMENSION RATIO
SS	-	SANITARY SEWER
STD	-	STANDARD
SWPPP	-	STORMWATER POLLUTION PREVENTION PLAN
TBD	-	TO BE DETERMINED
TOP	-	TOP OF PIPE
TOC	-	TOP OF CONCRETE
TYP	-	TYPICAL
UNO	-	UNLESS NOTED OTHERWISE
W	-	WEST
W/	-	WITH
WW	-	WASTEWATER

no.	date	by	ckd	description
0	04/03/26	PMW	JLG	GMP 1/2: ISSUED FOR BID

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BURNS McDONNELL
6200 BRIDGE POINT PARKWAY, SUITE 400
AUSTIN, TX 78730
Burns & McDonnell Engineering Co., Inc.
FIRM Reg. No. F-845

date	detailed
JANUARY 26, 2026	A. KADAM
designed	checked
P. WORLEY	J. GARDER

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY
CIVIL
LEGEND AND ABBREVIATIONS

project	contract
187533	

drawing **002TP1C001** rev. **0**

sheet of sheets
file 187533_002TP1C001.DWG

GENERAL NOTES:

1. THESE NOTES APPLY TO ONLY CIVIL DRAWINGS.
2. ALL EARTHWORK SHALL BE IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
3. UNDERGROUND FACILITIES, STRUCTURES, AND UTILITIES HAVE BEEN INDICATED BASED ON AVAILABLE SURVEYS AND RECORDS; THEREFORE, THEIR LOCATIONS MUST BE CONSIDERED APPROXIMATE ONLY. IT IS POSSIBLE THERE MAY BE OTHER UTILITIES, THE EXISTENCE OF WHICH ARE PRESENTLY NOT KNOWN OR SHOWN. IT IS SUBCONTRACTOR'S RESPONSIBILITY TO DETERMINE THEIR EXISTENCE AND EXACT LOCATION AND TO AVOID DAMAGE THERETO. ALL EXISTING UTILITIES WITHOUT ELEVATION DATA SHALL BE ASSUMED TO HAVE AN UNKNOWN ELEVATION.
4. SUBCONTRACTOR SHALL EXPOSE ALL UTILITIES TO VERIFY LOCATION AND ELEVATION PRIOR TO CONSTRUCTION. LOCATION AND ELEVATION OF ALL UTILITIES SHALL BE RECORDED ON RECORD DRAWINGS.
5. ALL DIMENSIONS ARE INDICATED IN FEET (FT) UNLESS NOTED OTHERWISE.
6. CALLOUTS, COORDINATES, AND DIMENSIONS ARE POINTED TO OR MEASURED TO CENTERLINE, EDGE OF PAVEMENT/GRAVEL, BACK OF CURB, CENTER OF STRUCTURE, OR OUTSIDE FACE OF WALL, UNLESS INDICATED OTHERWISE.
7. SUBCONTRACTOR SHALL BE RESPONSIBLE FOR ALL LAYOUT AND ALL ELEVATION CONTROL FOR THE PROJECT.
8. PROPOSED ELEVATIONS INDICATED ON THE PLANS ARE FOR TOP OF FINAL GRADE, PAVEMENT, OR STRUCTURE UNLESS INDICATED OTHERWISE.
9. WHERE CONSTRUCTION CROSSES STREAMS, DRAINAGE CHANNELS, OR NATURAL OR MAN-MADE SWALES, FLOW SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION. ALL AREAS DISTURBED DURING CONSTRUCTION SHALL BE REVEGETATED AS SOON AS THE GRADING WORK IS COMPLETED AND MAINTAINED UNTIL FINAL STABILIZATION IS ACHIEVED.
10. IF THE PLANS INDICATE WETLANDS OR JURISDICTIONAL WATERWAYS, DISTURBANCE OF THESE AREAS IS STRICTLY LIMITED TO WHAT IS SHOWN ON THE PLANS AND ALLOWED BY PERMITS. IF SUBCONTRACTOR SUSPECTS WETLANDS OR JURISDICTIONAL WATERWAYS EXIST AND ARE NOT ADDRESSED BY A PERMIT OR SHOWN ON THE PLANS, THE DESIGN-BUILDER SHALL BE NOTIFIED PRIOR TO ANY DISTURBANCE BEING MADE.
11. SUBCONTRACTOR SHALL NOTIFY UTILITY LOCATOR A MINIMUM OF 72 HOURS PRIOR TO ANY EXCAVATION ACTIVITIES.
12. SUBCONTRACTOR SHALL NOTIFY THE DESIGN-BUILDER A MINIMUM OF 5 WORKING DAYS IN ADVANCE OF ANY NECESSARY UTILITY OUTAGES.
13. PROVIDE UNIFORM SLOPE BETWEEN INDICATED ELEVATIONS SO THAT ALL AREAS SLOPE TO DRAIN AND NO STORM WATER IS PONDED ON SITE BOTH DURING AND AFTER CONSTRUCTION.
14. TREES AND SHRUBS WITHIN THE CONSTRUCTION LIMITS WHICH ARE IN DIRECT CONFLICT WITH PROPOSED CONSTRUCTION SHALL BE TRIMMED AND/OR REMOVED AND DISPOSED OF BY SUBCONTRACTOR WITH OWNER'S APPROVAL. TREES AND SHRUBS WHICH ARE NOT IN DIRECT CONFLICT SHALL BE SAVED AND PROTECTED FROM DAMAGE.
15. ALL FLOW LINES TO REMAIN THAT ARE DISTURBED BY CONSTRUCTION ACTIVITIES SHALL BE REPAIRED TO MATCH FLOW LINES PRIOR TO DISTURBANCE.
16. IN THE EVENT THAT CULTURAL RESOURCES ARE ENCOUNTERED DURING CONSTRUCTION ALL CONSTRUCTION SHALL CEASE AT THE LOCATION UNTIL THE REGULATORY AGENCIES ARE NOTIFIED AND A QUALIFIED ARCHAEOLOGIST CAN ASSESS THE SIGNIFICANCE OF THE FINDING. SUBCONTRACTOR SHALL NOTIFY DESIGN-BUILDER IMMEDIATELY.

EARTHWORK NOTES:

1. ALL EXCESS MATERIAL RESULTING FROM EARTHWORK OPERATIONS SHALL BE REMOVED AND DISPOSED OF BY SUBCONTRACTOR, OR PLACED IN AREAS ONSITE AS APPROVED BY THE DESIGN-BUILDER.
2. FINISH GRADES SHOWN ON THE DRAWINGS REFER TO TOP OF TOPSOIL, FOUNDATION, OR PAVEMENT. ALLOW FOR THICKNESS OF TOPSOIL, CONCRETE, ROCK, ETC. WHEN ESTABLISHING SUBGRADE ELEVATIONS.

no.	date	by	ckd	description
0	04/03/26	PMW	JLG	GMP 1/2: ISSUED FOR BID

NOT FOR CONSTRUCTION

THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF INTERIM REVIEW UNDER THE AUTHORITY OF: PATRICK WORLEY TEXAS NO: 131904 ON DATE: 04/03/26 IT IS NOT TO BE USED FOR CONSTRUCTION OR PERMIT PURPOSES.

BURNS McDONNELL
6200 BRIDGE POINT PARKWAY, SUITE 400
AUSTIN, TX 78730
Burns & McDonnell Engineering Co., Inc.
FIRM Reg. No. F-845

date	detailed
JANUARY 26, 2026	A. KADAM
designed	checked
P. WORLEY	J. GARDER

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY
CIVIL
GENERAL NOTES

project	contract
187533	

drawing **002TP1C002** rev. **0**

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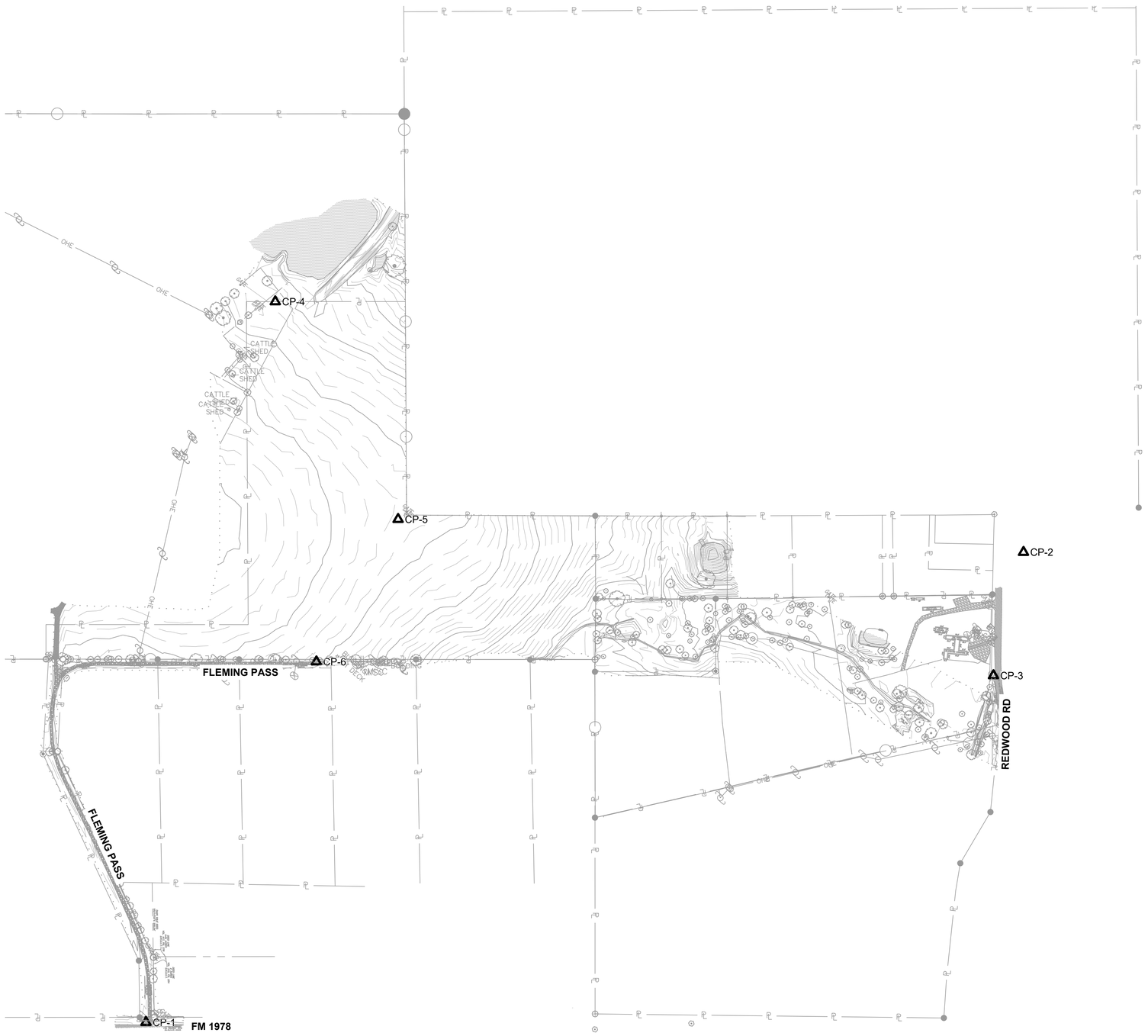

GENERAL SURVEY NOTES:

1. **TOPOGRAPHIC SURVEY WAS PERFORMED BY:**
   BASELINE CORP.
   TXSURV F-10030200
   190 S SEGUIN AVE
   NEW BRAUNFELS, TX 78130
   830) 606-3913
   BASELINE.DCCM.COM

   MCGRAY & MCGRAY LAND SURVEYORS, INC.
   TBPELS SURVEY FIRM #10095500
   3301 HANCOCK DRIVE #6
   AUSTIN, TX 78731
   (512) 451-8591

2. **FIELD DATA WAS OBTAINED FROM:**
   JULY 10 TO JULY 16, 2024
   JULY 26 AND JULY 29, 2024
   AUGUST 9 AND 13, 2024
   SEPTEMBER 18, 2024
   FEBRUARY 10, 2025
   MARCH 5, 2025

3. **VERTICAL DATUM:**
   NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88), GEOID TX G18.

4. **HORIZONTAL DATUM:**
   TEXAS COORDINATE SYSTEM, NORTH AMERICAN DATUM OF 1983 (NAD83) (NA2011) EPOCH 2010.00, TEXAS SOUTH CENTRAL ZONE 4204, IN GRID COORDINATES. TO CONVERT FROM GRID TO GROUND COORDINATES, APPLY A SURFACE ADJUSTMENT FACTOR OF 1.00013 (RECIPROCAL OF 0.999870016898).

PROJECT CONTROL (GRID COORDINATES)

POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
1	13842080.52	2311230.54	611.42	CP+ MAG IN ASPH
2	13845308.78	2312432.65	560.40	CP+ MAG IN ASPH
3	13844920.19	2312636.62	555.62	GPS+IRSC 5/8 MM CONTROL
4	13844246.66	2309917.14	TBD (NOTE 1)	1/2" IRON BAR (NOTE 1)
5	13843962.96	2310733.98	TBD (NOTE 1)	1/2" IRON BAR (NOTE 1)
6	13843406.32	2310847.92	TBD (NOTE 1)	1/2" IRON BAR (NOTE 1)

TABLE NOTES:

1. DESIGN BUILDER SHALL ESTABLISH CONTROL POINT APPROXIMATELY AT LOCATION PROVIDED. DESIGN BUILDER SHALL PROVIDE ELEVATION OF CONTROL POINT.

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AUSTIN, TX 78730
Burns & McDonnell Engineering Co., Inc.
FIRM Reg. No. F-845

date	detailed
JANUARY 26, 2026	A. KADAM
designed	checked
P. WORLEY	J. GARDER

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY
CIVIL
SURVEY CONTROL PLAN

project	contract
187533	

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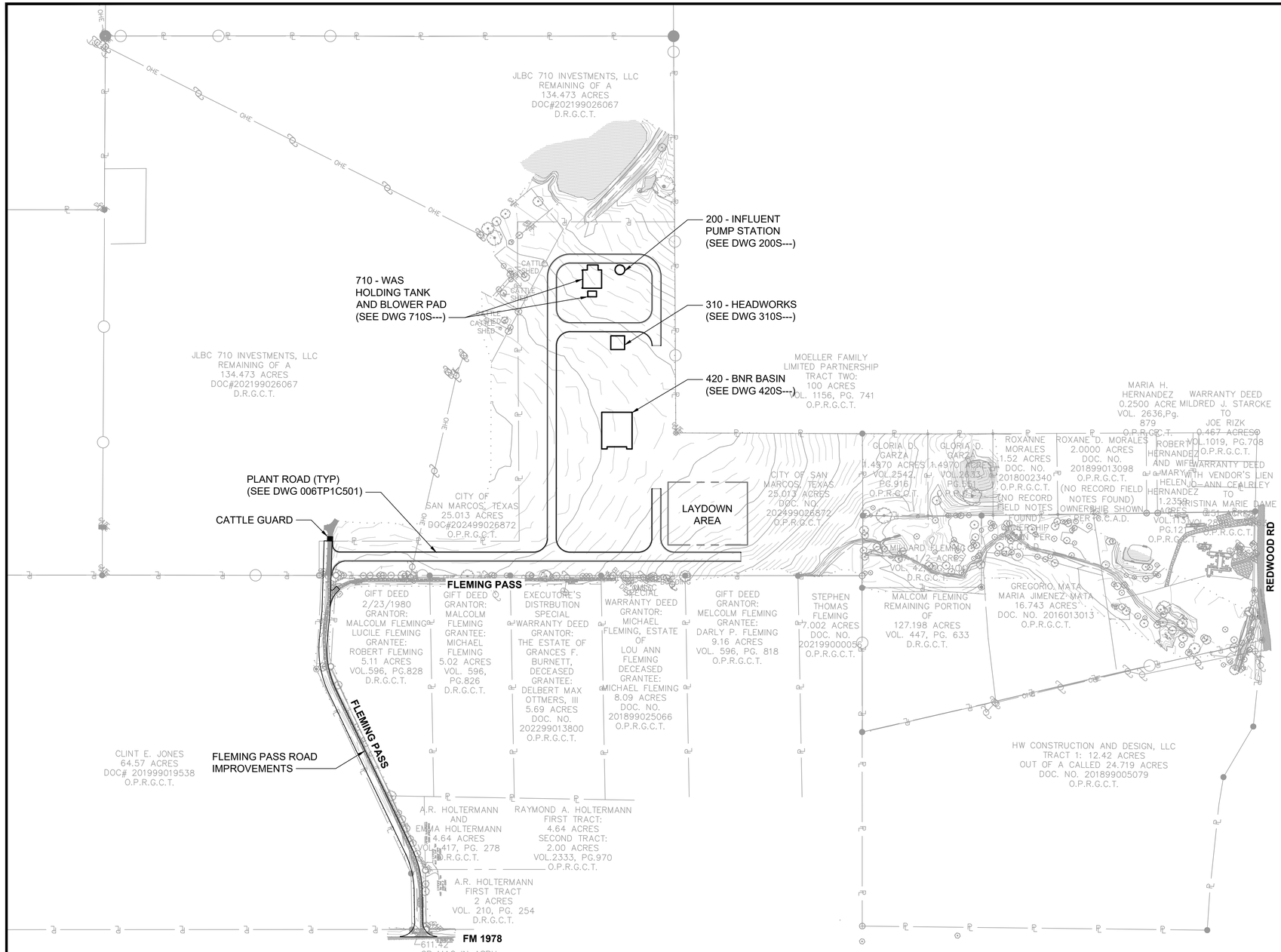

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AUSTIN, TX 78730
Burns & McDonnell Engineering Co., Inc.
FIRM Reg. No. F-845

date	detailed
JANUARY 26, 2026	A, KADAM
designed	checked
P. WORLEY	J. GARDER

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY

CIVIL

CONSTRUCTION ACCESS PLAN

project	contract
187533	

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DISREGARD THESE SHEETS. THEY WILL BE REVISED AND SUBMITTED WITH GMP-3 TO REFLECT THE PROPOSED STORMWATER DETENTION BASINS

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AUSTIN, TX 78730
Burns & McDonnell Engineering Co., Inc.
FIRM Reg. No. F-845

date	detailed
JANUARY 26, 2026	K. SHARMA
designed	checked
P. WORLEY	J. GARDER

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY
CIVIL
STORM EXISTING DRAINAGE AREA PLAN

project	contract
187533	

drawing **002TP1C110** rev. **0**

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DISREGARD THESE SHEETS. THEY WILL BE REVISED AND SUBMITTED WITH GMP-3 TO REFLECT THE PROPOSED STORMWATER DETENTION BASINS

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6200 BRIDGE POINT PARKWAY, SUITE 400
AUSTIN, TX 78730
Burns & McDonnell Engineering Co., Inc.
FIRM Reg. No. F-845

date	detailed
DECEMBER 4, 2025	K. SHARMA
designed	checked
P. WORLEY	J. GARDER

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY
CIVIL
STORM PROPOSED DRAINAGE AREA PLAN

project	contract
187533	

drawing **002TP1C111** rev. **0**

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CITY OF SAN MARCOS
DEVELOPMENT SERVICES
CONSTRUCTION REQUIREMENTS AND NOTES

Revised Date: 5-22-2024
The following City of San Marcos (COSM) requirements supersede, as a minimum requirement, any and all non "redline" comments, specifications, or details listed on the plan.

Plan Review and Revisions

1. The owner, contractor and representatives are responsible for complying with the most current local, state and federal laws, rules and ordinances.

2. The COSM review does not authorize any violations of details, specification, standard products ordinances or laws of the COSM. No code violations listed, drawn, or described in this plan, and/or otherwise installed, manufactured or built, are "approved" by the COSM.

3. A copy of COSM approved plans and any approved revisions bearing a review seal from the COSM must be available on-site at all times.

4. During construction, plan changes or revisions must be uploaded into MyPermitNow for staff review prior to the changes being made. Final Certificate of Occupancy or Certificate of Acceptance will NOT be issued until all changes have been documented and approved.

5. COSM adopted codes with local amendments:

International Building Code - 2021
International Energy Conservation Code - 2021
International Plumbing Code - 2021
National Electric Code - 2020
International Mechanical Code - 2021
International Fire Code - 2021
International Fuel Gas Code - 2021
San Marcos Land Development Code (as amended)
Smart Code (as amended)
Code SMTX (as amended)
International Property Maintenance Code - 2021
International Swimming Pool and Spa Code - 2021
International Residential One/Two Family Code - 2021
International Existing Building Code - 2021

Accessory-Permits and Activities

1. Neither the review of these plans, nor the issuance of a Building or Site Plan Permit, authorizes accessory permits. The owner is responsible for completing the following accessory permits or activities: (verify with the department or division listed below, even if depicted within this plan by the design professional):

- Addressing (Permit Center)
- Assignment of Building Numbers (Permit Center)
- Controlled Access Gates (Fire Prevention)
- Any Fire Protection System [fire alarm, sprinkler, hood system] (Fire Prevention)
- Any Storage Tanks (Fire Prevention)
- High Piled Combustible Stock (Fire Prevention)
- Any Sign and/or Sign Standard (Permit Center)
- Irrigation (Permit Center)
- Fence (Permit Center)
- On-Site Sewage Facilities (OSSF's) (Code Compliance)
- Commercial Swimming pools, spa, & Public Interactive Water Feature (PIWF's) (Permit Center/Code Compliance)
- Backflow Prevention Devices (Water Department)
- Street Closure/Traffic Control Plans (Public Services-Transportation Division)
- Right of Way "ROW" (Public Services-Transportation Division)
- EPA or TCEQ permits (State/Permit Center)
- Floodplain Permit (Permit Center)

2. Any portion of work, including, but not limited to, traffic control, which lies in Texas Department of Transportation (TxDOT), Union Pacific Railroad (UPRR) or County property or right of way, shall be permitted and approved by that authority. All required permits shall be secured by the owner or contractor from COSM and any other appropriate authority. A copy of all permit must be on site and available to City Inspector on request.

3. Contractor shall notify the Engineering Department (512-393-8130) and setup a consultation with Engineering Inspector at least 2 weeks before connection with the City water/wastewater system.

4. Contractor shall submit a road closure permit application and setup a consultation with Engineering Inspector Engineering Department (512-393-8130) at least 2 weeks before any lane or road closure.

General Construction Notes

1. Pre-Construction Meeting - Site and/or Building contractor(s) is/are responsible for scheduling a pre-construction meeting with COSM inspector(s) by contacting the Permit Center (512-805-2630) prior to any site work, including demolition. For Public Improvement Construction Projects (PICP's) contact the Engineering Department at (512-393-8130) at capital_imp_info@sanmarcostx.gov.

2. Site Requirements - The general contractor, owner, and subcontractors are responsible for maintaining a safe and clean work site.

3. Any reference in this section to water, wastewater, electric or other public utility is meant to refer to the utility of certification or Authority Having Jurisdiction.

4. Pre-Construction Video - A video in Windows media format or equivalent of the complete site conditions for all **Public Improvement Construction Projects** (and as requested for Site Plan Projects) is required prior to construction. Provide a copy to the COSM upon request.

5. Inspections - Inspections can be scheduled with the respective divisions by contacting them at:

Building Inspections	www.mypermitnow.org
Fire Prevention/Inspections	www.mypermitnow.org
Site Final Inspections	sitefinal@sanmarcostx.gov
Engineering Inspections	512-393-8130
PICP Inspections	512-393-8130
Code Compliance	512-393-8440 (Food, Pool permits, etc...)

6. Trash - Approved trash containment must be provided for each lot under construction. Commercial solid waste haulers servicing construction sites must hold a permit from the Community Enhancement Initiatives Manager and are subject to commercial solid waste hauler fees.

7. Open Burning - Burning is prohibited in the COSM limits.

8. Blasting - Blasting is prohibited in the COSM limits.

9. Construction Noise-Construction noise, declared a nuisance under COSM ordinance, is not permitted between 9:00 p.m. and 7:00 a.m.

10. Weekend and Holiday work - Weekend and Holiday work is not allowed within a public right- of- way without prior approval.

11. Facilities - Maintained portable bathroom facilities must be provided with a minimum of one bathroom unit per one and two family residential lots. All construction sites are required to provide one bathroom unit per ten construction persons on the job.

12. Access - Temporary access driveways on the job site (aka stabilized construction entrances/exits) must comply with the current City detail, including curb protection. No mud, rock, or debris permitted on any off site roadway. The general contractor and/or owner are responsible for immediately removing any debris on roadways caused by construction.

13. Combustible Construction -An all-weather surfaced roadway and working fire hydrant(s) are required to be installed on property prior to the construction of combustible material. Road base alone is not acceptable.

14. Safety - The general contractor, subcontractors and the owner are responsible for maintaining a safe construction operation at all times. All federal OSHA and state details, as well as local codes, shall be adhered to during the construction phase.

15. Address - The site, separate buildings, electrical disconnects, and/or temporary construction trailers must have an address visible from the street or roadway.

16. Required Postings - All COSM and State permits must be posted facing the street or roadway (where practical). Permanent marker is not an approved marking device.

17. Form Survey Requirements- Prior to requesting a foundation inspection by the Building Inspector, a Form Survey must be completed by a State Registered Land Surveyor validating building location to COSM setback requirements.

18. Floodplain Elevation Certificates - Where and when required, a "Building Under Construction" Elevation Certificate must be completed by a State Registered Land Surveyor (or State Registered Engineer or Architect) on FEMA form expiring Nov 2018 and submitted to the Permit Center at least 36 hours prior to foundation pouring to allow time for review and acceptance. A Land Surveyor's "Finished Construction" Elevation Certificate must also be submitted to and accepted by the Floodplain Administrator before Temporary "Certificate of Occupancy" will be issued.

19. If any geologic or manmade environmental feature is discovered during construction, notify Texas Commission on Environmental Quality (TCEQ) and the COSM Development Services within 24 hours or as soon as practicable. The contractor is required to provide compliance documentation as applicable.

20. EPA/TCEQ - Any required EPA or TCEQ permit(s) is/are separate permit(s) and the responsibility of the contractor. Provide a copy of such permit(s) to the Permit Center.

21. Abandoned wells must be capped or properly abandoned according to the Administrative Rules of the Texas Department of Licensing and Regulation (TDLR), 16 Texas Administrative Code (TAC), Chapter 76. A plugging report must be submitted (by a licensed water well driller) to the TDLR Water Well Drillers Program, Austin Texas. If a well is intended for use, it must comply with 16 TAC.

22. Any tree 9" in diameter or larger at 4.5' above natural grade is considered "regulated", Please refer to the LDC and technical manuals for tree survey, preservation and mitigation requirements. Also refer to the Design & Construction Guide for the tables and tree protection standard details as noted in #25.

23. All product submittals for Public Improvements Construction Projects shall be submitted to the COSM (after approval by the Design Engineer) in PDF format and approved by the COSM prior to construction.

24. Prior to COSM acceptance of the project, all graded and disturbed areas are to be at least 70% re-vegetated with no large bare areas (greater than 3' diameter) in accordance with COSM and project specifications.

25. On the COSM's Design & Construction Guide webpage, located under Engineering & Capital Improvements, the following documents can be found: These Development Construction Requirements and Notes, Detail Design Criteria, Specifications and Details, Standard Product List, Modification to Austin/TxDOT Standard Specifications, Tree Preservation and Mitigation Tables, Landscape Calculation Table, Parking Table.

26. TX 811(611) must be used to locate all existing utilities for the contractor. Once locates are provided, it is the contractor's responsibility to retain these locations. Repeat locates within 14 days will be charged to the contractor.

27. Appropriate erosion controls and tree protection measures shall be in place prior to any site disturbance.

28. Fire extinguisher is required on all construction sites. Minimum of one per site, per floor at each stairwell or each storage shed. 2A10BC minimum size (51bs).

29. Standpipe system required for any construction over 30 feet in height. Required to maintained within one floor of top construction floor. Approved lighted stairway access required.

30. Construction site required to be kept clean, travel paths clear and stored combustible pile spread out.

31. Fire watches are required to be approved prior to implementing (does not apply for hot work). (Fire Prevention at 512-393-8480)

32. Hot work permit(s) required as per Chapter 38 of Fire Code.

33. If building is designed with an automatic sprinkler system, the system must be installed, inspected and operational before occupying building (includes furniture and staff).

34. All work in the right-of-way or COSM easement will be constructed and restored in accordance to current COSM details and specifications.

Public Rights-of-Way

1. Where there is a conflict between the drawings and the COSM specifications and details, the more stringent shall apply. In no case is a contractor or owner authorized to construct, build or develop in contrast with adopted COSM codes, standards or details.

2. Location of existing lines is approximate. The contractor shall verify the location and elevation of utilities prior to beginning construction. Conflicts with the proposed work should be brought to the attention of the Engineer of Record and the project inspector immediately. It shall be the contractor's responsibility to repair any damages made as a result of construction at the contractor's expense.

3. The contractor shall not attempt to determine locations by scaling from plans. While every attempt has been made to prepare these plans to scale, the Engineer of record should be consulted if clarifications are needed.

4. Emergency Telephone Numbers (numbers may change - contractor should verify numbers)

Tx 811 (formerly DigTess)	811
Police - Fire - EMS	911
TX DOT	512-353-1061
Century Telephone	512-754-5223
Southwestern Bell	1-800-464-7928
Gas Company	1-800-427-7142
Spectrum	855-578-5500
Grande	800-218-5725
University	512-245-2108 and/or 245-2508
Pedernales Electric	888-554-4732
Bluebonnet Electric	800-949-4414
SM Electric Utilities	512-393-8313
SM Water/WW Utilities	512-393-8010

5. The contractor is responsible for acquiring any temporary construction easements for the project. Documentation shall be provided to the Permit Center.

6. The contractor shall be responsible for relocating any COSM water and wastewater utility lines and service taps where required. The contractor shall be responsible for relocating any COSM traffic facilities where required at the contractor's expense.

7. Contractor shall keep driveways open and accessible during construction. Underground utilities crossing commercial driveways shall be installed such that a minimum 10' traffic lane is kept open at all times. Spoilage material shall not be mounded more than 18" high adjacent to a driveway or intersection.

8. No construction operation relative to installation of utilities, including stockpiling of excavated materials, shall be permitted within the limits of existing pavements carrying traffic on state highways or COSM roads and streets unless specifically authorized in writing by the respective Authority Having Jurisdiction.

9. The contractor shall develop and submit a traffic control plan, which will show both daytime and nighttime operations during various phases of construction. The plan must be submitted to mypermitnow.org for review at least 14 days before construction begins. The plan must be approved before construction begins. The contractor shall designate a person who will be accessible on a 24-hour basis and responsible for the maintenance of the traffic control devices. This 24-hour contact number must be posted visible to the street on the job site and provided to the Public Services-Transportation Division. The contractor is responsible for furnishing the traffic control devices described in the plan and all costs associated with installation, maintenance and removal.

10. Any damage caused to any existing COSM water/wastewater, or storm sewer infrastructure will be repaired by the contractor to the satisfaction of the COSM at the contractor's expense prior to the Certificate of Occupancy or Certificate of Acceptance being issued.

11. When work is performed on private property or easements, all lawn grass, shrubbery, flowers, site utilities (including irrigation systems), trees and fences in the way of the work shall be removed, protected and replaced to their original condition and position upon completion of the work. All property monuments disturbed during construction shall be restored by a Registered Professional Land Surveyor at the contractor's expense.

12. The contractor must provide a Proof of Destination and truck route documents for trucks used to deliver or remove material or spoils from the job site upon request by inspectors.

13. All valves, manholes, SMEU electrical facilities and other appurtenances must remain accessible to COSM crews AT ALL TIMES during construction. These appurtenances shall also be raised to final grade, if within the project limits.

14. All assets constructed within the COSM's right-of-way must be submitted to the COSM with GPS coordinates at the end of each project. Coordinates will be submitted for all assets (including directional changes, valves, manholes, format, on the NAO 1983 State Plane Texas South Central FIPS 4204 Feet Coordinate System. All coordinates will be submitted in grid units. The required file type for coordinate data submission is *txt format.

15. The right-of-way will be kept clean at all times. Daily and sometimes more frequent sweeping may be required. A citation will be issued if the right-of-way is not kept clean. Do NOT wash, sweep or otherwise cause construction soil or debris to be deposited into any storm water drainage or conveyance system.

16. The Owner shall coordinate temporary relocation of mailboxes with the San Marcos Postmaster. Final location shall be in accordance with the local post office requirements.

17. All permanent pavement markings should be Type I and Type II per COSM specifications and details.

18. Any traffic changes, including signs, signals and/or pavement markings shall be the responsibility of the contractor.

19. All Material Testing shall follow the schedule below:

CITY OF SAN MARCOS TESTING SCHEDULE	
Description:	*Rate:
Soils:	
Standard Proctor - Trench Backfill	Per Material Source
Standard Proctor - Raw Subgrade	Per Material Source or Street
Densities - Trench Backfill**	Per 200 LF Pipe per lift
Densities - Cement Stabilizer	Per 200 LF Pipe
Backfill Densities - Raw	Per 100 LF Street per lift
Subgrade** Densities - Driveways	Per 5 Driveways
Base:	
Sieve Analysis	Per 300 LF Street
Atterbergs Limits	Per 300 LF Street
Modified Proctor	Per Material Change
Densities - Compacted Base**	Per 300 LF Street per lift
Wet Ball Mill Test	Per Material Source
Triaxial Test	Per Material Source
Hot-Mix Asphalt Concrete (HMAC):	
Extraction, Sieve Analysis	Per 500 Tons or Day
Lab Density & Stability	Per 500 Tons or Day
Theoretical Density (Rice Method)	Per 500 Tons or Day
Temperature - During Lay-Down	Continuous as Needed
Thickness - In Place	Per 300 LF Street
% Air Voids - In Place	Per 300 LF Street
% Theoretical Density - In Place	Per 300 LF Street

CITY OF SAN MARCOS TESTING SCHEDULE	
Description:	*Rate:
Concrete: (Unconfined Compression, 7, 14 & 28 Day)	
Curb and Gutter	Per 1000 LF C&G
Sidewalk	Per 4000 SF
Driveway	Per 2500 SF
Curb Inlets	Per 10 Inlets
Air, Slump & Compression - In Place	Per exposed structure
Slump & Compression -In Place	Per underground structure

* The above testing rates are only anticipated guidelines. The COSM reserves the right to require at owner's expense additional testing at the COSM's discretion.
** Testing must be conducted during backfill operations
*** Density will be per COSM details.

Erosion Control and Stormwater Management

1. It is unlawful for any general contractor, subcontractor or owner to allow or cause to be allowed, erosion of material from a construction site.

2. Appropriate erosion controls and tree protection measures shall be in place prior to any site disturbance. Site work permitted by a Site Plan Permit and/or a Demolition Permit cannot begin until erosion control and tree protection measures are in place.

3. All construction-related vehicle parking and activity (including employee personal vehicles and delivery vehicles) must be located within the Limits of Construction, with appropriate controls, or designated parking/access on APPROVED surfaces outside the Limits of Construction.

4. Certain erosion control measures identified by the COSM are to be employed to prevent erosion; however, these are only minimum standards. See construction details on Design & Construction Guide webpage, located under Engineering & Capital Improvements.

5. In the event of unusual site conditions, proximity to any water bodies and/or weather related events, more stringent requirements may be necessary (on-site or off) to maintain erosion and sedimentation control.

6. The owner or their designee is responsible for all changes, upgrades and continued maintenance of all erosion control and storm water management features at all times.

7. Erosion control measures and storm water management practices will be inspected by the COSM prior to and during the construction process:

Engineering Inspections is responsible for the inspection of Public Improvements Construction Projects (PICP) and infrastructure in the ROW to the property line or easement, excluding sidewalks and drive ways as noted under the driveway and sidewalk section.

Planning/Development Services is responsible for the inspection of all residential and commercial construction.

8. All designs to prevent the erosion of soil and the transport of sediment and debris from the construction site, or surrounding areas disturbed by construction shall, be maintained by the contractor during construction.

9. All streets adjacent to the project site must be kept clean of mud, rocks, trash, and building debris at all times. Daily or more frequent sweeping may be necessary, including the street center/turn lane and gutters. During muddy conditions, clean vehicle tires before leaving the site and/or remove mud, dust and dirt from public streets regularly throughout the day; sweep roads as soon as possible. Or prevent vehicles from leaving the site during muddy conditions. Migration of material or sediment from the site will require daily cleanup of paved streets and of drainage areas impacted by onsite or offsite construction. The contractor is required to take any necessary measures to prevent the migration of dust into the air due to construction activities.

10. All storm drain inlets within 200 feet of any permitted construction area must be protected per City detail (refer to #4 above).

11. Dewatering operations must use SWPPP-specified methods only. If such methods are only general or not applicable, pump from the top of the pool of water (rather than the bottom) and discharge to a vegetated, upland area (away from waterbodies or drainage) or use another type of filtration prior to discharge EVERY TIME. Refer to the EPA 2017 Construction General Permit, Section 2.4, as applicable.

12. The contractor or owner must have a designated person responsible for continuous (24 hours a day/7 days a week) monitoring of erosion control measures to ensure compliance with all federal, state, and local laws and regulations.

13. Do NOT wash, sweep or otherwise cause construction soil or debris to be deposited into any storm water drainage or conveyance system.

14. COSM MS4- Projects with a disturbed area of 1 to <5 acres must submit a signed, certified Small Construction Site Notice (CSN) to the COSM through MyPermitNow prior to construction activity starting. Projects with disturbed area of 5+ acres must submit a signed, certified Notice of Intent (NOI) to TCEQ; they must also submit the signed certified NOi and Large CSN received from TCEQ to the COSM through MyPermitNow prior to construction activity starting. COSM is the MS4 operator; these submissions to the COSM meet the required initial notification to the MS4 operator. CSN must be displayed at a construction site in public view prior to the commencement of construction activities.

15. Contractor shall provide qualified personnel to perform SWPPP inspections on projects equal to 1 acre or greater. Qualified personnel shall have CISEC, CESSWI, or equivalent certification approved by the MS4.

16. Qualified personnel shall inspect the construction site at least once every seven calendar days. A project-specific SWPPP must be prepared in accordance with the requirements of the Construction General Permit and shall be designed and signed by a licensed professional engineer (Texas) with competences in this area as required by Texas Engineering Practice Act Section 137 and/or a Certified Professional in Erosion and Sedimentation Control (CPESC). The SWPPP must be onsite at all times and shall be made available to the City of San Marcos upon request.

Water Utility Notes - *The requirements stated in most current version of the Water Distribution System Design Criteria Technical Manual shall supersede these notes if they conflict.*

1. All taps to the COSM water system for private property shall be metered.

2. When a tap is proposed on an existing Asbestos Cement (AC) pipe the contractor will replace the AC pipe segment with an approve PVC pipe per City Standard Product List (SPL). If the proposed tap is less than 24 inches from an AC pipe joint the replacement of the AC pipe will require addition segments to ensure adequate tap and joint separation. New pipe will be connected to the existing AC pipe with and wide range coupling adaptor per City SPL.

3. A list of accepted metering devices can be found on the engineering webpage under SPL WW-144. All metering devices shall be located on public right-of-way in easement.

4. All water utility lines leading to private property (except some authorized small domestic water lines) shall be provided with a testable back flow prevention device approved by the AWWA and the COSM. See detail.

5. The back-flow prevention device must be located as close as possible to the public right-of- way on private property.

6. A backflow prevention device with a low-flow indicator is required on all dedicated fire lines as per COSM details.

7. Any bypass to a backflow prevention device must have a testable back flow prevention device at least equivalent to the primary line approved by the AWWA and the COSM.

8. It is the responsibility of the owner and contractor to verify the type and size of the backflow prevention device with the COSM's Water Services (512)393-8010, for the property served, prior to construction.

9. Accepted Metering Devices - See Standard Product List WW-144

10. Accepted Utility Line Types (verify use with Inspector)

Use	Pipe Material	[1] Pipe Sizes	[2] SPL
Service lines	Copper Tubing	1"	WW-613
Service lines	Polyethylene Tubing	1"	WW-65
Service lines	PVC	2"	WW-587
Service lines	PVC	4",6",8",12"	WW-308
Fire Hydrant Lead	DI	6"	WW-27
[3] Distribution lines	PVC	8" or 12"	WW-308 or WW-308A
[3] Distribution lines	DI	8" or 12"	WW-27 or WW-27F
Transmission lines	PVC	16" or 24"	WW-308C
Transmission lines	DI	16" or 24"	WW-27 or WW-27F

Note 1
If the required pipe size is not listed; then install the next larger size listed and reduce to the needed size at the meter per the COSM details. See COSM details for more information.

Note 2
The COSM Standard Products List (SPL) can be found on the engineering webpage.

Note 3
The minimum distribution system line size is eight (8) inches, with the exception of short Cul-de-Sacs as indicated in the City's Water Distribution System Design Criteria Technical Manual

11. Private property fire hydrants shall be RED - Public fire hydrants shall be factory coated aluminum based silver paint. No pre-owned hydrants permitted.

12. All utility lines shall be tested after all appurtenances (hydrants, sampling ports, valves, etc.) are installed complete in place and located at final grade. All utility lines shall be tested from gate valve to gate valve at 200 psi for 10 minutes and @ 150 psi for 2 hours. A fire line dedicated for a fire protection system shall be tested @ 200 psi for 2 hrs.

13. A licensed underground installer certified by the Texas Commission on Fire Protection must perform underground fire line installation (Fire Sprinkler System). Most plumbers and utility contractors do not meet this criteria! Please verify before construction.

14. COSM to be given 48-hour notice (required) prior to all testing of utility lines. COSM inspection required for all utility lines.

Public

All utility taps, line installations, extensions, or adaptations in the public right-of- way, up to and including the metering device, for all Public Improvement Construction Projects will be inspected by the Engineering Inspector.

Private

- All domestic water line installations, extensions, or adaptations on public or private property for all Site Plan Permits, including the valve, and meter will be inspected by a Building Inspector.

  Private utility lines utilized by any fire protection system (fire line), or utility combo line will be inspected by the Fire Prevention Office.

- All backflow prevention devices will be reviewed by the Backflow Prevention Manager (Public Services-Water Division) prior to installation.

15. All backflow prevention devices must be tested by a State licensed/certified back flow prevention assembly tester. Test reports shall be on a form as prescribed by the COSM-Public Services Water Division. All testers submitting inspection results must be registered prior to testing devices by the -Public Services Water Division. A copy of the test results are to be submitted to the COSM-Public Services Water Division and the COSM Inspector prior to activation of water service. A copy of the backflow test is to be attached to the back-flow prevention device that was inspected and/or tested.

16. All water lines leading to private property must provide a bacteriological test to the inspector noted in the inspections section above. All bacteriological samplings must be certified within 20 days of project acceptance. On all dead-end lines and lines not yet tied into a water system, an automatic flush valve shall be installed with an approved water meter. After the pressure tests and bacteriological samples have passed, the Contractor must give notice to the Engineering Inspector for activation of the device.

17. Fire hydrants must be placed or moved to finished elevation after installation per detail 511S-17-SM. Finished elevation is 18" to 24" from the center of the lowest connection to the adjacent grade.

18. Fire hydrant is rejoined within 100 feet of the Fire Department Connection (FDC) is building is equipped with a fire sprinkler system.

19. Fire hydrants are required to have a clear area of 5 feet. No plants, trees or obstacles allowed except as impact protection outline by Fire Code

20. Fire hydrants are required to be marked with a blue reflective marker in the roadway 6" to 10" off center of the roadway towards the hydrant. On corner lot installation, both roadways are required to be marked.

21. The underground contractor must submit a report (on company letterhead) to fireplan@sanmarcostx.gov indicating that the fire line is complete and has been flushed of all debris.

22. All fire hydrants that have not been inspected or flushed are considered "out of service" and are required to have a black plastic wrap covering the hydrant.

23. COSM will not perform the tie-in of a public service line to a private line.

24. It is the responsibility of the owner or contractor to tie to the COSM's line from the right-of-way or public easement to the private property line. It is the licensed plumber/utility contractor responsibility to maintain proper slope and connection of system to the public connection.

25. Fire hydrants capable of producing the required GPM (based on construction type) must be located within 500 foot of the most remote portion of the building using accessible surfaced roadway for measurement.

26. Fire hydrants must be operational prior to beginning combustible construction.

27. All valves in a COSM right-of-way will be operated by COSM personnel only. The contractor may not operate any COSM owned valve. The general contractor will be fined if a water valve is operated without express written consent of the Water Utility, regardless of who operated the valve.

28. Only temporary water meters approved by the COSM are authorized for use on any fire hydrant (public or private).

29. Temporary meters may be relocated from one hydrant to another only by Water- Waste/Water personnel.

30. A fine will be imposed on operators using fire hydrants without meters, with unapproved meters, or failing to use approved backflow prevention or air gap protection.

31. Thrust blocks are not permitted. All fittings shall be mechanically restrained. Bell joints shall be mechanically restrained in accordance with the Engineer of Record's specifications based on site conditions. A joint restraint table, sealed by the Engineer of Record must be submitted with each set of plans. If a joint restraint table is not available, all joints must be mechanically restrained.

32. The service address must be posted and visible (as per COSM specifications) from the street prior to the installation of the meter as per Chapter 38 of local ordinances.

33. Disinfection sample taps shall be installed at proper locations (not more than 1000-foot intervals) along public water lines.

Wastewater - *The requirements stated in most current version of the Wastewater Collection System Design Criteria Technical Manual shall supersede these notes if they conflict.*

1. Required Equipment - The following are the acceptable materials for the type of lines or connections shown:

Public Sewer Lines - SDR 26 in the COSM right of way (as a minimum). See SPL WW227 &WW-227A

Private Sewer Lines - Schedule 40 or SDR 26 Approved connections - See SPL WW-354

2. Inspection

Engineering Inspections is responsible for inspection of all utility taps, line installations, extensions, and adaptations on all Public Improvement Construction Projects. See 510.3(26) Quality Testing for Installed Pipe-of the Modifications of Austin Specifications for moredetails.

- 4-psi minimum pressure test on lines
- Lines must be flushed immediately prior to the TV test
- TV test on all public lines (copy of video to Engineering Inspections)
- Mandrel test required 30 days after installation

Building Inspections is responsible for inspection of all utility taps, service laterals, and private lines on all Site Preparation Projects and all residential and commercial construction.

- Low-pressure air test with 5 PSI on all lines
- Force mains; 5 psi over working pressure with minimum of 50 psi, for 1 hour

3. All sewer lines shall be tested after all appurtenances are located at final grade.

4. All services must be six inch minimum and must have clean-outs; dual services shall have clean- outs on each line located no less than six feet apart at the property line. See detail 520s- 1-SM & 520S-3-SM for more details and TCEQ specifications.

5. All manholes to be cored (not chiseled) and lined with products from the Standard Products List. See specification 506.5F. Pipe connection to existing manholes and junction boxes for more details.

6. All manholes shall be tested per specification 506.6 prior to lining. All manholes are to be lined per SPL 511.

7. The COSM will not perform the tie-in of lines to privately owned and maintained lines or clean- outs. It is the licensed plumber/utility contractor responsibility to maintain proper slope, connection and drainage of system to the public connection.

8. Pipe stub-outs must be provided and located in manholes to facilitate future expansion.

9. All commercial property must have a wastewater sampling port installed per the COSM's sample port detail 520-4B-SM, and wastewater collection system standard design criteria. The wastewater sampling port must not be located in a drive-thru, traffic lane, or driveway access area.

Driveways and Sidewalks

1. All sidewalks and driveway approaches will be inspected by the COSM.

Engineering Inspections will inspect the following items:
- All Commercial project driveway approaches and sidewalks
- Any new, extension or addition to a drive on a existing property (Driveway Permit or Infill New Residential)
- All new subdivision work inclusive of the street, curb, curb cut ramps to a public street, sidewalk and driveway access installed during initial construction prior to COSM acceptance of subdivision
- All Public Improvement Construction Projects

Building Inspections will inspect the following:
- All sidewalk construction and driveway access in development "build-out" after acceptance of subdivision by the COSM.

2. Meters, valves, or other obstructions are not permitted in sidewalks or driveways. All meters must be located in a public right-of-way or easement given by the property owner (and legally recorded).

3. Meters and other utility obstructions must be relocated by and at the expense of the own e r or contractor.

4. Driveway access grade at sidewalk cannot exceed 2%.

5. All sidewalks and driveways shall meet applicable TAS standards.

Public Street Construction

1. All new street construction in public right-of-way and easements will be inspected by the Engineering Inspectors.

2. All street lights shown on the approved construction plans shall be active prior to project acceptance. If street light service is to be in the COSM's name, contact San Marcos Electric Utility, (512) 393-8300

3. Flexible Base & Sub-grade: Will follow the City specification noted in the 200: Series Subgrade & Base Construction.

4. Cutback Asphaltic material (Prime Coat) shall be applied to the completed base course and allowed to set 24 hours before paving the roadway. An Emulsified Asphalt Tack Coat can be used in lieu of the prime coat and/or placed on the prime coat.

5. Asphalt must be at a temperature between 250° F and 350° F when discharged from the mixer and compacted using steel-wheel rollers, vibratory rollers and pneumatic-tire rollers.

6. The contractor or their testing technician shall check the density of the compacted asphalt at regular intervals. Samples of the asphalt shall be taken as the asphalt leaves the hopper of the paving machine before compaction and cores shall be taken at these sampling locations. A minimum of 3 samples shall be taken daily unless the total volume is determined to be small enough to warrant taking only one sample.

Electric Utility Notes

1. Electrical service will be provided in accordance with SMEU "Rules and Regulations" and "Line Extension Policy" within the PUC designated SMEU service area.

2. Electric Service in San Marcos Electric Utility (SMEU) Service Territory:

A. For non-emergency service, Contact SMEU 48 hours in advance to schedule electric service connection for new service or disconnection/reconnection for modified service.
   i. For Emergency Electric Service contractors may disconnect and reconnect temporary electric service without advanced notice. Contractor must contact SMEU within 24 hours to make permanent electric service connection.

B. SMEU must receive notification from the COSM Electrical Inspector that the Customer's electrical installation has passed final electrical inspections before electric service is connected by SMEU personnel.

C. SMEU has the right to deny service connection for any identified electrical hazard.

3. For plan review of projects requiring electric service from San Marcos Electric Utility (SMEU), a minimum of the following items must be provided to SMEU by the property owner or contractor: a completed Electric Service Application, a set of customer drawings including plat drawings showing all easements, scaled elevation drawings for any structures that exceed a single story, and a total connected load estimate (including service voltage requirements)
Contact San Marcos Electric Utility at 512-393-8300 for detailed plan review submittal requirements.

4. All services shall have a single disconnecting means in an approved location on the exterior or outside of the building served.

5. All electric disconnecting means and meters shall be assessable.

6. At the time of Phase 2 inspection, the meter sockets shall be labeled with 1" x 2" digitally printed vinyl stickers. Disconnect panel(s) shall be labeled with 2" x 4" digitally printed vinyl stickers. Panel must have address numbers, number of panel (ex. 2 of 4) and location of next disconnect panel. Both doors and meter socket must have permanent labeling affixed before SMEU will install meters. SMEU may deny meter connection if the required labeling is not present.

7. Panel and socket markings are not allowed to be paint or marker.

8. The service mast shall have at least two points of attachment to the building. One point of attachment must be within 12 inches of the service equipment. The service equipment may not be used to meet this requirement.

9. If electric overhead power lines exist in the project area, Texas Law Article 1436c, prohibits all activities in which persons or equipment may come within six (6) feet of energized overhead power lines and Federal Regulations, Title 29, Part 1910.180(i) and Part 1926.550(a)(15) require a minimum of 10 feet from these facilities. Where Contractor must work near overhead power lines, contact the service provider for the lines to be de-energized and/or moved at Contractor's expense. For non-emergency work, contact SMEU 48 hours in advance to schedule lines to be de-energized or moved.

10. Contact the local service provider for information on their specific installation requirements

San Marcos Electric Utility(SMEU)	512-393-8300
Pedernales Electric Cooperative	888-554-4732 #7525
Bluebonnet Electric Cooperative	800-842-7708
(Ask for Lockhart engineering dept.)	

NOTE: This document is not meant or designed to be an all-inclusive document. The function of this 'requirements' document is to provide information on issues identified by the COSM inspection staff based on daily field operations and common issues. It is the intent of this document to facilitate the construction process in common overlapping areas between COSM departments and divisions and private contractors. In all cases, contractors, subcontractors and owners are responsible for knowing and utilizing the state, federal, or COSM codes and laws where applicable. No code violations are "approved". COSM signed or reviewed plans are not authorization to violate codes, laws, or ordinances. A copy of plans bearing a seal from Building Inspections and/or the Permit Center is required to be available on-site at all times. Any changes or revisions to these plans must first be submitted to the COSM by the design professional for review and written authorization. A review seal from the COSM must be affixed to these revised plans and they must be available on- site at all times.

REFERENCE DRAWING

no.	date	by	ckd	description
0	04/03/26	PMW	JLG	GMP 1/2: ISSUED FOR BID

NOT FOR CONSTRUCTION

THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF INTERIM REVIEW UNDER THE AUTHORITY OF: PATRICK WORLEY
TEXAS NO: 131904 ON DATE: 04/03/26
IT IS NOT TO BE USED FOR CONSTRUCTION OR PERMIT PURPOSES.

BURNS McDONNELL
6200 BRIDGE POINT PARKWAY, SUITE 400
AUSTIN, TX 78730
Burns & McDonnell Engineering Co., Inc.
FIRM Reg. No. F-845

date	detailed
SEPTEMBER 19, 2025	A. KADAM
designed	checked
P. WORLEY	J. GARDER

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY
CIVIL
REFERENCE DRAWING
COSM STANDARD CONSTRUCTION NOTES

project	contract
187533	

drawing **002TP1REF01** rev. **0**

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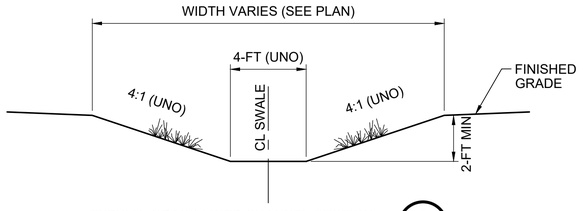

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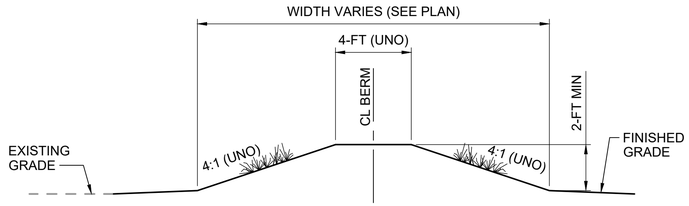
NOT TO SCALE



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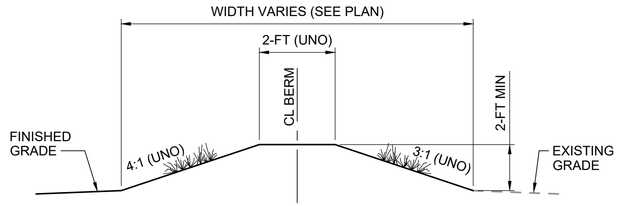

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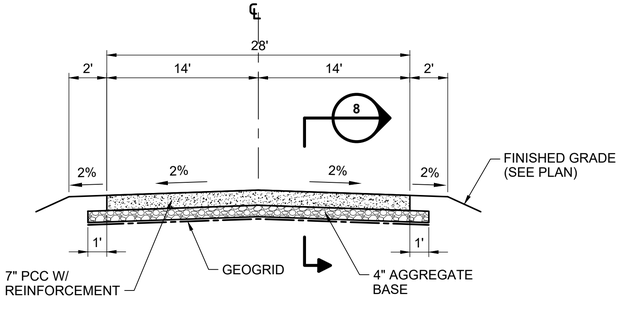

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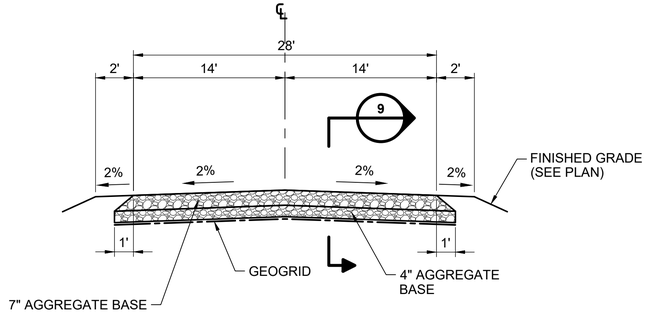

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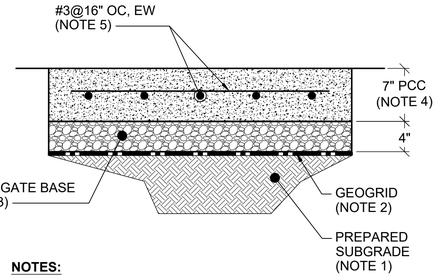

NOTES:

1. SUBGRADE SHALL BE PREPARED PER SECTION 31 20 50.
2. GEOGRID SHALL BE TENSAR NX850 OR APPROVED EQUAL, INSTALLED PER MANUFACTURER INSTRUCTIONS.
3. AGGREGATE BASE SHALL BE PER TXDOT STANDARD SPECIFICATION ITEM 247 GRADE 1-2, TYPE A OR D, PLACED PER SECTION 31 20 50.
4. PCC SHALL HAVE A MIN 28-DAY COMPRESSIVE STRENGTH OF 3,500 PSI.
5. REINFORCING SHALL BE GRADE 60 STEEL PER ASTM A615.

TYPICAL CONCRETE PAVEMENT SECTION (8 / C501)
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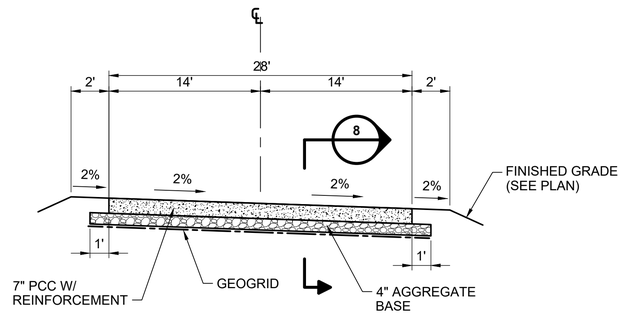

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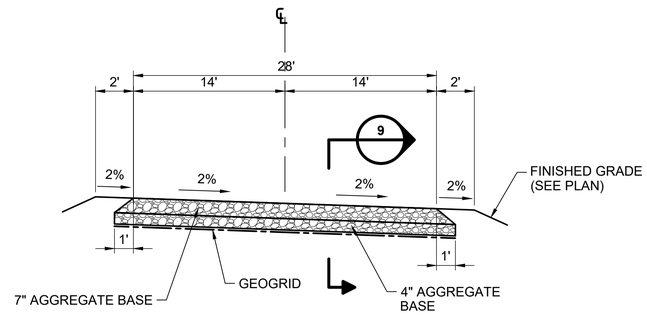

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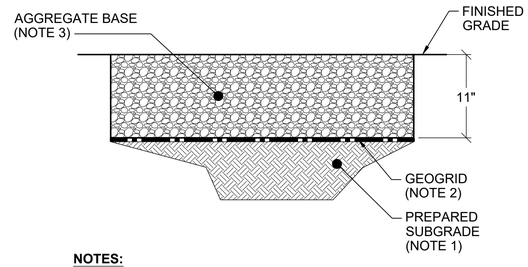

NOTES:

1. SUBGRADE SHALL BE PREPARED PER SECTION 31 20 50.
2. GEOGRID SHALL BE TENSAR NX850 OR APPROVED EQUAL, INSTALLED PER MANUFACTURER INSTRUCTIONS.
3. AGGREGATE BASE SHALL BE PER TXDOT STANDARD SPECIFICATION ITEM 247 GRADE 1-2, TYPE A OR D, PLACED PER SECTION 31 20 50.

TYPICAL AGGREGATE PAVEMENT SECTION (9 / C501)
NOT TO SCALE

no.	date	by	ckd	description
0	04/03/26	PMW	JLG	GMP 1/2: ISSUED FOR BID

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BURNS McDONNELL
6200 BRIDGE POINT PARKWAY, SUITE 400
AUSTIN, TX 78730
Burns & McDonnell Engineering Co., Inc.
FIRM Reg. No. F-845

date	detailed
DECEMBER 4, 2025	A. KADAM
designed	checked
P. WORLEY	J. GARDER

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY
CIVIL
STANDARD DETAILS 1

project	contract
187533	

drawing 006TP1C501 — rev. 0

sheet of sheets

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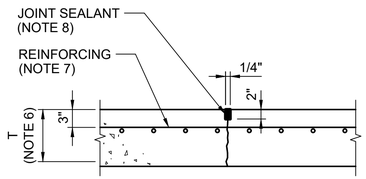

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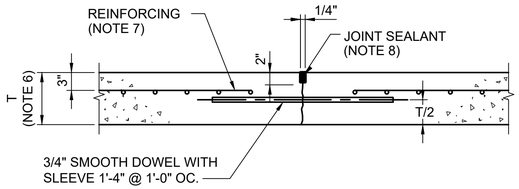

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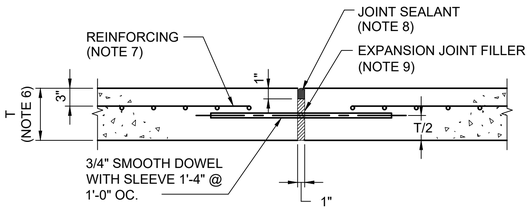

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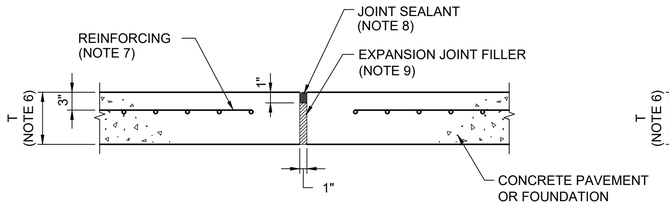
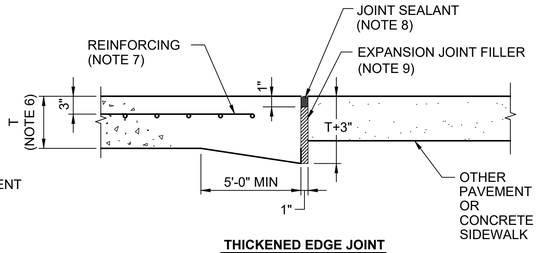


TYPE F JOINT
(EXPANSION JOINT, NO DOWELS)

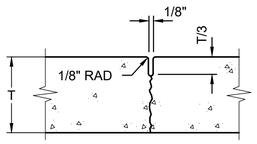


THICKENED EDGE JOINT

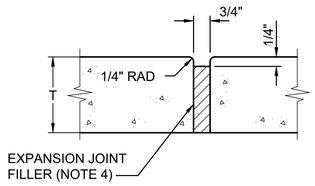
DETAIL NOTES:

1. JOINTS SHALL BE TYPE C JOINTS UNLESS NOTED OTHERWISE.
2. TYPE D JOINTS SHALL BE LOCATED TRAVERSE TO TRAFFIC WHEN PAVING OPERATIONS CEASE DUE TO THE END OF A WORKING DAY OR A MECHANICAL BREAKDOWN.
3. TYPE E JOINTS SHALL BE LOCATED LONGITUDINAL TO TRAFFIC.
4. TYPE F JOINTS SHALL BE LOCATED WHERE CONCRETE PAVEMENT ABUTS STRUCTURES, STRUCTURAL STOOPS, AND STRUCTURAL PADS.
5. THICKENED EDGE JOINTS SHALL BE LOCATED WHERE CONCRETE PAVEMENT ABUTS OTHER PAVEMENT MATERIALS OR CONCRETE SIDEWALK.
6. CONCRETE PAVEMENT THICKNESS (T) SHALL BE PER CONCRETE PAVEMENT SECTION (SEE DWG 006TP1C501).
7. REINFORCING SHALL BE PER CONCRETE PAVEMENT SECTION (SEE DWG 006TP1C501).
8. JOINT SEALANT SHALL BE PER SECTION 03 30 00.
9. EXPANSION JOINT FILLER SHALL BE PER SECTION 03 30 00.
10. JOINT SPACING:
    A. PAVEMENT JOINTS SHALL BE LOCATED SUCH THAT CONCRETE PANEL LENGTH DOES NOT EXCEED 1.25 TIMES PANEL WIDTH.
    B. MAXIMUM JOINT SPACING SHALL BE 15'-0".
    C. TRANSVERSE JOINTS SHALL BE ALIGNED TO COINCIDE WITH THE CENTERLINE OF INTERSECTING ROADS, WHERE FEASIBLE.
11. SUBCONTRACTOR SHALL SUBMIT JOINTING PLAN FOR REVIEW PRIOR TO INSTALLATION OF CONCRETE PAVEMENT

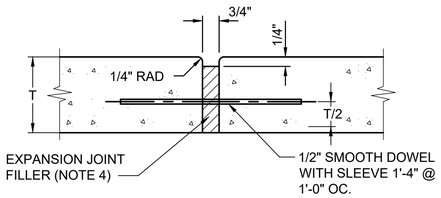
CONCRETE PAVEMENT JOINTS DETAILS — 1 / C502
NOT TO SCALE



TYPE A JOINT
(CONTROL JOINT)



TYPE B-1JOINT
(EXPANSION JOINT, NO DOWELS)



TYPE B-2 JOINT
(EXPANSION JOINT, W/ DOWELS)

DETAIL NOTES:

1. TYPE A JOINTS SPACING TO MATCH SIDEWALK WIDTH.
2. TYPE B-1 JOINTS TO BE LOCATED WHERE SIDEWALK ABUTS STRUCTURES.
3. TYPE B-2 JOINTS TO BE LOCATED AT A MAXIMUM OF 40'-0" ALONG THE LENGTH OF THE SIDEWALK AND WHERE SIDEWALK ABUTS CONCRETE CURBS AND DRIVES.
4. EXPANSION JOINT FILLER SHALL BE PER SECTION 03 30 00.
5. CONTRACTOR TO SUBMIT JOINTING PLAN FOR REVIEW PRIOR TO INSTALLATION OF CONCRETE PAVEMENT.

CONCRETE SIDEWALK JOINT DETAILS — 2 / C502
NOT TO SCALE

no.	date	by	ckd	description
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BURNS McDONNELL
6200 BRIDGE POINT PARKWAY, SUITE 400
AUSTIN, TX 78730
Burns & McDonnell Engineering Co., Inc.
FIRM Reg. No. F-845

date	detailed
DECEMBER 4, 2025	A. KADAM
designed	checked
P. WORLEY	J. GARDER

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY
CIVIL
STANDARD DETAILS 2

project	contract
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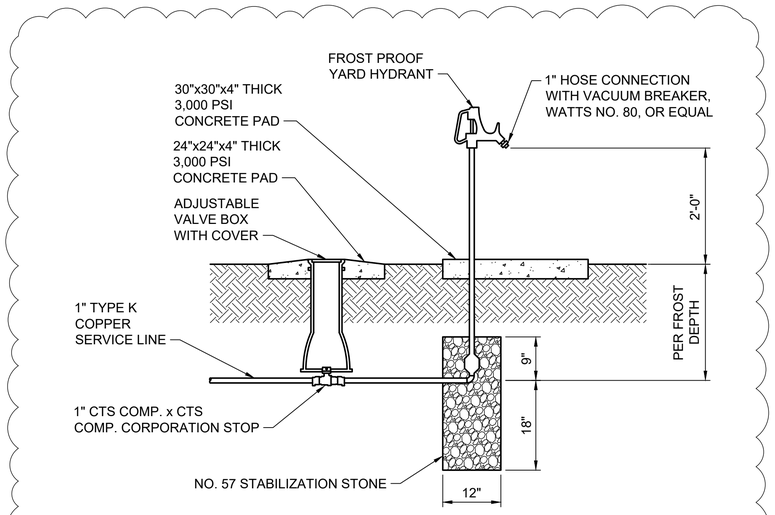

FROST PROOF YARD HYDRANT — 2 / C502
NOT TO SCALE

DETAIL TO BE UPDATED WITH GMP 3 PACKAGE

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AUSTIN, TX 78730
Burns & McDonnell Engineering Co., Inc.
FIRM Reg. No. F-845

date	detailed
DECEMBER 4, 2025	A. KADAM
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P. WORLEY	J. GARDER

THE CITY OF SAN MARCOS

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CIVIL
STANDARD DETAILS 3

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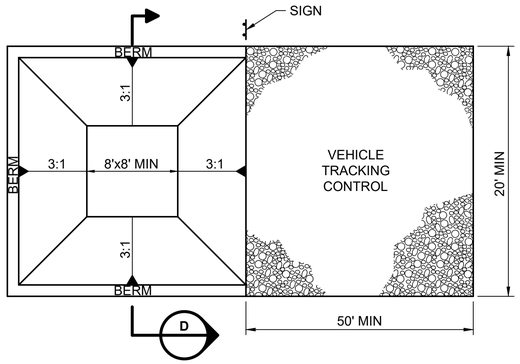
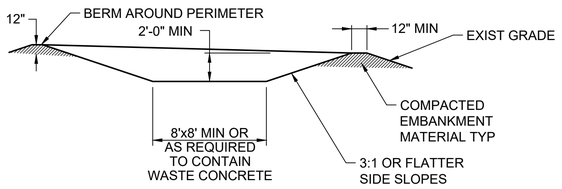


CONCRETE WASHOUT DETAIL (2 / C503)
NOT TO SCALE

CONCRETE WASHOUT AREA MAINTENANCE NOTES:

1. THE CONCRETE WASHOUT AREA SHALL BE REPAIRED AND ENLARGED OR CLEANED OUT AS NECESSARY TO MAINTAIN CAPACITY FOR WASTED CONCRETE.
2. AT THE END OF CONSTRUCTION, ALL CONCRETE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF AT AN APPROVED WASTE SITE.
3. WHEN THE CONCRETE WASHOUT AREA IS REMOVED, THE DISTURBED AREA SHALL BE SEEDED AND MULCHED PER THE SPECIFICATIONS OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE DESIGN-BUILDER.
4. INSPECT WEEKLY AND AFTER ANY 1/2" STORM EVENT WITHIN 24 HOURS.



SECTION (D / C503)
NOT TO SCALE

CONCRETE WASHOUT AREA INSTALLATION NOTES:

1. SEE PLAN VIEW FOR LOCATION OF CONCRETE WASHOUT AREA.
2. THE CONCRETE WASHOUT AREA SHALL BE INSTALLED PRIOR TO ANY CONCRETE PLACEMENT ON SITE.
3. LINE THE PIT WITH TEN MILLIMETER POLYETHYLENE LINING TO CONTROL SEEPAGE. LINING SHALL BE FREE OF HOLES, TEARS AND OTHER DEFECTS. LINING SHALL BE APPROPRIATE SIZE TO FIT THE WASHOUT SYSTEM WITHOUT SEAMS OR OVERLAPS. USE METAL PINS OR STAPLES AT A MINIMUM OF SIX INCHES IN LENGTH, SANDBAGS OR ALTERNATIVE FASTENER TO SECURE LINER.
4. VEHICLE TRACKING CONTROL SHALL BE A MINIMUM DEPTH OF 12". STONE SHALL BE 3" WITH A MAXIMUM SIZE OF 6".
5. SIGNS SHALL BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE WASHOUT AREA, AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CONCRETE WASHOUT AREA TO OPERATIONS OF CONCRETE TRUCKS AND PUMP RIGS.
6. EXCAVATED MATERIAL SHALL BE UTILIZED IN PERIMETER BERM CONSTRUCTION.

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BURNS McDONNELL
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AUSTIN, TX 78730
Burns & McDonnell Engineering Co., Inc.
FIRM Reg. No. F-845

date	detailed
DECEMBER 4, 2025	A. KADAM
designed	checked
P. WORLEY	J. GARDER

THE CITY OF SAN MARCOS

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STANDARD DETAILS 4

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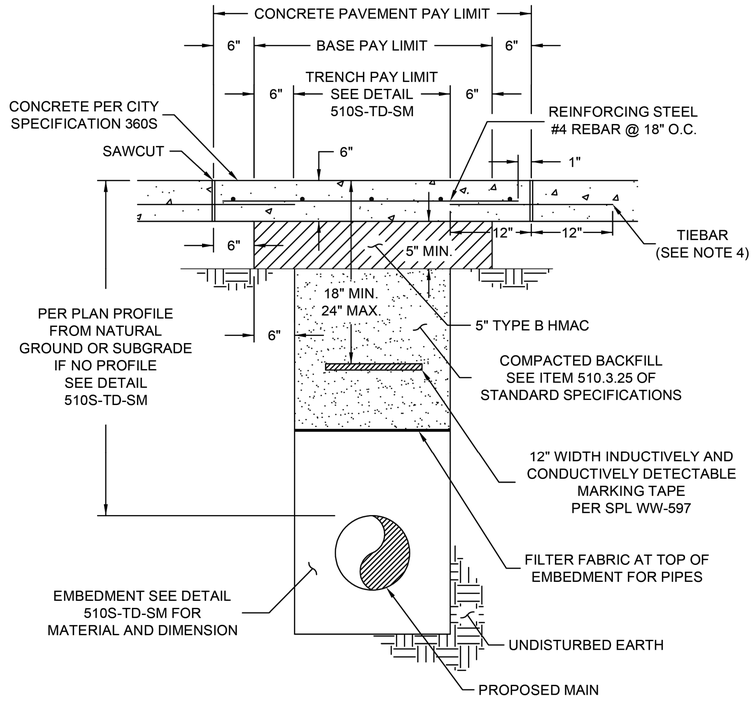
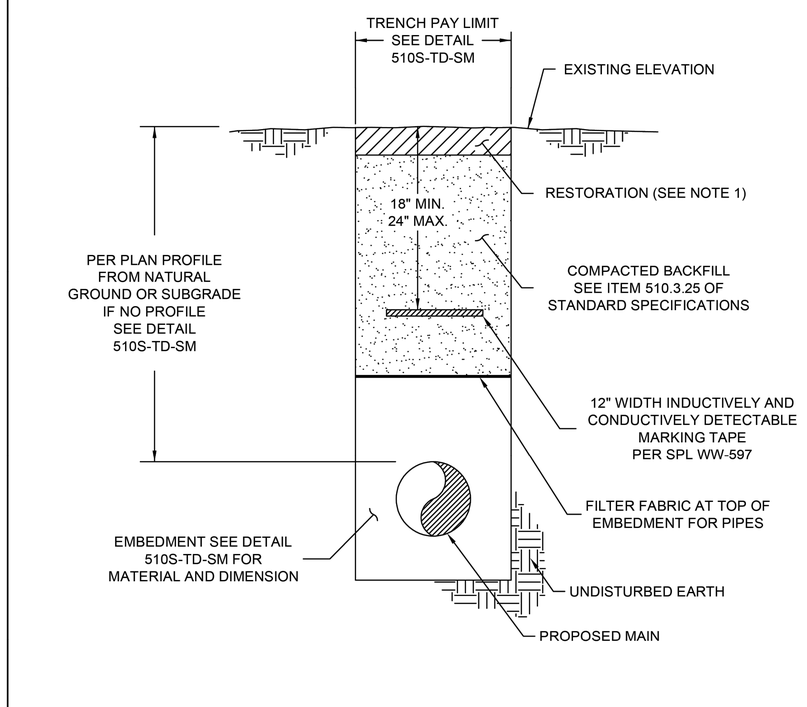


NOTES:

1. THE EXISTING PAVED SURFACE SHALL BE SAW CUT IN A STRAIGHT LINE A MINIMUM OF 12" WIDER THAN THE UNDISTURBED SIDES OF THE TRENCH, SYMMETRICAL ABOUT THE CENTER LINE OF THE EXCAVATION.
2. IF EXCAVATION AREA IS OPEN FOR TEMPORARY PUBLIC USE SEE DETAIL 510S-3T-SM.
3 ALL DAMAGED AREAS OF PAVEMENT OUTSIDE THE TRENCH CUT SHALL BE REMOVED AND REPLACED WITH MINIMUM OF 6" OF BASE OR MATCH EXISTING THICKNESS, WHICHEVER IS GREATER.
4. TIEBARS WILL BE A 24" #4 REBAR PLACED EVERY 18" MID DEPTH OF EXISTING CONCRETE ON ALL SIDES OF TRENCH OR PER INSPECTORS RECOMMENDATION.

REFERENCES
DETAIL 510S-TD-SM
DETAIL 510S-3T-SM

The City of San Marcos Engineering and Capital Improvements	CURRENT AS OF 1/1/2024	TYPICAL TRENCH WITH CONCRETE PAVEMENT	
RECORD COPY SIGNED BY	6/1/2018	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 510S-3C-SM 1 OF 1
LAURIE MOYER, P.E.	ADOPTED		



NOTES:

1. RESTORE ALL DISTURBED SURFACES ABOVE AND SURROUNDING THE TRENCH TO EXISTING CONDITION AND ELEVATION. NATURAL GROUND WILL HAVE 6" OF TOP SOIL, SEEDED AND A RETENTION BLANKET INSTALLED ON TOP. ALL OTHER SURFACE STRUCTURES SHALL BE REPLACED TO MATCH EXISTING CONDITIONS.

REFERENCES
DETAIL 510S-TD-SM

The City of San Marcos Engineering and Capital Improvements	CURRENT AS OF 1/1/2024	TRENCH DETAIL NATURAL GROUND	
RECORD COPY SIGNED BY	6/1/2018	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 510S-5-SM 1 OF 1
LAURIE MOYER, P.E.	ADOPTED		

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6200 BRIDGE POINT PARKWAY, SUITE 400
AUSTIN, TX 78730
Burns & McDonnell Engineering Co., Inc.
FIRM Reg. No. F-845

date	detailed
DECEMBER 4, 2025	A. KADAM
designed	checked
P. WORLEY	J. GARDER

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FM 1978 WATER RECLAMATION FACILITY
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COSM STANDARD DETAILS 1

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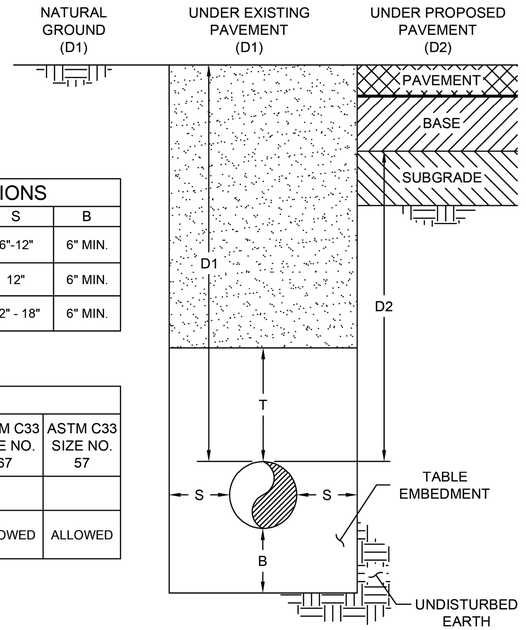

EMBEDMENT DIMENSIONS

	SIZE	T	S	B
NON STORM PIPE	ALL	12"	6"-12"	6" MIN.
STORM PIPE	42" OR LESS	12"	12"	6" MIN.
	GREATER THAN 42"	12"	12" - 18"	6" MIN.

EMBEDMENT

PIPE SIZE	BEDDING SAND	MODIFIED GRADE 5 GRAVEL	ASTM C33 SIZE NO. 67	ASTM C33 SIZE NO. 57
2" - 3" PVC PIPE	ALLOWED	ALLOWED		
ALL PIPE 4" AND GREATER			ALLOWED	ALLOWED

MINIMUM DEPTH OF COVER

PIPE TYPE	SIZE	(D1) UNDER PAVEMENT	(D1) NATURAL GROUND	(D1) LESS THAN 3' OF COVER	(D2 - NOTE 2) UNDER PROPOSED ROAD
WATER	12" OR LESS	48" MIN.	36" MIN.	24" MIN. AND USE CONCRETE FLOWABLE FILL DETAIL	36" BELOW BASE
	16" OR GREATER	48" MIN.	48" MIN.	NOT ALLOWED	48" BELOW BASE
WASTEWATER	ALL	60" MIN.	36" MIN.	DUCTILE IRON WILL BE USED. FLOWABLE FILL DETAIL WHERE EROSION MAY OCCUR	48" MIN. BELOW BASE
RECLAIMED WATER	ALL	48" MIN.	36" MIN.	24" MIN. AND USE CONCRETE FLOWABLE FILL DETAIL	36" MIN. BELOW BASE
STORM	ALL	MANUFACTURER'S SPECIFICATION MINIMUM AND MAXIMUM DEPTH OF COVER WILL BE USED FOR STORM PIPES			

NOTES:
1. ALL MEASUREMENTS ARE FROM OUTSIDE PIPE DIAMETER.
2. FOR TABLE "MINIMUM DEPTH OF COVER" COLUMN "UNDER PROPOSED ROAD" IF D1 FROM COLUMN "UNDER PAVEMENT" PLACES THE PIPE LOWER THAN D2. THEN D1 FROM "UNDER PAVEMENT" WILL BE USED FOR MINIMUM DEPTH OF COVER.
3. REFERENCE APPROPRIATE 510 PIPE TRENCH DETAILS FOR PAYMENT LIMITS. THIS DETAIL iS FOR DIMENSIONAL PURPOSES ONLY.

The City of San Marcos Engineering and Capital Improvements	CURRENT AS OF 1/1/2024	UTILITY TRENCH DIMENSIONS	
RECORD COPY SIGNED BY LAURIE MOYER, P.E.	1/23/2018 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 510S-TD-SM 1 OF 1

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date	detailed
DECEMBER 4, 2025	A. KADAM
designed	checked
P. WORLEY	J. GARDER

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY
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REFERENCE DRAWING
COSM STANDARD DETAILS 2

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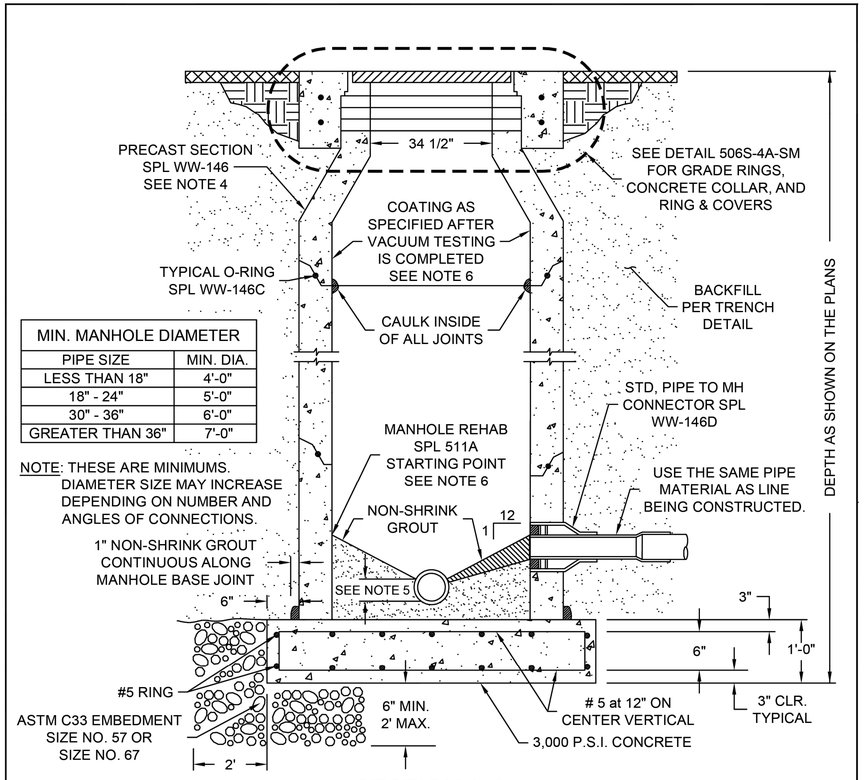


MIN. MANHOLE DIAMETER	
PIPE SIZE	MIN. DIA.
LESS THAN 18"	4'-0"
18" - 24"	5'-0"
30" - 36"	6'-0"
GREATER THAN 36"	7'-0"

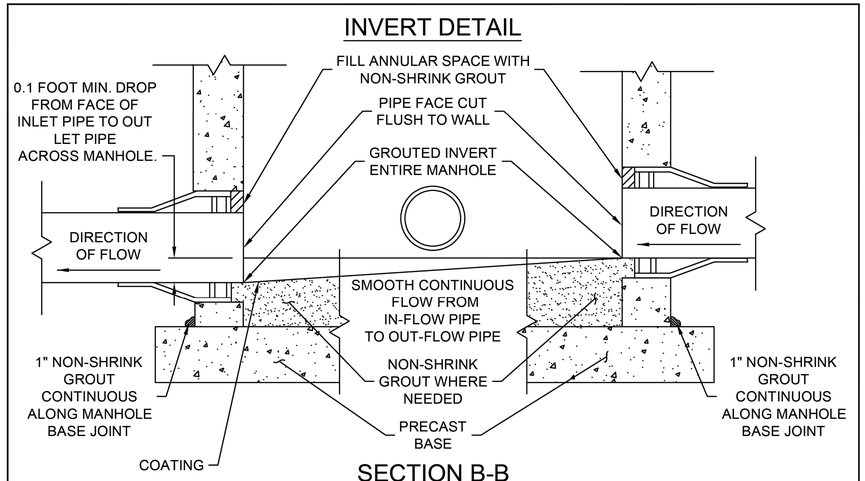
NOTE: THESE ARE MINIMUMS. DIAMETER SIZE MAY INCREASE DEPENDING ON NUMBER AND ANGLES OF CONNECTIONS.

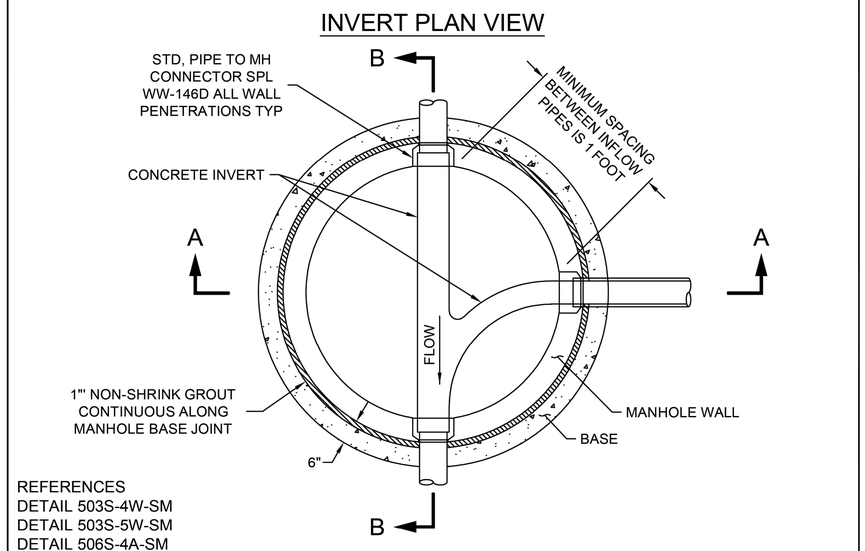
SECTION A-A

NOTES:

1. SEE PLANS FOR MANHOLE LOCATION, CONFIGURATION, PIPE SIZES AND TYPES.
2. SEE SPECIFICATIONS ON MATERIALS AND CONSTRUCTION.
3. MONOLITHIC MANHOLE TO BE CAST-IN-PLACE SHALL CONFORM TO ASTM SPECIFICATION C478 FOR MATERIALS AND DESIGN. MANUFACTURER TO PROVIDE DETAILS.
4. MANHOLES FOR MAINS 24" AND LARGER SHALL HAVE ECCENTRIC RISER SECTIONS.
5. DEPTH OF U CHANNEL WILL BE 3/4 THE DIAMETER OF PIPES 24" OR LESS AND WILL BE THE DIAMETER OF PIPES GREATER THEN 24".
6. MANHOLE COATING LIMITS - COAT ALL OF THE MANHOLE WALLS.
   AT TOP OF MANHOLE: SEE DETAIL 506S-4A-SM FOR END LOCATION AT GRADE RINGS.
   AT BOTTOM OF MANHOLE:
   NEW MANHOLES - COAT PER SPL 511; INCLUDING THE BOTTOM AND INVERT.
   MANHOLE REHABILITATION - COAT PER SPL 511A; EXCLUDING THE BOTTOM AND INVERT.

The City of San Marcos Engineering and Capital Improvements	CURRENT AS OF 1/1/2024	WASTEWATER MANHOLE ON PRECAST BASE	
RECORD COPY SIGNED BY	6/1/2018	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 506S-10-SM
LAURIE MOYER, P.E.	ADOPTED		1 OF 2





REFERENCES
DETAIL 503S-4W-SM
DETAIL 503S-5W-SM
DETAIL 506S-4A-SM

The City of San Marcos Engineering and Capital Improvements	CURRENT AS OF 1/1/2024	WASTEWATER MANHOLE ON PRECAST BASE	
RECORD COPY SIGNED BY	6/1/2018	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 506S-10-SM
LAURIE MOYER, P.E.	ADOPTED		2 OF 2

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FIRM Reg. No. F-845

date	detailed
DECEMBER 4, 2025	A. KADAM
designed	checked
P. WORLEY	J. GARDER

THE CITY OF SAN MARCOS

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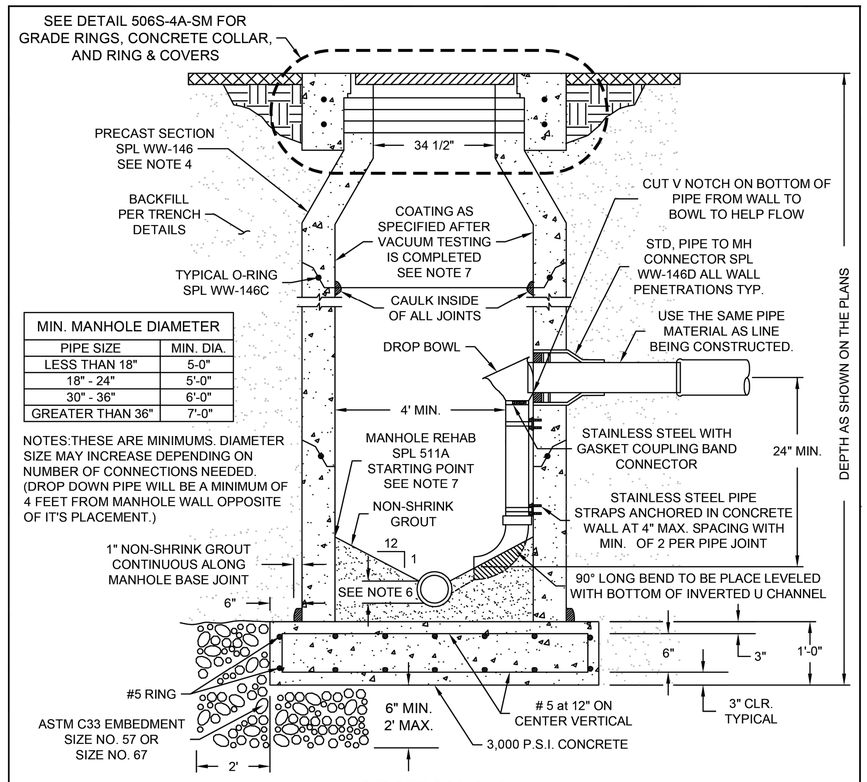

MIN. MANHOLE DIAMETER	
PIPE SIZE	MIN. DIA.
LESS THAN 18"	5-0"
18" - 24"	5'-0"
30" - 36"	6'-0"
GREATER THAN 36"	7'-0"

NOTES:THESE ARE MINIMUMS. DIAMETER SIZE MAY INCREASE DEPENDING ON NUMBER OF CONNECTIONS NEEDED. (DROP DOWN PIPE WILL BE A MINIMUM OF 4 FEET FROM MANHOLE WALL OPPOSITE OF IT'S PLACEMENT.)

SECTION A-A

NOTES:
1. SEE PLANS FOR MANHOLE LOCATION, CONFIGURATION, PIPE SIZES AND TYPES.
2. SEE SPECIFICATIONS ON MATERIALS AND CONSTRUCTION.
3. MONOLITHIC MANHOLE TO BE CAST-IN-PLACE SHALL CONFORM TO ASTM SPECIFICATION C478 FOR MATERIALS AND DESIGN. MANUFACTURER TO PROVIDE DETAILS.
4. MANHOLES FOR MAINS 24" AND LARGER SHALL HAVE ECCENTRIC RISER SECTIONS.
5. IF IN 100 YEAR FLOOD PLAIN USE MANHOLE COVER DETAIL 503S-5W-SM (BOLTED)
6. DEPTH OF U CHANNEL WILL BE 3/4 THE DIAMETER OF PIPES 24" OR LESS AND WILL BE THE DIAMETER OF PIPES GREATER THEN 24"
7. MANHOLE COATING LIMITS - COAT ALL OF THE MANHOLE WALLS
   AT TOP OF MANHOLE: SEE DETAIL 506S-4A-SM FOR END LOCATION AT GRADE RINGS
   AT BOTTOM OF MANHOLE:
   NEW MANHOLES - COAT PER SPL 511; INCLUDING THE BOTTOM AND INVERT
   MANHOLE REHABILITATION - COAT PER SPL 511A; EXCLUDING THE BOTTOM AND INVERT

The City of San Marcos Engineering and Capital Improvements	CURRENT AS OF 2/1/2026	WASTEWATER MANHOLE ON PRECAST BASE WITH INTERIOR DROP	
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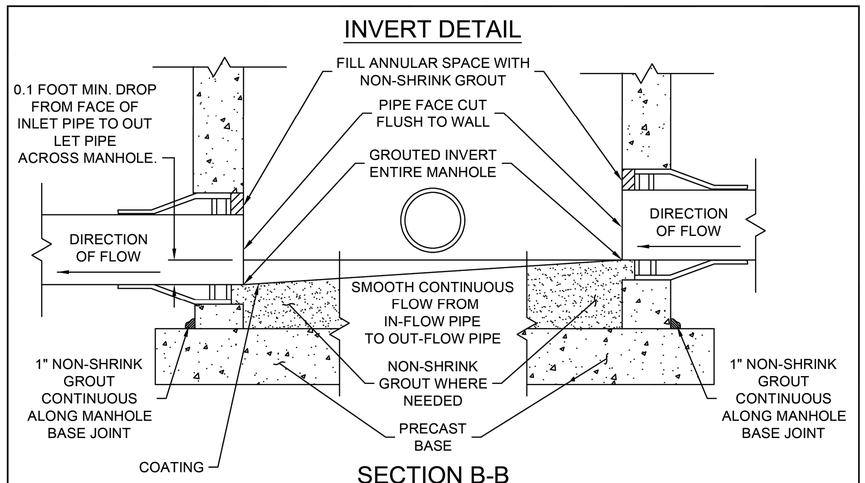
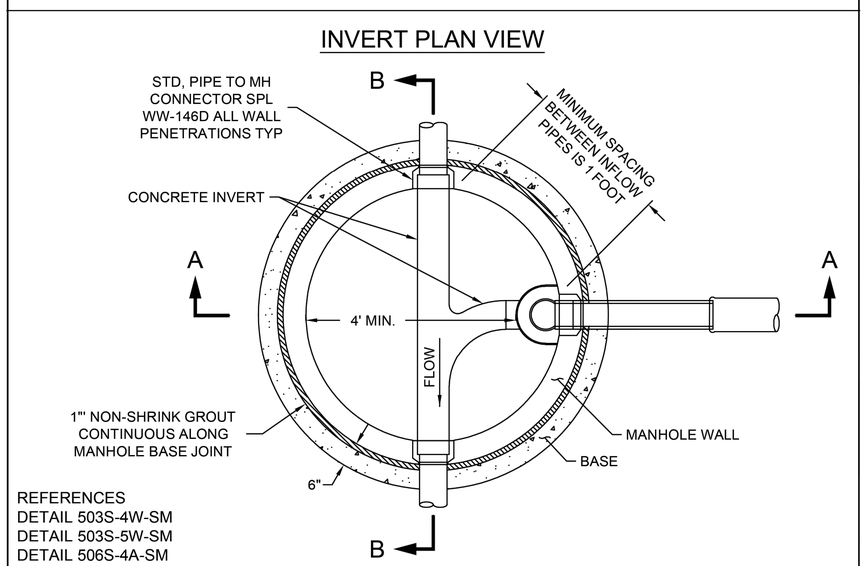
LAURIE MOYER, P.E.	ADOPTED		1 OF 2





The City of San Marcos Engineering and Capital Improvements	CURRENT AS OF 2/1/2026	WASTEWATER MANHOLE ON PRECAST BASE WITH INTERIOR DROP	
RECORD COPY SIGNED BY	1/1/2021	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 506S-8A-SM
LAURIE MOYER, P.E.	ADOPTED		2 OF 2

REFERENCE DRAWING

no.	date	by	ckd	description
0	04/03/26	PMW	JLG	GMP 1/2: ISSUED FOR BID

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BURNS McDONNELL
6200 BRIDGE POINT PARKWAY, SUITE 400
AUSTIN, TX 78730
Burns & McDonnell Engineering Co., Inc.
FIRM Reg. No. F-845

date	detailed
DECEMBER 4, 2025	A. KADAM
designed	checked
P. WORLEY	J. GARDER

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY
CIVIL
REFERENCE DRAWING
COSM STANDARD DETAILS 4

project	contract
187533	

drawing **006TP1REF04–** rev. **0**

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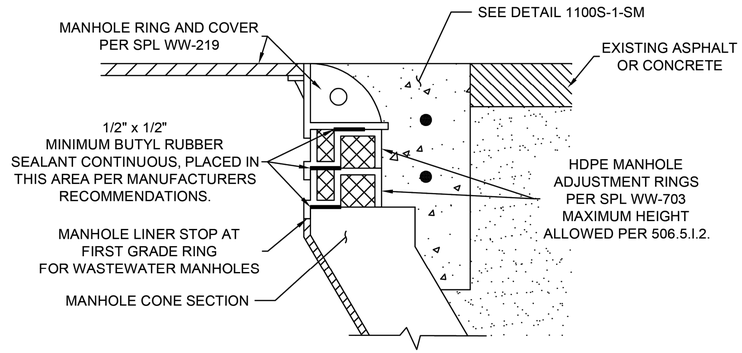
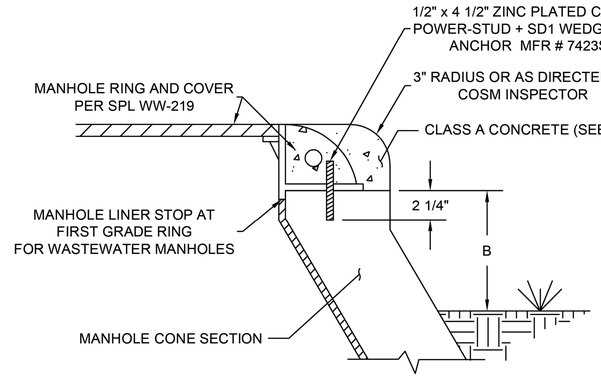


IN PAVEMENT

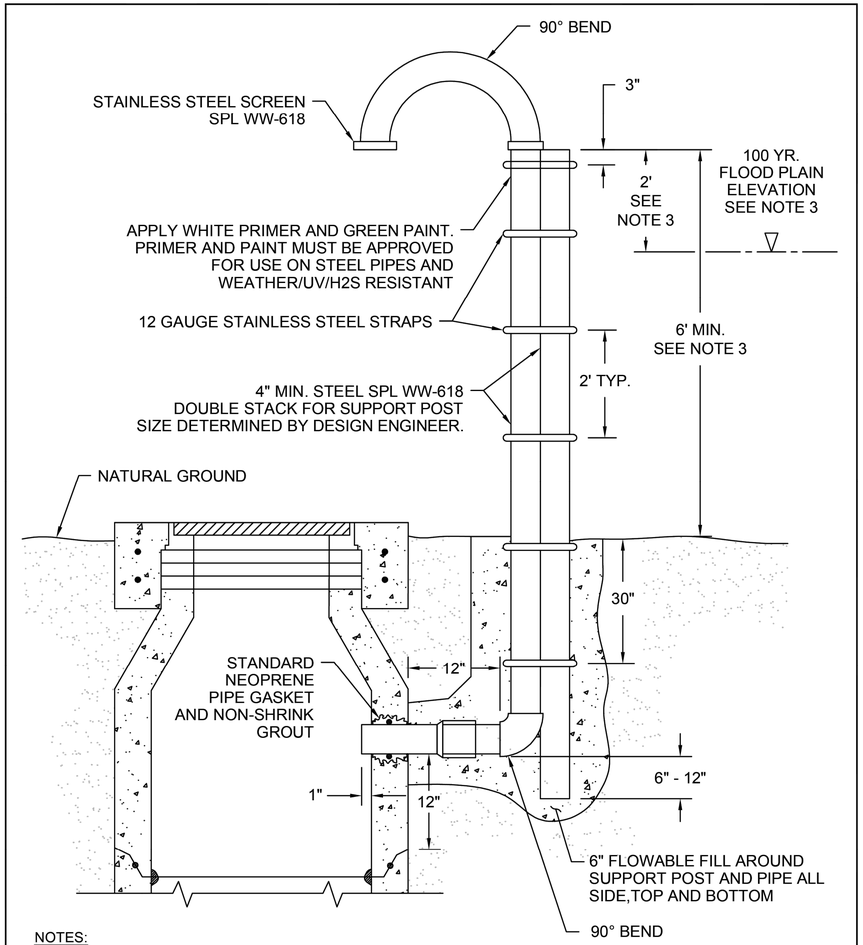


OUTSIDE PAVEMENT

NOTES:
1. IF MANHOLE IS WITHIN THE 100-YEAR FLOODPLAIN, USE BOLTED AND GASKET LIDS.
2. DIMENSION B = (6"-12" TO FINISH GRADE) FOR MANHOLE LOCATED IN THE 100-YR FLOOD PLAN.
   = (2"-12" TO FINISH GRADE) FOR MANHOLE OUTSIDE THE 100-YR FLOOD PLAN.
3. MANUFACTURES SHALL VERIFY DIMENSION AGAINST RING AND COVER SPECIFIED.
4. INSPECTOR MAY APPROVE THE USE OF CONCRETE BAG PER SPL WW-704 AT THE INSPECTORS DISCRETION.

REFERENCES
DETAIL 1100S-1-SM

The City of San Marcos Engineering and Capital Improvements	CURRENT AS OF 1/1/2024	MINOR MANHOLE ADJUSTMENT & NEW MANHOLE CONSTRUCTION	
RECORD COPY SIGNED BY	1/1/2020	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 506S-4A-SM
LAURIE MOYER, P.E.	ADOPTED		1 OF 1



NOTES:
1. NOT ALLOWED ON MANHOLES IN PAVEMENT
2. MANHOLE VENT TO BE USED ONLY WHEN REQUIRED BY TCEQ OR CITY.
3. THE BOTTOM OF STEEL SCREEN WILL BE THE GREATER OF:
   A. 6 FEET ABOVE GROUND ELEVATION
   B. 2 FEET ABOVE THE 100 YEAR FLOOD PLAIN
4. SEE CITY STANDARD MANHOLE DETAIL FOR MANHOLE INSTALLATION.

The City of San Marcos Engineering and Capital Improvements	CURRENT AS OF 1/1/2024	MANHOLE VENT	
RECORD COPY SIGNED BY	2/15/2019	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 506S-MV-SM
LAURIE MOYER, P.E.	ADOPTED		1 OF 1

no.	date	by	ckd	description
0	04/03/26	PMW	JLG	GMP 1/2: ISSUED FOR BID

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Burns & McDonnell Engineering Co., Inc.
FIRM Reg. No. F-845

date	detailed
DECEMBER 4, 2025	A. KADAM
designed	checked
P. WORLEY	J. GARDER

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY
CIVIL
REFERENCE DRAWING
COSM STANDARD DETAILS 5

project	contract
187533	

drawing **006TP1REF05–** rev. **0**

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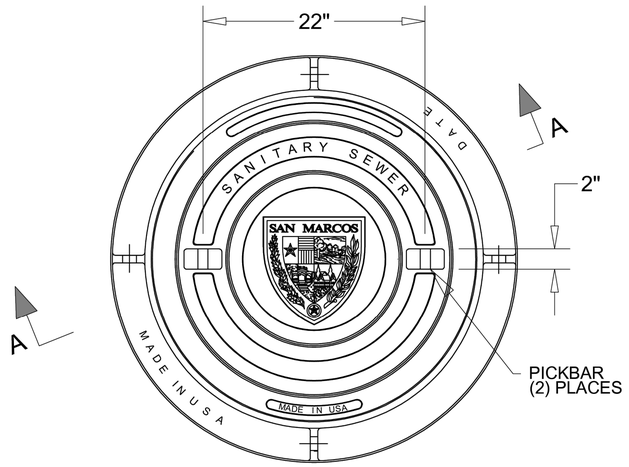
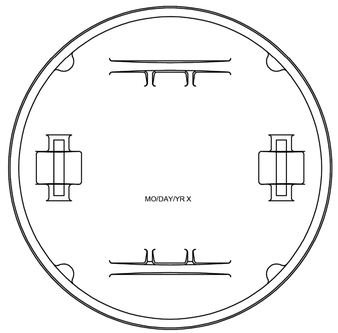
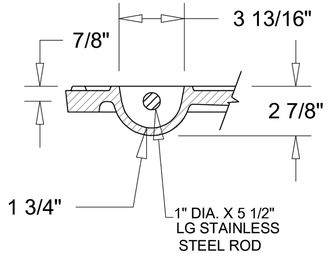
REFERENCE DRAWING



FRAME AND LID PLAN VIEW



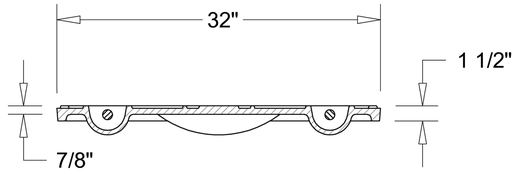
LID VIEW BOTTOM



PICKBAR DETAIL

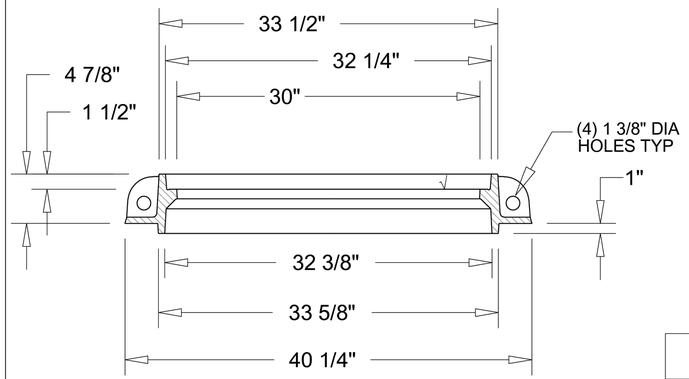
SHT 1 OF 2

The City of San Marcos Engineering and Capital Improvements	CURRENT AS OF 1/1/2024	SANITARY SEWER MANHOLE RING AND COVER 32" - UNBOLTED	
RECORD COPY SIGNED BY LAURIE MOYER, P.E.	6/5/2014 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD	503S-4W-SM N.T.S. STANDARD DETAIL



LID SECTION VIEW

SECTION A-A



FRAME SECTION VIEW

SECTION A-A

MATERIALS	
LID	DUCTILE IRON
FRAME	GRAY IRON

NOTE:

1. THIS DETAIL IS FOR USE IN PUBLIC INFRASTRUCTURE ONLY. PRIVATE INFRASTRUCTURE WILL NOT HAVE CITY OF SAN MARCOS LOGO.
2. COVER SHALL BE EAST JORDAN IRON WORKS OR APPROVED EQUIVALENT.

SHT 2 OF 2

The City of San Marcos Engineering and Capital Improvements	CURRENT AS OF 1/1/2024	SANITARY SEWER MANHOLE RING AND COVER 32" - UNBOLTED	
RECORD COPY SIGNED BY LAURIE MOYER, P.E.	6/5/2014 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD	503S-4W-SM N.T.S. STANDARD DETAIL

REFERENCE DRAWING

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0	04/03/26	PMW	JLG	GMP 1/2: ISSUED FOR BID

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AUSTIN, TX 78730
Burns & McDonnell Engineering Co., Inc.
FIRM Reg. No. F-845

date	detailed
DECEMBER 4, 2025	A. KADAM
designed	checked
P. WORLEY	J. GARDER

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY
CIVIL
REFERENCE DRAWING
COSM STANDARD DETAILS 6

project	contract
187533	

drawing **006TP1REF06–** rev. **0**

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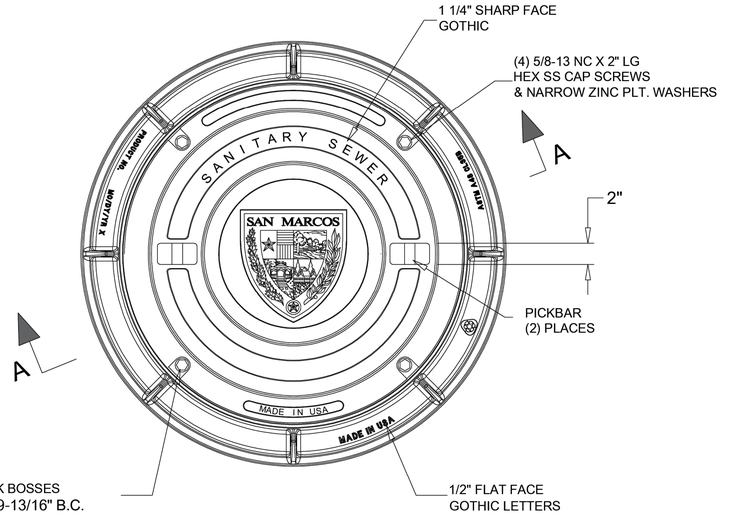
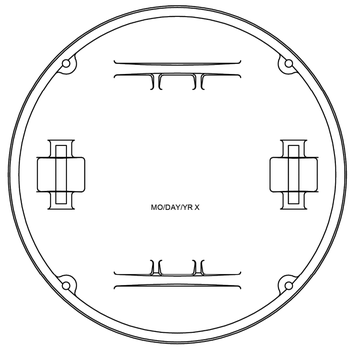
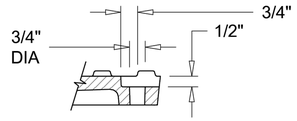


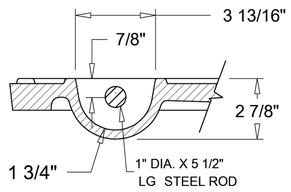
LID AND FRAME PLAN VIEW



LID BOTTOM VIEW



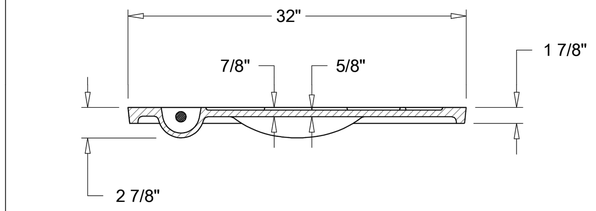
BOLT HOLE SECTION



PICKBAR DETAIL

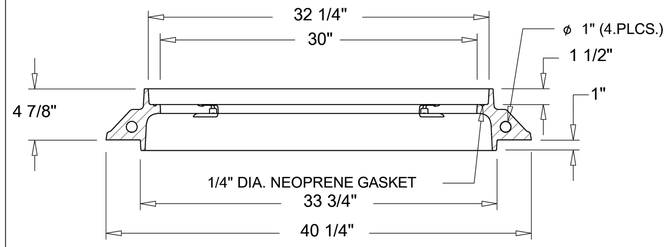
SHT 1 OF 2

The City of San Marcos Engineering and Capital Improvements	CURRENT AS OF 1/1/2024	SANITARY SEWER MANHOLE RING AND COVER 32" -BOLTED	
RECORDED COPY SIGNED BY LAURIE MOYER, P.E.	3-16-2015 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD	503S-5W-SM N.T.S. STANDARD DETAIL



LID CROSS SECTION

SECTION A-A



FRAME CROSS SECTION

SECTION A-A

MATERIALS	
LID	GRAY IRON
FRAME	GRAY IRON

NOTE:

1. THIS DETAIL IS FOR USE IN PUBLIC INFRASTRUCTURE ONLY. PRIVATE INFRASTRUCTURE WILL NOT HAVE CITY OF SAN MARCOS LOGO.
2. COVER SHALL BE EAST JORDAN IRON WORKS OR APPROVED EQUIVALENT.

SHT 2 OF 2

The City of San Marcos Engineering and Capital Improvements	CURRENT AS OF 1/1/2024	SANITARY SEWER MANHOLE RING AND COVER 32" -BOLTED	
RECORDED COPY SIGNED BY LAURIE MOYER, P.E.	3-16-2015 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD	503S-5W-SM N.T.S. STANDARD DETAIL

REFERENCE DRAWING

no.	date	by	ckd	description
0	04/03/26	PMW	JLG	GMP 1/2: ISSUED FOR BID

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BURNS McDONNELL
6200 BRIDGE POINT PARKWAY, SUITE 400
AUSTIN, TX 78730
Burns & McDonnell Engineering Co., Inc.
FIRM Reg. No. F-845

date	detailed
DECEMBER 4, 2025	A. KADAM
designed	checked
P. WORLEY	J. GARDER

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY
CIVIL
REFERENCE DRAWING
COSM STANDARD DETAILS 7

project	contract
187533	

drawing **006TP1REF07–** rev. **0**

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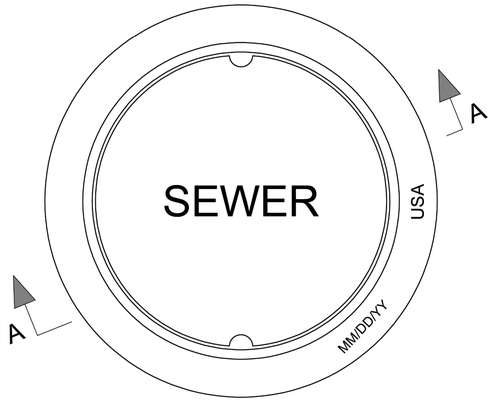
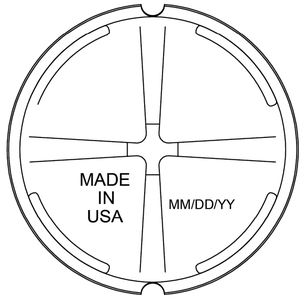


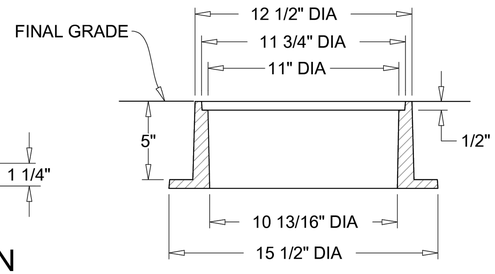
PLAN VIEW



COVER BACK

COVER SECTION

SECTION A-A

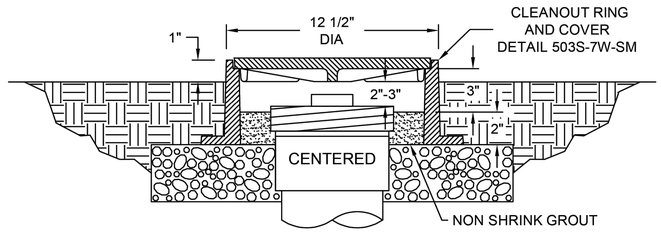


RING SECTION

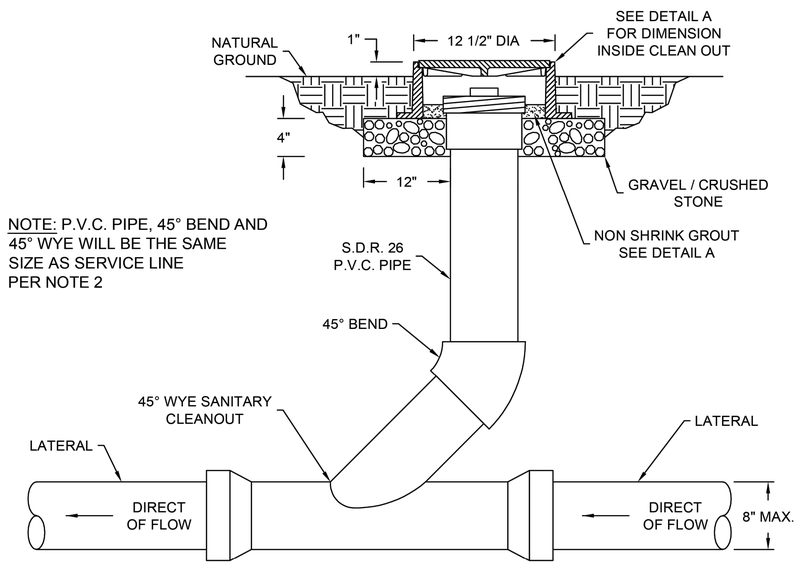
SECTION A-A

NOTES:
1. COVER SHALL BE EAST JORDAN IRON WORKS OR APPROVED EQUIVALENT.

The City of San Marcos Engineering and Capital Improvements	CURRENT AS OF 1/1/2024	CLEANOUT RING AND COVER	
RECORD COPY SIGNED BY LAURIE MOYER, P.E.	6/30/2014 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD	503S-7W-SM N.T.S. STANDARD DETAIL



DETAIL A



NOTE: P.V.C. PIPE, 45° BEND AND 45° WYE WILL BE THE SAME SIZE AS SERVICE LINE PER NOTE 2

NOTES:

1. THIS DETAIL IS NOT FOR ANY LOCATION THAT WILL HAVE TRAFFIC LOADS.
2. THIS STANDARD IS ONLY FOR LATERALS 8" OR LESS AND ALL FITTING AND PIPE FOR CLEANOUT WILL BE THE SAME SIZE AS LATERAL.
3. TRENCH SHALL BE COMPACTED AND RESTORED AS PER STANDARD DETAIL 510S-S&L-SM.
4. CLEAN OUT WILL BE LOCATED IN R.O.W. OR WASTEWATER EASEMENT.

REFERENCES
DETAIL 503S-7W-SM
DETAIL 510S-S&L-SM

The City of San Marcos Engineering and Capital Improvements	CURRENT AS OF 1/1/2024	WASTEWATER CLEANOUT	
RECORD COPY SIGNED BY LAURIE MOYER, P.E.	6/2/2017 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 520S-4A-SM 1 OF 1

REFERENCE DRAWING

no.	date	by	ckd	description
0	04/03/26	PMW	JLG	GMP 1/2: ISSUED FOR BID

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BURNS McDONNELL
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Burns & McDonnell Engineering Co., Inc.
FIRM Reg. No. F-845

date	detailed
DECEMBER 4, 2025	A. KADAM
designed	checked
P. WORLEY	J. GARDER

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY
CIVIL
REFERENCE DRAWING
COSM STANDARD DETAILS 8

project	contract
187533	

drawing **006TP1REF08–** rev. **0**

sheet of sheets

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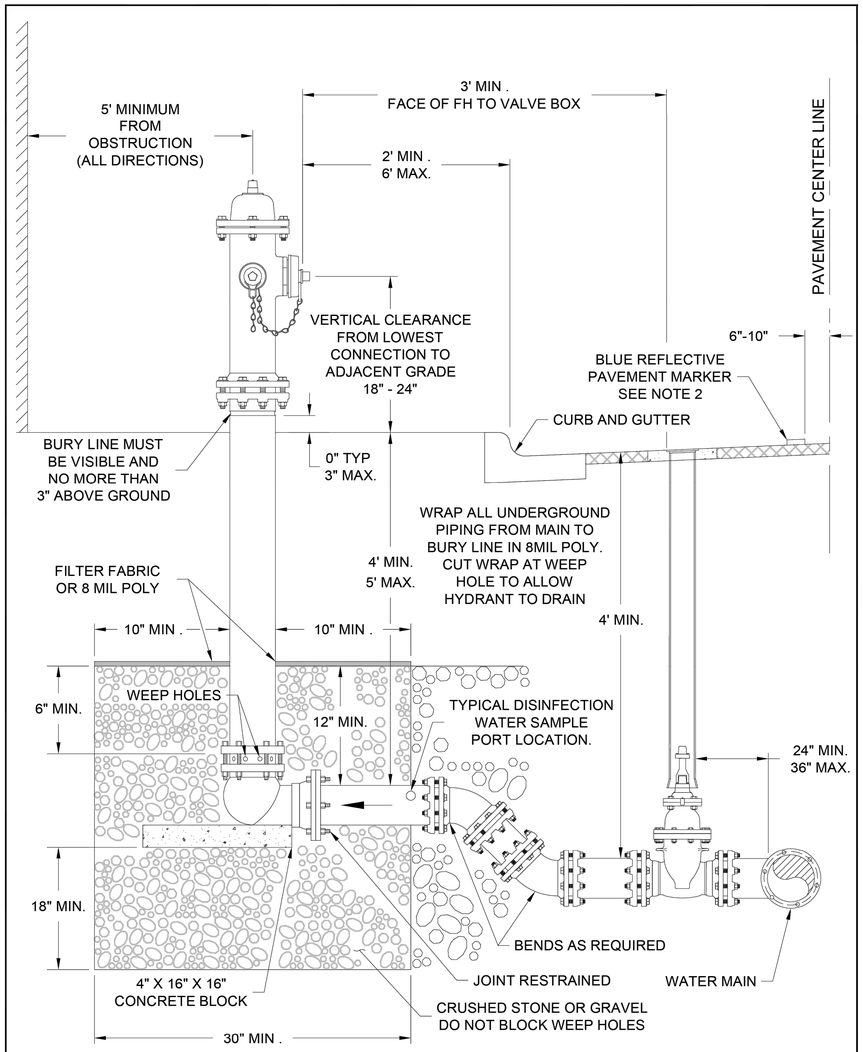
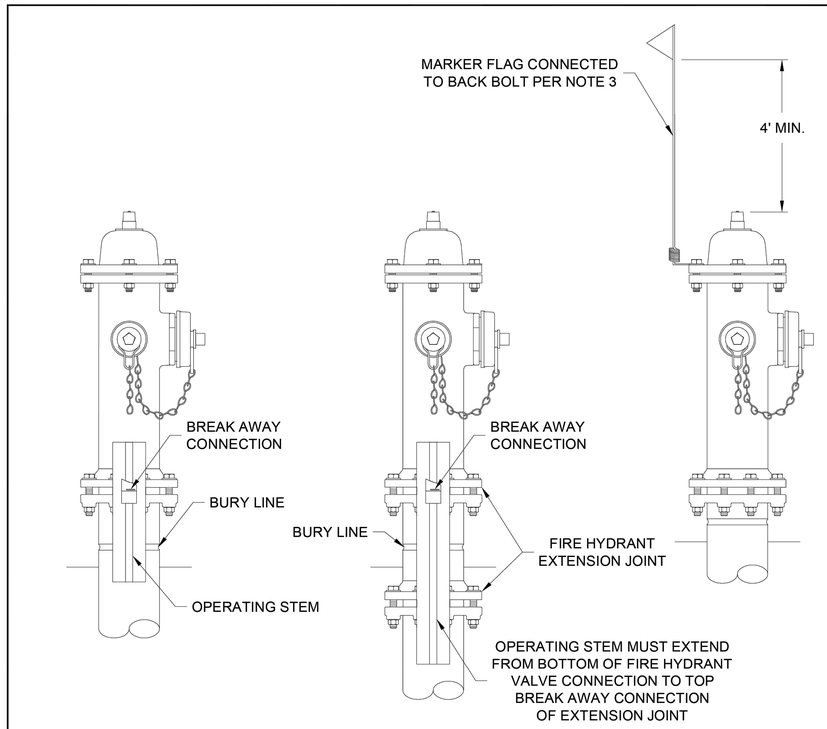


The City of San Marcos Engineering and Capital Improvements	CURRENT AS OF 7/15/2024	STANDARD FIRE HYDRANT	
RECORD COPY SIGNED BY	7/15/2024	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 511-17-SM
SHAUN CONDOR, P.E.	ADOPTED		1 OF 2



NOTES:

1. PUBLIC HYDRANTS SHALL BE FACTORY PAINTED WITH BRIGHT ALUMINUM BASED SILVER PAINT AND PRIVATE HYDRANTS SHALL BE PAINTED RED.
2. A BLUE REFLECTIVE PAVEMENT MARKER MUST BE PLACED WITH EVERY FIRE HYDRANT ADJACENT TO A ROADWAY 6"-10" OFF CENTER LINE OF ROAD ON FIRE HYDRANT SIDE.
3. FIRE HYDRANTS OUTSIDE ROW SHALL HAVE MARKING FLAGS IN RURAL AREAS.
4. FIRE HYDRANT MUST GO ON PAVEMENT SIDE OF FENCE, OR FENCE MUST BE REBUILT AROUND FIRE HYDRANT TO ALLOW ACCESS FROM PAVEMENT TO FIRE HYDRANT.
5. FIRE HYDRANT MAY ONLY MINIMALLY OBSTRUCT SIDEWALK AT EITHER EDGE
6. NO OBJECT THAT WILL OBSTRUCT MAINTENANCE OR USE OF THE FIRE HYDRANT WILL BE LOCATED WITH IN 5 FEET OF THE FIRE HYDRANT INCLUDING BUT NOT LIMITED TO (TREES, FENCES, TELEPHONE POLE, DUMPSTER, PERMANENT/NONPERMANENT STRUCTURES,...ETC.).
7. FIRE HYDRANT ASSEMBLY MUST BE PER CURRENT CITY OF SAN MARCOS STANDARD PRODUCT LIST.

REFERENCES
DETAIL 520S-WMT-SM

The City of San Marcos Engineering and Capital Improvements	CURRENT AS OF 7/15/2024	STANDARD FIRE HYDRANT	
RECORD COPY SIGNED BY	7/15/2024	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 511-17-SM
SHAUN CONDOR, P.E.	ADOPTED		2 OF 2

REFERENCE DRAWING

no.	date	by	ckd	description
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date	detailed
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designed	checked
P. WORLEY	J. GARDER

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY
CIVIL
REFERENCE DRAWING
COSM STANDARD DETAILS 9

project	contract
187533	

drawing **006TP1REF09–** rev. **0**

sheet of sheets

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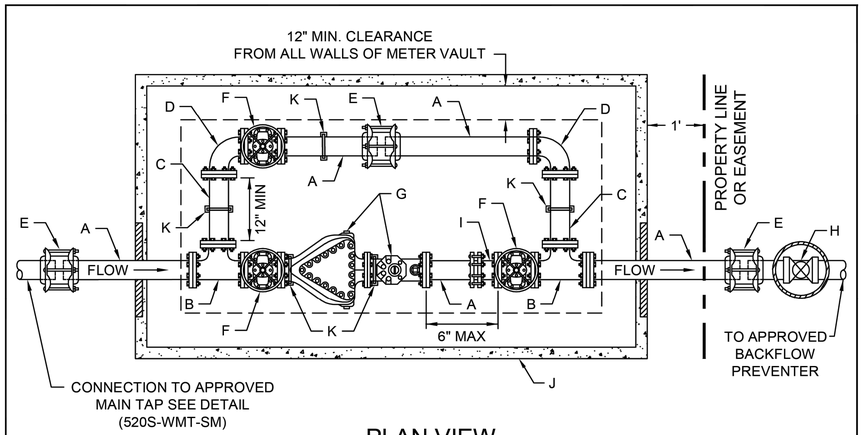
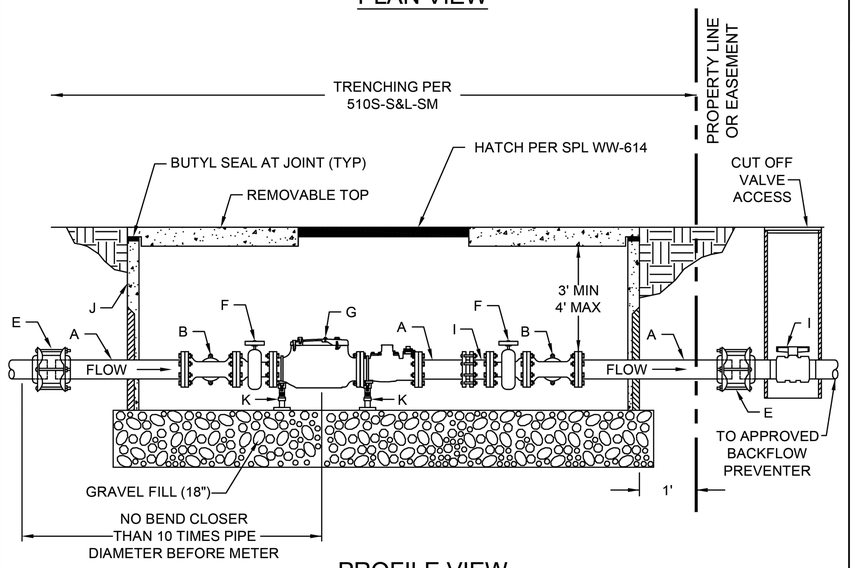


PLAN VIEW



PROFILE VIEW

The City of San Marcos Engineering and Capital Improvements	CURRENT AS OF 1/1/2024	FIRE DOMESTIC METER INSTALLATION	
RECORD COPY SIGNED BY LAURIE MOYER, P.E.	11/1/2020 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 520S-17-SM 1 OF 2

MATERIALS				
LABEL	ITEMS	METER SIZE		
		6"	8"	10"
A	DUCTILE IRON FLANGE X PLAIN END PER SPL.WW-27	6"	8"	10"
B	DUCTILE IRON TEE FLANGE X FLANGE PER SPL. WW-27B	6"	8"	10"
C	DUCTILE IRON PIPE FLANGE X FLANGE (LENGTH MINIMUM OF 12") PER SPL. WW-27	6"	8"	10"
D	DUCTILE IRON 90° BEND - FLANGE PER SPL. WW-27B	6"	8"	10"
E	RESTRAINT DRESSING COUPLINGS - MAXI-GRIP OR APPROVED EQUIVALENT PER SPL. WW-506	6"	8"	10"
F	SHUT OF VALVE, RESILIENT WEDGE GATE, FLANGE PER SPL. WW-700B WITH HAND WHEEL	6"	8"	10"
G	COMBO WATER METER PER STANDARD PRODUCT LIST NO. WW-144 WATER METERS	6"	8"	10"
H	CUSTOMER CUT OFF VALVE	6"	8"	10"
I	OMNI CAST INSULATING FLANGED COUPLING ADAPTER MODEL 932 OR APPROVED EQUAL	6"	8"	10"
J	METER VAULTS PER STANDARD PRODUCTS LIST WW-298 - SPL LISTS SIZES	8' X 12'	10' X 15'	10' X 15'
K	PIPE SUPPORT. (ANVIL INTERNATIONAL, INC. PIPE SUPPORT AND STAND "FIG. 265 AND FIG. 63T" OR APPROVED EQUIVALENT.)	REQUIRED		

NOTES:

1. TOP OF METER VAULT SHALL BE 1" ABOVE GRADE AFTER REVEGETATION OR FLUSH WITH PAVEMENT SURFACE. METER VAULT WILL BE LOCATED BEHIND BACK CURB, OUT OF SIDEWALK OR TRAFFIC LOADED AREA.
2. FOR PIPES AND FITTINGS OUTSIDE THE METER VAULT SHALL BE EMBEDDED AND BACKFILLED PER DETAIL 510S-S&L-SM WITHIN THE ROW OR EASEMENT.
3. TAP TO CITY WATER LINE WILL BE PER CITY DETAIL 510S-WMT-SM. TAP SIZE EQUALS THE METER SIZE.
4. IF THE METER VAULT IS SET AFTER THE METER IS INSTALLED, SIDE NOTCHES IN THE VAULT TO BE FILLED WITH MORTAR AFTER INSTALLATION OF PIPE.
5. PIPES AND FITTINGS TO BE AS SHOWN PER DETAIL.
6. IF METER VAULT HAS CONCRETE BASE A DRAIN MINIMUM 6" DIAMETER WILL BE INSTALLED AND BASE WILL BE GRADED TO DRAIN TO THE DRAIN.

REFERENCES
DETAIL 510S-S&L-SM
DETAIL 520S-WMT-SM

The City of San Marcos Engineering and Capital Improvements	CURRENT AS OF 1/1/2024	FIRE DOMESTIC METER INSTALLATION	
RECORD COPY SIGNED BY LAURIE MOYER, P.E.	11/1/2020 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 520S-17-SM 2 OF 2

REFERENCE DRAWING

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BURNS McDONNELL
6200 BRIDGE POINT PARKWAY, SUITE 400
AUSTIN, TX 78730
Burns & McDonnell Engineering Co., Inc.
FIRM Reg. No. F-845

date	detailed
DECEMBER 4, 2025	A. KADAM
designed	checked
P. WORLEY	J. GARDER

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY
CIVIL
REFERENCE DRAWING
COSM STANDARD DETAILS 10

project	contract
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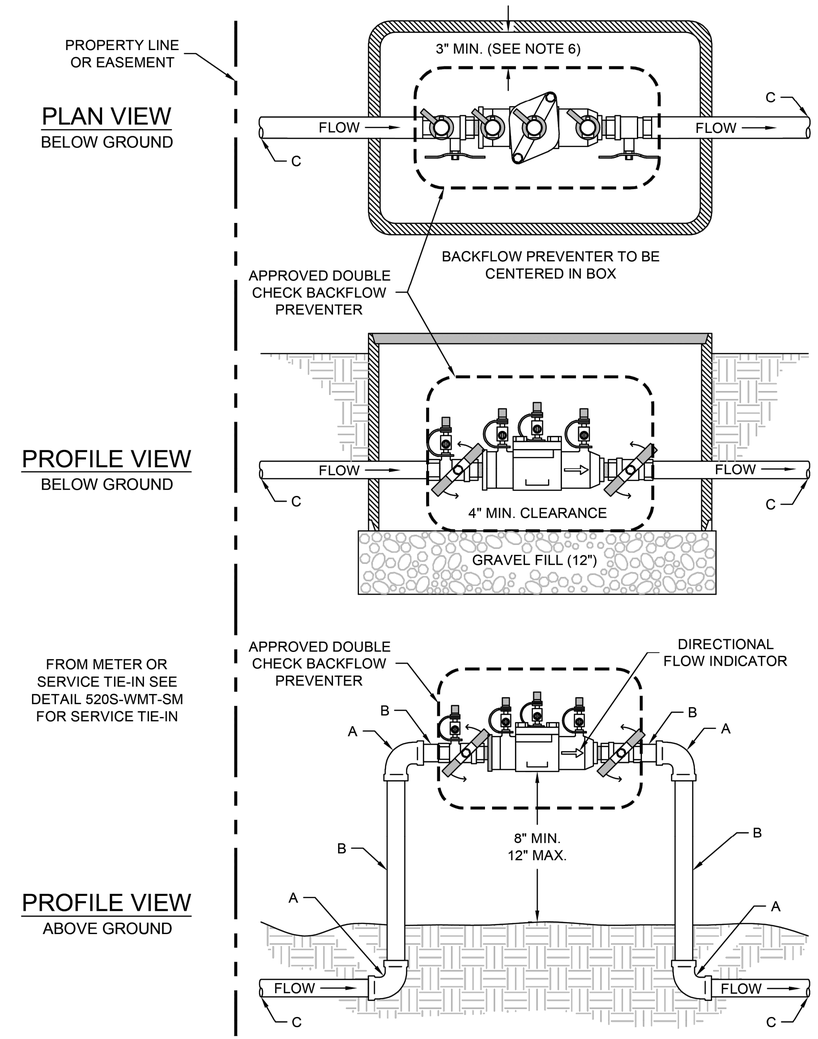

The City of San Marcos Engineering and Capital Improvements	CURRENT AS OF 1/1/2024	DOUBLE CHECK VALVE BACKFLOW PREVENTION ASSEMBLY 3/4"-2"		
RECORD COPY SIGNED BY LAURIE MOYER, P.E.	1/1/2022 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 520S-19D-SM 1 OF 2	

MATERIALS LIST					
LABEL	ITEM	SIZE			
	BACKFLOW PREVENTER SIZE	3/4"	1"	1 1/2"	2"
A	BRASS ELBOW 90° BEND	3/4"	1"	1 1/2"	2"
B	BRASS NIPPLE THREADED BY THREADED	3/4"	1"	1 1/2"	2"
C	BRASS NIPPLE THREADED	3/4"	1"	1 1/2"	2"

NOTES:

1. **FIRE LINES REQUIRE A DETECTOR ASSEMBLY ON THE BACKFLOW DEVICE.**
2. BACKFLOW PREVENTER MUST BE PROTECTED FROM WEATHER.
3. BACKFLOW PREVENTER SHOULD BE AS CLOSE AS POSSIBLE TO SERVICE CONNECTION ON PROPERTY OWNER SIDE OF EASEMENT OR PROPERTY LINE.
4. A TRANSITION FROM PVC TO BRASS WITH A COUPLING MAY BE RECOMMENDED AFTER METER VAULT BEFORE THE BACKFLOW PREVENTER.
5. A UNMETERED FIRE LINE WILL USE DETAIL 520S-WMT-SM WITH TAP SIZE EQUAL TO BACKFLOW PREVENTER SIZE TO CONNECT TO CITY WATER LINE.
6. 3" MIN. CLEARANCE FROM ALL WALLS OF METER.

REFERENCES
DETAIL 520S-WMT-SM

The City of San Marcos Engineering and Capital Improvements	CURRENT AS OF 1/1/2024	DOUBLE CHECK VALVE BACKFLOW PREVENTION ASSEMBLY 3/4"-2"		
RECORD COPY SIGNED BY LAURIE MOYER, P.E.	1/1/2022 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 520S-19D-SM 2 OF 2	

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BURNS McDONNELL
6200 BRIDGE POINT PARKWAY, SUITE 400
AUSTIN, TX 78730
Burns & McDonnell Engineering Co., Inc.
FIRM Reg. No. F-845

date DECEMBER 4, 2025	detailed A. KADAM
designed P. WORLEY	checked J. GARDER

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY
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COSM STANDARD DETAILS 11

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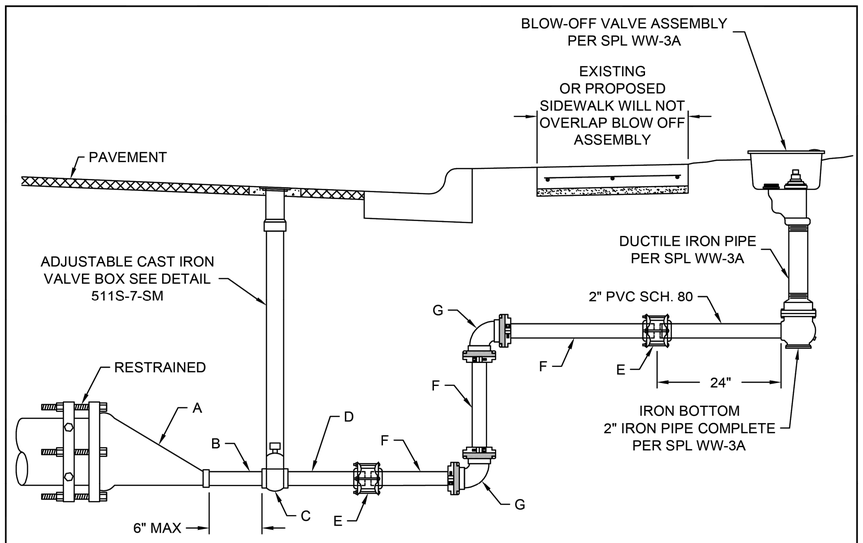

MATERIALS		
LABEL	ITEM	SIZE
A	6" OR 8" M.J. X 2" THREAD C.I. OR D.I. ECCENTRIC REDUCER	REQUIRED
B	GALVANIZED NIPPLE-THREADED	2"
C	TAPPING VALVE (RESILIENT WEDGE GATE, IRON BODY FEMALE/FEMALE) WITH VALVE BOX PER SPL. WW-700B	2"
D	GALVANIZED NIPPLE-THREADED X THREADED	2"
E	RESTRAINT DRESSING COUPLINGS - MAXI-GRIP OR APPROVED EQUIVALENT PER SPL. WW-587B	2"
F	SUPPLY PIPE SCH. 80 FULLY RESTRAINED PER SPL. WW-587	2"
G	DUCTILE IRON 90° BEND - HARCO-KNUCKLE JOINT RESTRAINT, OR APPROVED EQUIVALENT PER SPL. WW-587B	2"

NOTES:
1. IRON, DUCTILE IRON, PIPE, FITTINGS AND COUPLINGS WILL BE COMPLETELY WRAPPED WITH 8-MIL POLYETHYLENE FILM.
2. ALL BACKFILL AND EMBEDMENT PER TRENCH DETAIL 510S-S&L-SM.
3. BLOW-OFF ASSEMBLY IS ONLY FOR WATER MAINS THAT ARE 6" OR LESS. FOR LARGER MAIN INSTALL FIRE HYDRANT PER CITY DETAIL 511S-17-SM.
4. TOP OF BOX MUST BE 1" ABOVE NATURAL GROUND. BOX IS NOT ALLOWED IN PAVEMENT SURFACE.
5. SUPPLY PIPE TO BE FULLY RESTRAINED PER SPL WW-587B.

REFERENCES
DETAIL 510S-S&L-SM
DETAIL 520S-WMT-SM

The City of San Marcos Engineering and Capital Improvements	CURRENT AS OF 1/1/2024	BLOW-OFF ASSEMBLY	
RECORD COPY SIGNED BY	6/2/2017	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 511S-9B-SM
LAURIE MOYER, P.E.	ADOPTED		1 OF 1

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BURNS McDONNELL
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AUSTIN, TX 78730
Burns & McDonnell Engineering Co., Inc.
FIRM Reg. No. F-845

date	detailed
DECEMBER 4, 2025	A. KADAM
designed	checked
P. WORLEY	J. GARDER

THE CITY OF SAN MARCOS

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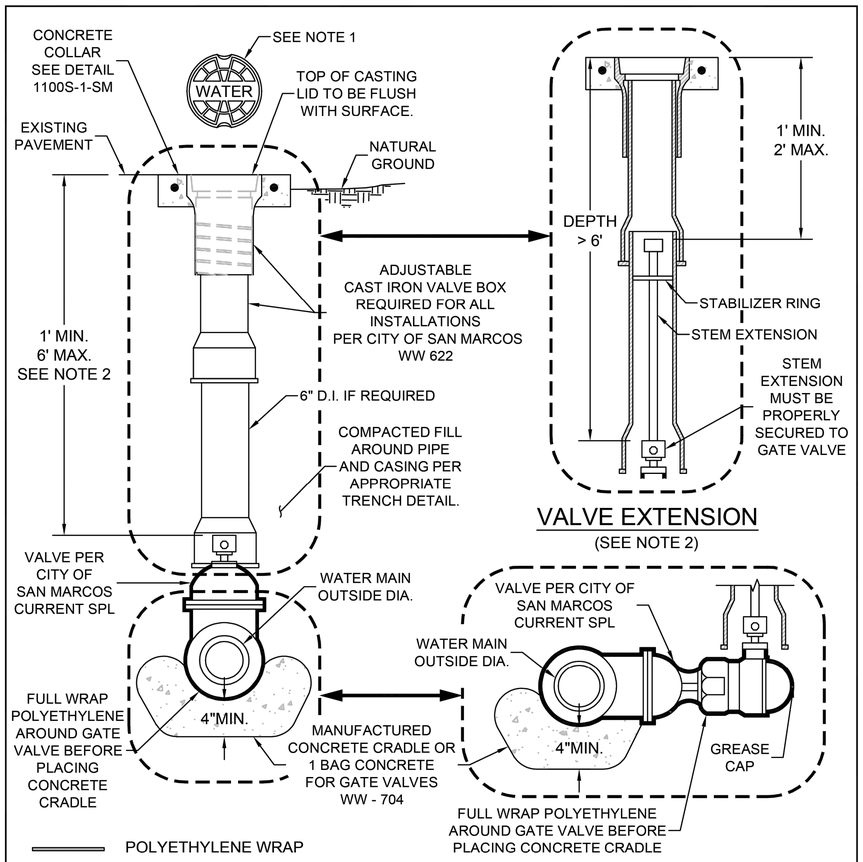


VERTICAL VALVE (STANDARD)

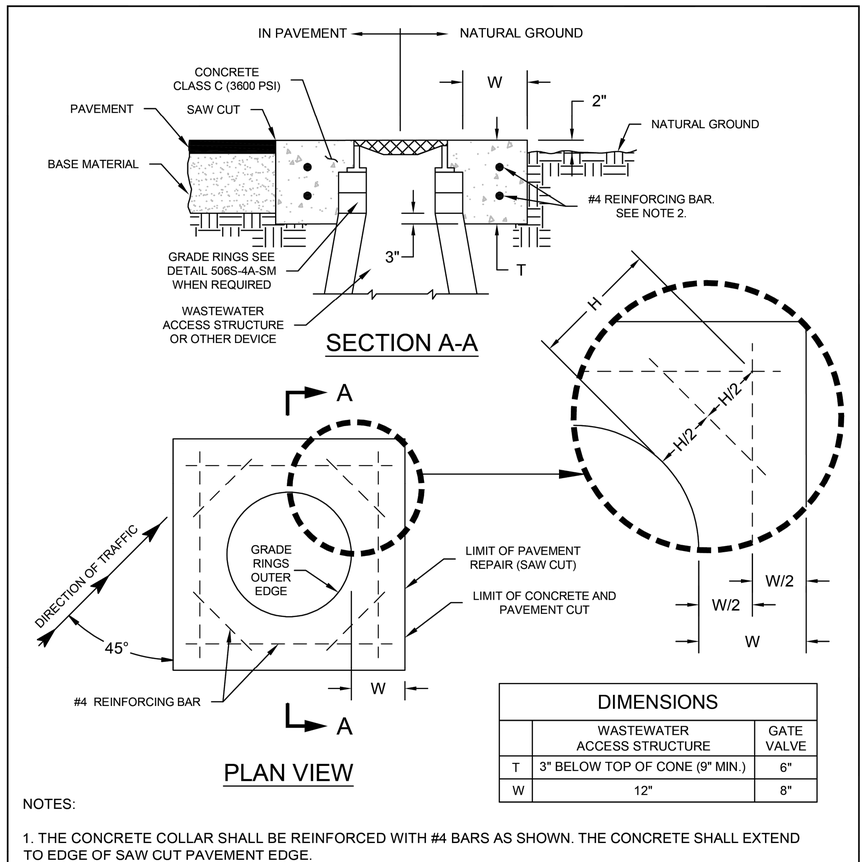
HORIZONTAL VALVE

NOTE:

1. LID MUST SAY "WATER" FOR A WATERLINE, "SEWER" FOR NONPOTABLE LINES OR "RECLAIM" FOR RECLAIMED WATER. REFER TO SPL WW 622.
2. IF DEPTH EXCEEDS 6', A SINGLE VALVE EXTENSION IS REQUIRED. VALVE EXTENSION CAN NOT BE STACKED.

REFERENCES
DETAIL 1100S-1-SM

The City of San Marcos Engineering and Capital Improvements	CURRENT AS OF 1/1/2024	TYPICAL GATE VALVE 2" - 24"	
RECORD COPY SIGNED BY LAURIE MOYER, P.E.	2/15/2019 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 511S-7-SM 1 OF 1



PLAN VIEW

DIMENSIONS		
	WASTEWATER ACCESS STRUCTURE	GATE VALVE
T	3" BELOW TOP OF CONE (9" MIN.)	6"
W	12"	8"

NOTES:

1. THE CONCRETE COLLAR SHALL BE REINFORCED WITH #4 BARS AS SHOWN. THE CONCRETE SHALL EXTEND TO EDGE OF SAW CUT PAVEMENT EDGE.
2. REBAR WILL BE PLACED IN TWO LAYERS. FIRST LAYER (1/3 T) FROM TOP OF COLLAR AND SECOND LAYER (⅔ T) FROM TOP OF COLLAR. IF (T) IS 12" OR LESS ONE LAYER OF REBAR WILL BE USED, PLACED MID POINT BETWEEN TOP AND BOTTOM OF COLLAR.
3. REQUIREMENTS FOR NEW MANHOLE CONSTRUCTION AND MINOR MANHOLE ADJUSTMENTS IN NEW RECONSTRUCTION AND REAPING PROJECTS ARE INCLUDED IN DETAIL NO. 506S-3-SM, 506S-8-SM, 506S-8A-SM AND 506S-10-SM.
4. REFER TO TRENCH DETAIL FOR ADDITIONAL BACKFILL REQUIREMENTS WITH APPROPRIATE CONDITIONS.
5. BOLLARDS REQUIRED IN RURAL AREAS AS OUTLINED IN COSM DETAIL 500S-B-SM

REFERENCES
DETAIL 500S-B-SM

The City of San Marcos Engineering and Capital Improvements	CURRENT AS OF 1/1/2024	CONCRETE RISER COLLAR	
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FIRM Reg. No. F-845

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DECEMBER 4, 2025	A. KADAM
designed	checked
P. WORLEY	J. GARDER

THE CITY OF SAN MARCOS

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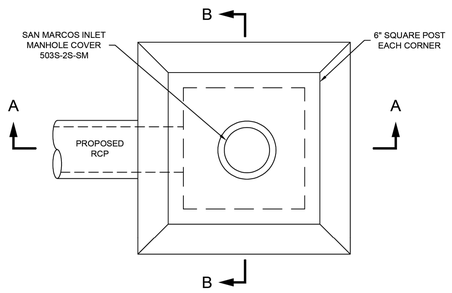
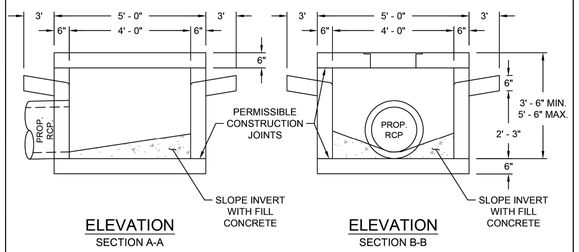


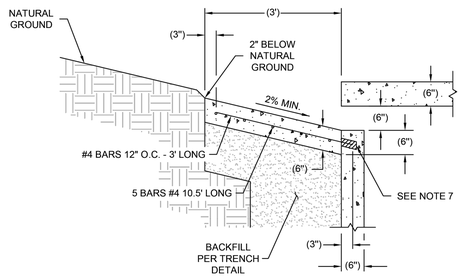
PLAN VIEW



ELEVATION
SECTION A-A

ELEVATION
SECTION B-B

The City of San Marcos Engineering and Capital Improvements	CURRENT AS OF 1/1/2024	PRECAST 4-SIDED AREA INLET	
RECORD COPY SIGNED BY	1/1/2021	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 508S-9-SM
LAURIE MOYER, P.E.	ADOPTED		1 OF 3



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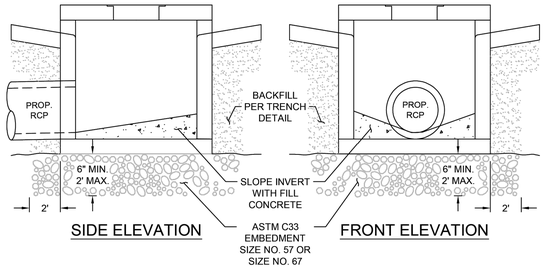
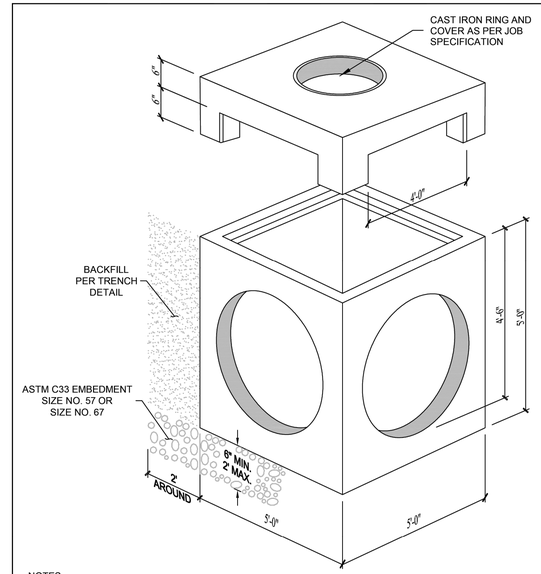


SIDE ELEVATION

FRONT ELEVATION

The City of San Marcos Engineering and Capital Improvements	CURRENT AS OF 1/1/2024	PRECAST 4-SIDED AREA INLET	
RECORD COPY SIGNED BY	1/1/2021	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 508S-9-SM
LAURIE MOYER, P.E.	ADOPTED		2 OF 3



NOTES:

1. REBAR PLACEMENT WILL BE PER MANUFACTURERS RECOMMENDATION. IF POSSIBLE TRAFFIC LOADS DESIGN MUST MEET HS-20 MINIMUM BEARING CAPACITY. CAST IN PLACE MUST BE SUBMITTED & SEALED BY DESIGN ENGINEER.
2. ALL CUT STEEL SHALL BE REPLACED WITH ADDITIONAL DIAGONAL BARS OF THE SAME DIAMETER.
3. INLET RING AND COVER SHALL BE IN ACCORDANCE WITH CITY OF SAN MARCOS STANDARD 503S-2S-SM.
4. CONCRETE COVERAGE OF STEEL SHALL BE 2" MIN. AT ALL SURFACES.
5. ALL MEASUREMENTS ARE MINIMUM UNLESS OTHERWISE NOTED.
6. CONSULT MANUFACTURER BEFORE HANDLING.
7. DRILL 3" DEEP HOLES (5/8" DIA.) AT 12" O.C.

The City of San Marcos Engineering and Capital Improvements	CURRENT AS OF 1/1/2024	PRECAST 4-SIDED AREA INLET	
RECORD COPY SIGNED BY	1/1/2021	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 508S-9-SM
LAURIE MOYER, P.E.	ADOPTED		3 OF 3

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Burns & McDonnell Engineering Co., Inc.
FIRM Reg. No. F-845

date	detailed
DECEMBER 4, 2025	A. KADAM
designed	checked
P. WORLEY	J. GARDER

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY

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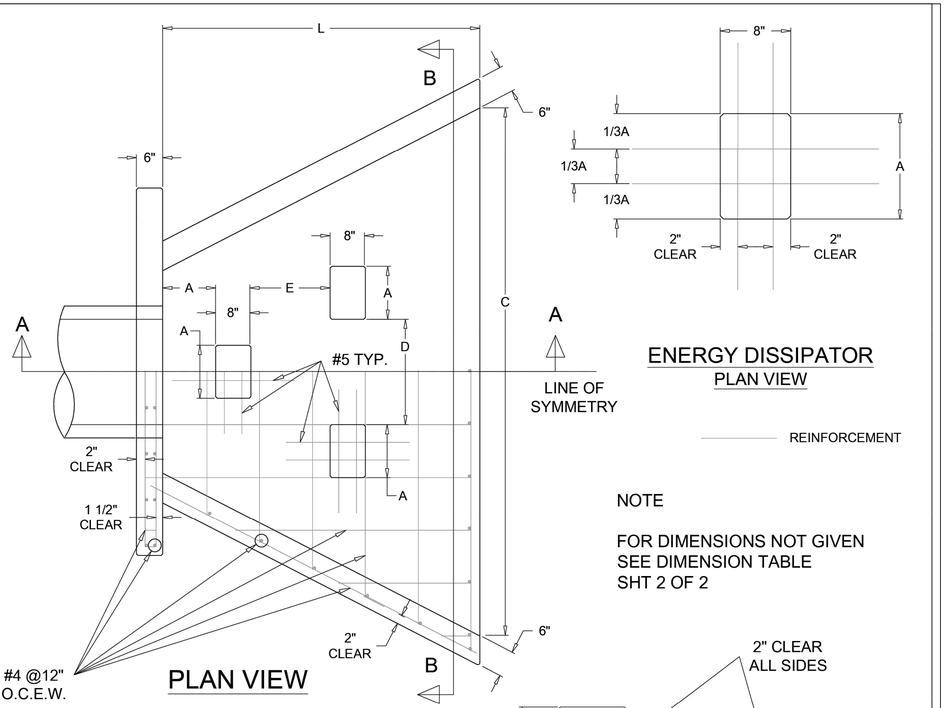


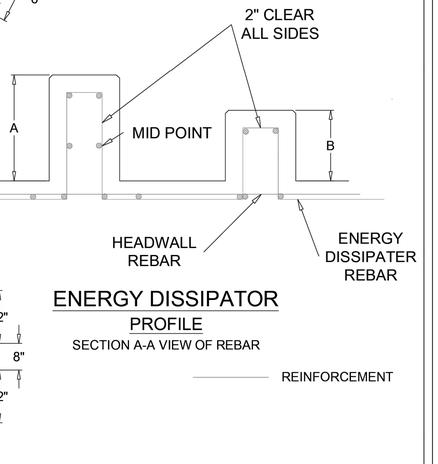
PLAN VIEW

ENERGY DISSIPATOR
PLAN VIEW

REINFORCEMENT

NOTE

FOR DIMENSIONS NOT GIVEN
SEE DIMENSION TABLE
SHT 2 OF 2



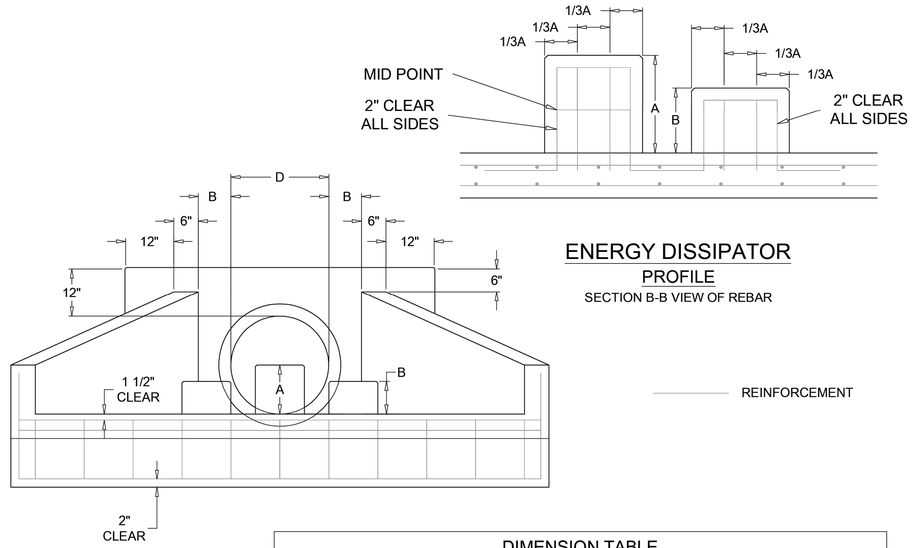
PROFILE
SECTION A-A

ENERGY DISSIPATOR
PROFILE
SECTION A-A VIEW OF REBAR

REINFORCEMENT

SHT 1 OF 2

The City of San Marcos Engineering and Capital Improvements	CURRENT AS OF 1/1/2024	TYPICAL HEADWALL AND ENERGY DISSIPATOR	
RECORDED COPY SIGNED BY LAURIE MOYER, P.E.	11/18/2014 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD	508S-13-SM N.T.S. STANDARD DETAIL



PROFILE
SECTION B-B

ENERGY DISSIPATOR
PROFILE
SECTION B-B VIEW OF REBAR

REINFORCEMENT

DIMENSION TABLE							
D	18"	21"	24"	27"	30"	33"	36"
A	9"	10"	12"	14"	15"	16	18"
B	6"	7"	8"	9	10"	11"	12"
C	90"	105"	120"	135"	150"	165"	180"
L	54"	63"	72"	81"	90"	99"	108"
E	12"	14"	16"	18"	20"	22"	24"

NOTE:

1. ALL CONCRETE SHALL BE TYPE "C" PER SPEC. 403S
2. CHAMFER ALL EXTERNAL VISIBLE CORNERS.
3. DISSIPATOR BLOCKS REQUIRED ON DISCHARGE HEADWALLS ONLY.
4. DISCHARGE VELOCITIES GREATER THAN 6 FEET/SECOND AFTER DISSIPATOR ALSO REQUIRE ROCK OUTLET PROTECTION.
5. DETAIL IS NOT FOR PIPES WITH EXIT VELOCITIES EXCEEDING 15 FEET PER SECOND.
6. ALL SPACING FOR CAST-IN-PLACE HEADWALLS AND DISSIPATORS.
7. ANY WALL THICKER THEN 6" WILL BE DOUBLE MATTED WITH REINFORCEMENT REBAR.

SHT 2 OF 2

The City of San Marcos Engineering and Capital Improvements	CURRENT AS OF 1/1/2024	TYPICAL HEADWALL AND ENERGY DISSIPATOR	
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Burns & McDonnell Engineering Co., Inc.
FIRM Reg. No. F-845

date	detailed
DECEMBER 4, 2025	A. KADAM
designed	checked
P. WORLEY	J. GARDER

THE CITY OF SAN MARCOS

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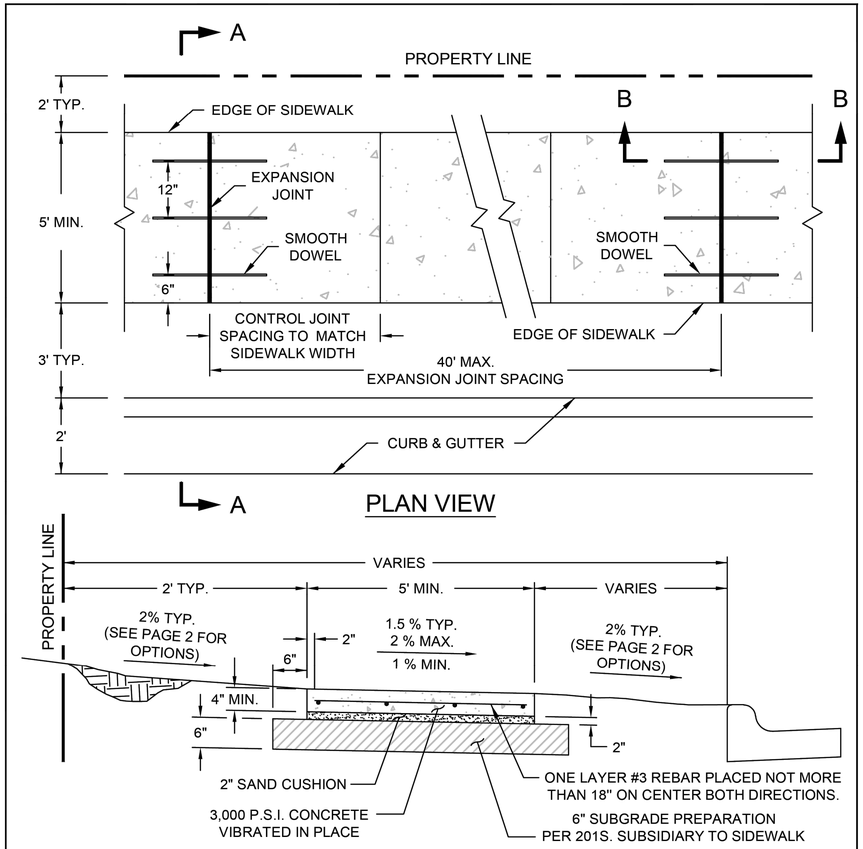


SECTION A - A

NOTES FOR REBAR PLACEMENT:

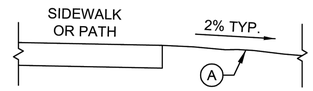
1. REINFORCEMENT SHALL BE ACCURATELY PLACED AT SLAB MID-DEPTH AND HELD FIRMLY IN PLACE BY MEANS OF BAR SUPPORTS OF ADEQUATE STRENGTH AND NUMBER THAT WILL PREVENT DISPLACEMENT AND KEEP THE STEEL AT ITS PROPER POSITION DURING THE PLACEMENT OF THE P.C. CONCRETE.

2. IN NO INSTANCE SHALL THE STEEL BE PLACED DIRECTLY ON THE SUBGRADE, SAND CUSHION LAYER OR CLOSER THAN 2" TO THE OUT SIDE EDGE OF THE CONCRETE.

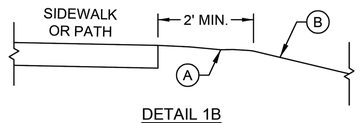
The City of San Marcos Engineering and Capital Improvements	CURRENT AS OF 7/15/2024	SIDEWALK CONSTRUCTION	
RECORD COPY SIGNED BY	7/15/2024	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 432S-1-SM
SHAUN CONDOR, P.E.	ADOPTED		1 OF 2

NOTES:

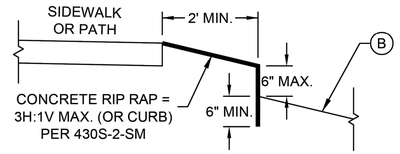
1. CONTROL JOINTS SHALL BE 1/4 INCH WIDE AND 3/4 INCH DEEP TOOLED OR SAW CUT INTO SIDEWALK.
2. CONSTRUCT 3/4" REDWOOD EXPANSION JOINTS AT MAXIMUM 40'- 0" SPACING ALONG LENGTH OF SIDEWALK. EXPANSION JOINTS SHALL INCLUDE SMOOTH DOWELS CENTERED TO THE JOINT AT 12" C-C. PER DETAIL 430S-3-SM.
3. IF SIDEWALK IS ADJOINED TO CURB, COLD JOINT IS REQUIRED, UNLESS APPROVED BY THE CITY INSPECTOR.
4. RAMPS AT INTERSECTION WILL FOLLOW CITY DETAIL 432S-3-SM.
5. MATERIALS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH CITY SPECIFICATIONS.
6. REFER TO SPEC. 410S.25 FOR DEFECTIVE WORK. THE LIMITS OF THE REPLACEMENT SHALL EXTEND FROM JOINT TO JOINT, AS DETERMINED BY THE INSPECTOR.
7. WHEN A DRAINAGE CHANNEL IS LOCATED BEHIND THE SIDEWALK) THE SIDEWALK SHALL BE SLOPED TOWARDS THE CHANNEL.



DETAIL 1A



DETAIL 1B



DETAIL 1C

MAX SLOPES		
MATERIAL	A	B
GRASS	4H : 1V	3H : 1V
CONCRETE	3H : 1V	2H : 1V

(DETAIL 1) : NO PROTECTION REQUIRED

DETAIL 2A

DETAIL 2B

REFERENCES
DETAIL 430S-3-SM
DETAIL 432S-3-SM

(DETAIL 2) : EDGE PROTECTION REQUIRED

WHEN OPTIONS SHOWN IN (DETAIL 1) CAN NOT BE MET

The City of San Marcos Engineering and Capital Improvements	CURRENT AS OF 7/15/2024	SIDEWALK CONSTRUCTION	
RECORD COPY SIGNED BY	7/15/2024	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 432S-1-SM
SHAUN CONDOR, P.E.	ADOPTED		2 OF 2

REFERENCE DRAWING

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BURNS McDONNELL
6200 BRIDGE POINT PARKWAY, SUITE 400
AUSTIN, TX 78730
Burns & McDonnell Engineering Co., Inc.
FIRM Reg. No. F-845

date	detailed
DECEMBER 4, 2025	A. KADAM
designed	checked
P. WORLEY	J. GARDER

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY
CIVIL
REFERENCE DRAWING
COSM STANDARD DETAILS 16

project	contract
187533	

drawing **006TP1REF16–** rev. **0**

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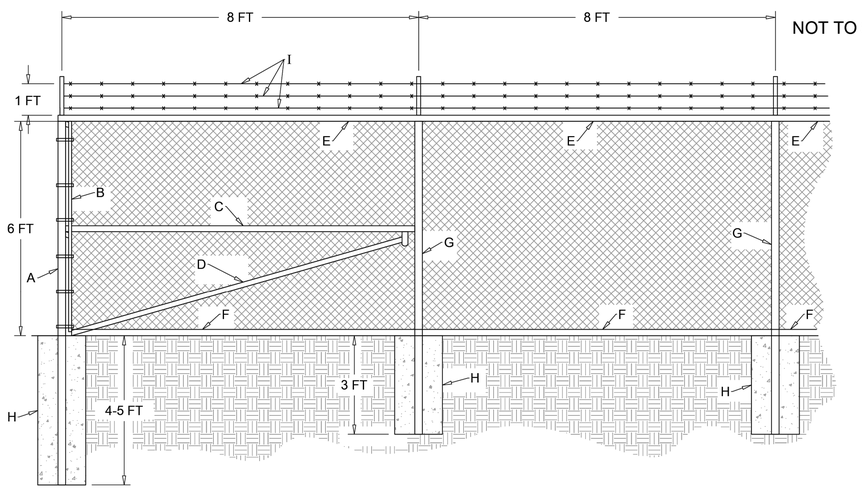


MATERIAL LIST		
I.D.	ITEM	DESCRIPTION
*A	CORNER POST, INTERMEDIATE BRACES AND GATE POST	CORNER AND INTERMEDIATE POST WILL BE STEEL 4" O.D. AT 9.11 LBS/LF GATE POST WILL BE STEEL PIPE (O.D. VARIES SEE SHEET 2 AND 3)
B	TENSION BAND	1/4" X 3/4" STEEL BAND
C	BRACE RAIL	STEEL PIPE 1 5/8" O.D. AT 2.27 LBS/LF
D	DIAGONAL TRUSS ROD	3/8" STEEL TRUSS ROD
E	TOP RAIL	[MATERIAL?] RAIL 1 5/8" O.D. AT 2.27 LBS/LF
F	TENSION WIRE	7 GAUGE, COMPLY WITH ASTM A-824
G	LINE POST	STEEL PIPE 2 3/8" O.D. AT 3.65 LFS/LF
H	CONCRETE	5000 PSI CONCRETE AROUND THE POST. DIAMETER WILL BE A MINIMUM OF 4 TIMES THE POST O.D. DIAMETER. (ITEM "G" LINE POST 9.5" MIN. DIA.) (ITEM "A" CORNER POST AND INTERMEDIATE BRACES 16" MIN. DIA.) (ITEM "A" GATE POST DIA. VARIES SEE SHT 2 OF 3 AND SHT 3 OF 3)
I	BARBED WIRE	1 1/2 GAUGE GALVANIZED (CLASS II ASTM121)

*SEE NOTE 1

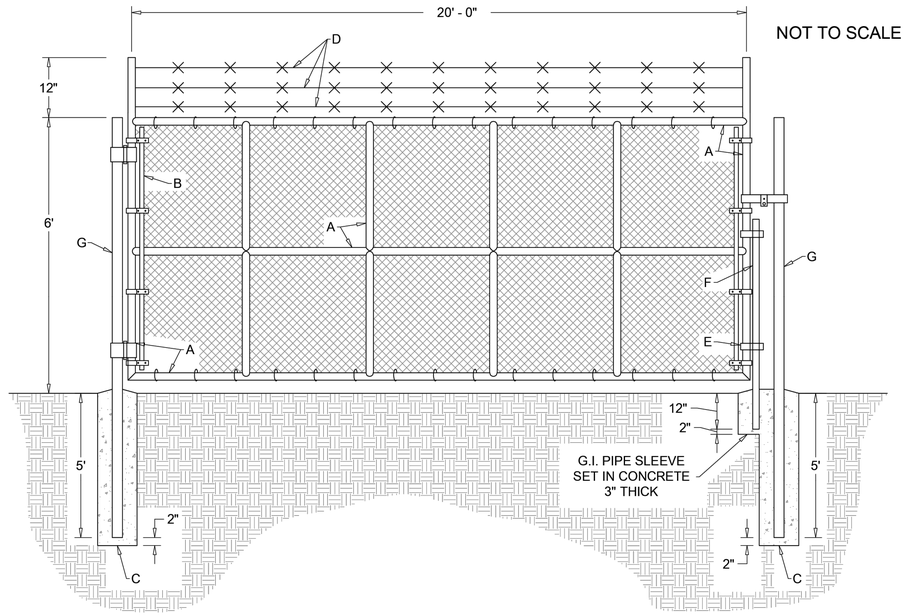
NOTE;

1. ALL ITEMS WILL BE THE SAME ON BOTH SIDES OF THE CORNER POST AND INTERMEDIATE BRACES. SEE (SHT 2 OF 3) AND (SHT 3 OF 3) FOR GATE SIDE OF GATE POST.
2. IF CORNER POST ARE MORE THEN 100 FEET APART OR 100 FEET FROM GATE POST: INTERMEDIATE BRACES WILL BE USED IN INTERVALS NO GREATER THAN 100 FEET.
3. 6 FOOT 2 INCH DIAMOND MESH INTERWOVEN FABRIC (MAXIMUM OF 100 FEET LONG), 9 GAUGE (HEAVY DUTY COMMERCIAL) WILL BE TIED TO TOP RAIL, LINE POSTS, BRACE RAIL, TENSION WIRE AND TENSION BANDS WITH ALUMINUM ALLOY STEEL TIE WIRE AT 15 INCHES ON CENTER.
4. ALL FITTINGS WILL BE GALVANIZED STEEL (SLEEVES, BANDS, CLIPS, RAIL ENDS, TENSION BARS, FASTENERS,...ECT)

SECURITY FENCE

SHT 1 OF 3

The City of San Marcos Engineering and Capital Improvements	CURRENT AS OF 1/1/2024	SECURITY FENCE AND GATE	
RECORDED COPY SIGNED BY LAURIE MOYER, P.E.	3-16-2015 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD	701S-1-SM N.T.S. STANDARD DETAIL



MATERIAL LIST		
I.D.	ITEM	DESCRIPTION
A	GATE FRAME	GATE FRAME SHALL BE 2 3/8 INCH SCHEDULE 40 GALVANIZED STEEL PIPE WITH CENTER AND CROSS BRACING OF SAME MATERIAL AT EQUAL SPACING WITH FULLY WELDED CONSTRUCTION
B	TENSION BAND	1/4" X 3/4" STEEL BAND
C	CONCRETE	5000 PSI CONCRETE AROUND THE POST. DIAMETER WILL BE A MINIMUM OF 4 TIMES THE POST O.D. (GATE POST (MAIN ENTRANCE) 34 1/2" MIN. DIA.)
D	BARBED WIRE	1 1/2 GAGE GALVANIZED (CLASS II ASTM121)
E	PLUNGER ROD GUIDE	2 REQUIRED
F	PLUNGER ROD	1 3/8 INCH O.D.
G	GATE POST	GATE POST WILL BE STEEL PIPE 8 5/8" O.D.

NOTE;

1. 6 FOOT 2 INCH DIAMOND MESH INTERWOVEN FABRIC, 9 GAUGE (HEAVY DUTY COMMERCIAL) WILL BE TIE TO TOP, BOTTOM AND BOTH VERTICAL AND HORIZONTAL CROSS BRACES OF THE FRAME WITH ALUMINUM ALLOY STEEL TIE WIRE AT 15 INCHES ON CENTER.
2. ALL FITTINGS WILL BE GALVANIZED STEEL (SLEEVES, BANDS, CLIPS, RAIL ENDS, TENSION BARS, FASTENERS, PLUNGER ROD, SCREW RESTRAINERS...ETC)
3. GATE HARDWARE: FORK LATCH WITH GRAVITY DROP; TWO 180 DEGREE GATE HINGES PER LEAF AND HARDWARE FOR PADLOCK.

SECURITY GATE

(MAIN ENTRANCE)

SHT 2 OF 3

The City of San Marcos Engineering and Capital Improvements	CURRENT AS OF 1/1/2024	SECURITY FENCE AND GATE	
RECORDED COPY SIGNED BY LAURIE MOYER, P.E.	3-16-2015 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD	701S-1-SM N.T.S. STANDARD DETAIL

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BURNS McDONNELL
6200 BRIDGE POINT PARKWAY, SUITE 400
AUSTIN, TX 78730
Burns & McDonnell Engineering Co., Inc.
FIRM Reg. No. F-845

date	detailed
DECEMBER 4, 2025	A. KADAM
designed	checked
P. WORLEY	J. GARDER

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY

CIVIL
REFERENCE DRAWING
COSM STANDARD DETAILS 17

project	contract
187533	

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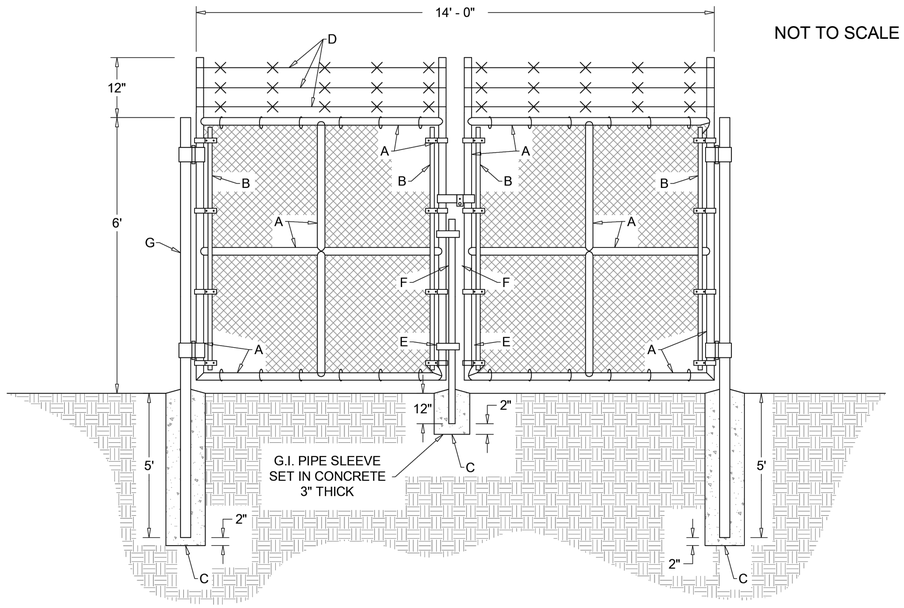
file 187533_006TP1REF.DWG



NOT TO SCALE

MATERIAL LIST		
I.D.	ITEM	DESCRIPTION
A	GATE FRAME	GATE FRAME SHALL BE 1 7/8 INCH SCHEDULE 40 GALVANIZED PIPE WITH CENTER AND CROSS BRACING OF SAME MATERIAL WITH FULLY WELDED CONSTRUCTION
B	TENSION BAND	1/4" X 3/4" STEEL BAND
C	CONCRETE	5000 PSI CONCRETE AROUND THE POST. DIAMETER WILL BE A MINIMUM OF 4 TIMES THE POST O.D. (GATE POST (MAINTENANCE YARD) 24" MIN. DIA.)
D	BARBED WIRE	1 1/2 GAGE GALVANIZED (CLASS II ASTM121)
E	PLUNGER ROD GUIDE	2 REQUIRED
F	PLUNGER ROD	1 3/8 INCH O.D.
G	GATE POST	GATE POST WILL BE STEEL PIPE 6" O.D.

NOTE;

1. 6 FOOT 2 INCH DIAMOND MESH INTERWOVEN FABRIC, 9 GAUGE (HEAVY DUTY COMMERCIAL) WILL BE TIE TO TOP, BOTTOM AND BOTH VERTICAL AND HORIZONTAL CROSS BRACES OF THE FRAME WITH ALUMINUM ALLOY STEEL TIE WIRE AT 15 INCHES ON CENTER.
2. ALL FITTINGS WILL BE GALVANIZED STEEL (SLEEVES, BANDS, CLIPS, RAIL ENDS, TENSION BARS, FASTENERS, PLUNGER ROD, SCREW RESTRAINERS...ETC)
3. GATE HARDWARE: FORK LATCH WITH GRAVITY DROP; TWO 180 DEGREE GATE HINGES PER LEAF AND HARDWARE FOR PADLOCK.

SECURITY GATE

(MAINTENANCE YARD)

SHT 3 OF 3

The City of San Marcos Engineering and Capital Improvements	CURRENT AS OF 1/1/2024	SECURITY FENCE AND GATE	
RECORDED COPY SIGNED BY LAURIE MOYER, P.E.	3-16-2015 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD	701S-1-SM N.T.S. STANDARD DETAIL

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BURNS McDONNELL
6200 BRIDGE POINT PARKWAY, SUITE 400
AUSTIN, TX 78730
Burns & McDonnell Engineering Co., Inc.
FIRM Reg. No. F-845

date	detailed
DECEMBER 4, 2025	A. KADAM
designed	checked
P. WORLEY	J. GARDER

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY

CIVIL
REFERENCE DRAWING
COSM STANDARD DETAILS 18

project	contract
187533	

drawing **006TP1REF18–** rev. **0**

sheet of sheets

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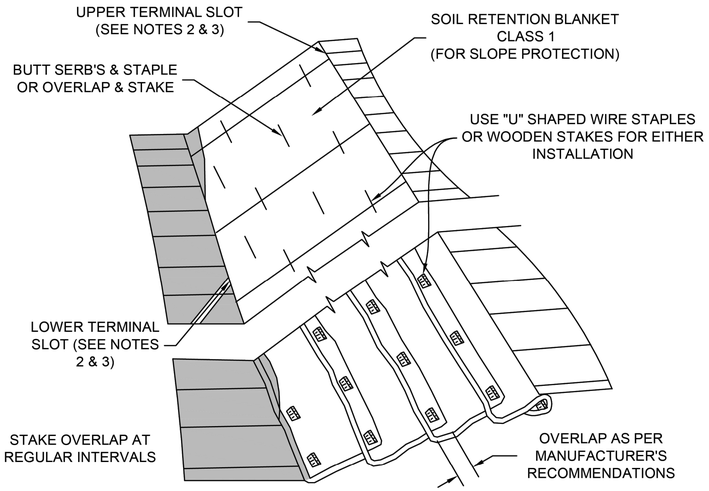
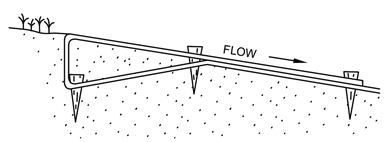
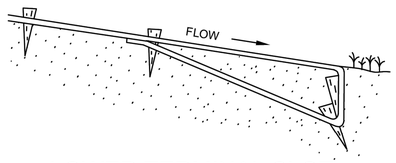




UPPER TERMINAL SLOT



LOWER TERMINAL SLOT

NOTES

1. INSTALL SOIL RETENTION BLANKETS (SERB'S) BEGINNING AT THE DOWNSTREAM END AND PROCEED UPSTREAM.
2. THE LOCATION, SPACING AND CONFIGURATION OF UPPER AND LOWER TERMINAL SLOTS, CHECK SLOTS, ETC. MAY VARY FOR EACH CLASS AND TYPE OF SERB ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS. FIRMLY TAMP TOPSOIL BACKFILL INTO ALL TERMINAL SLOTS.
3. SERB EDGES ALONG THE TOP SLOPE OR TOE OF SLOPE SHALL BE ANCHORED AS PER MANUFACTURER'S RECOMMENDATIONS.
4. THE "U" SHAPED WIRE STAPLES ARE TO BE INSTALLED AT 90° TO THE SLOPE PLANE. IF WIRE STAPLES PROVE TO BE AN UNSATISFACTORY METHOD OF SECURING THE SERB IN AREAS OF ROCK, RAILROAD SPIKES OR 60 PENNY NAILS MAY BE SUBSTITUTED WITH APPROVAL OF THE ENGINEER.
5. WIRE STAPLES SHALL BE MADE FROM NOT LESS THAN 13" LENGTHS OF NO. 11 WIRE BENT TO FORM A "U" APPROXIMATELY 1" IN WIDTH.
6. WOOD STAKES SHALL BE A MINIMUM LENGTH OF 10". WOOD DIAGONAL STAKES MAY BE USED.
7. IMMEDIATELY AFTER THE SERB HAS BEEN SECURED TO THE GROUND, THE AREA COVERED SHALL BE SPRINKLED AND ROLLED WITH A LIGHT ROLLER OF SUFFICIENT WEIGHT TO PRESS THE BLANKET INTO THE SURFACE OF THE SOIL. THE ROLLER SHALL BE OF SUCH WEIGHT TO AVOID OVER-COMPACTION OF THE SEEDBED.
8. FOLLOW MANUFACTURERS SPECIFICATIONS FOR INSTALLMENT.
9. REFER TO COSM SPECIFICATION 605S FOR ADDITIONAL DETAILS.
10. SOD MAY BE USED IN LIEU OF SOIL RETENTION BLANKETS FOR SLOPE LESS THAN 4H:1V.

The City of San Marcos Engineering and Capital Improvements	CURRENT AS OF 1/1/2024	SOIL RETENTION BLANKET	
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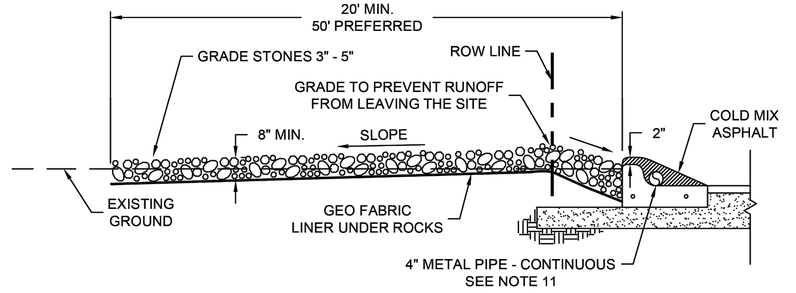
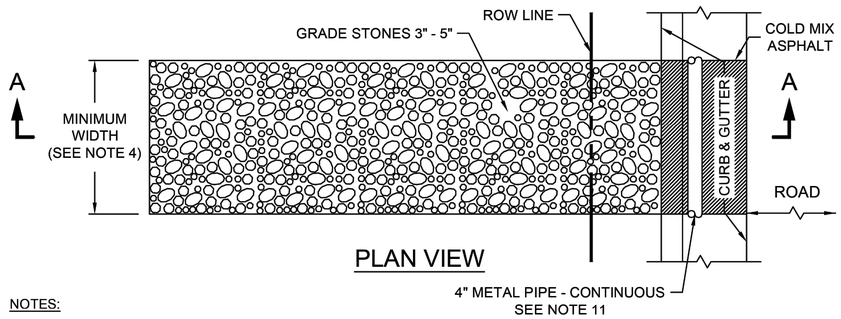


PROFILE SECTION A-A



PLAN VIEW

NOTES:

1. STONE SIZE: 3-5" OPEN GRADED ROCK.
2. LENGTH: 50' PREFERRED OR AS EFFECTIVE BUT NOT LESS THAN 20'.
3. THICKNESS: NOT LESS THAN 8".
4. WIDTH: NOT LESS THAN FULL WIDTH OF ALL POINTS OF INGRESS/EGRESS.
5. DIMENSIONS OF SITE WILL DICTATE THE DIMENSIONS OF THE STABILIZED CONSTRUCTION ENTRANCES IF THE PREFERRED DIMENSIONS ARE NOT POSSIBLE ON SITE.
6. WASHING: WHEN NECESSARY, VEHICLE WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC ROADWAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED TRAP OR SEDIMENT BASIN. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH OR WATERCOURSE USING APPROVED METHODS.
7. MAINTENANCE: THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC ROADWAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND, AS WELL AS REPAIR AND CLEAN OUT OF ANY MEASUREMENT DEVICES USED TO TRAP SEDIMENT. ALL SEDIMENT THAT IS SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC ROADWAY MUST BE REMOVED IMMEDIATELY.
8. DRAINAGE: ENTRANCE MUST BE PROPERLY GRADED OR INCORPORATE A DRAINAGE SWALE TO PREVENT RUNOFF FROM LEAVING THE CONSTRUCTION SITE.
9. WHEN ALL SITE WORK IS COMPLETED, REMOVE STABILIZED CONSTRUCTION ENTRANCE COMPLETELY. REGRADE TO ORIGINAL CONDITION, ELEVATION AND RESTORE TO MATCH EXISTING OR PROPOSED CONDITIONS.
10. TOP OF GRADE STONES SHALL MATCH TOP OF EXISTING PAVEMENT OR CURB. COLD MIX ASPHALT & 4" METAL PIPE OR ALTERNATIVE WILL NOT BE REQUIRED WHERE THERE IS NO CATCH OR SPILL CURB.
11. PRE-FABRICATED CURB RAMPS ARE AN ACCEPTABLE ALTERNATIVE TO COLD MIX ASPHALT AND 4" METAL PIPE.

The City of San Marcos Engineering and Capital Improvements	CURRENT AS OF 1/1/2024	STABILIZED CONSTRUCTION ENTRANCE	
RECORD COPY SIGNED BY LAURIE MOYER, P.E.	1/1/2021 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 641S-1-SM 1 OF 1

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BURNS McDONNELL
6200 BRIDGE POINT PARKWAY, SUITE 400
AUSTIN, TX 78730
Burns & McDonnell Engineering Co., Inc.
FIRM Reg. No. F-845

date	detailed
DECEMBER 4, 2025	A. KADAM
designed	checked
P. WORLEY	J. GARDER

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY
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REFERENCE DRAWING
COSM STANDARD DETAILS 19

project	contract
187533	

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sheet of sheets
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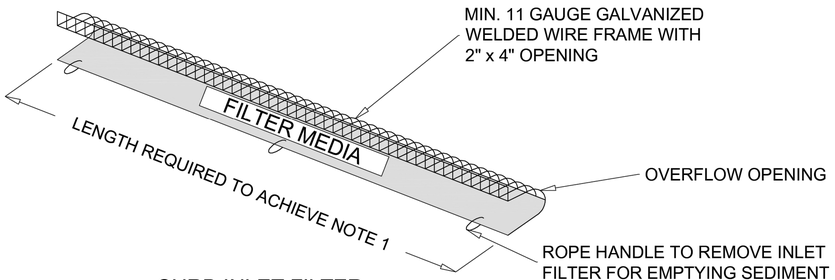
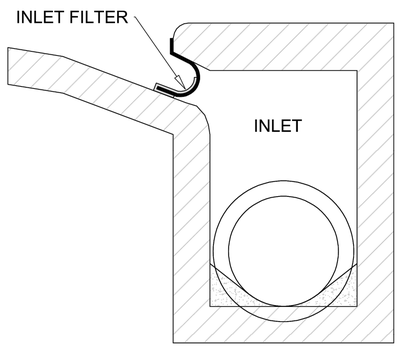
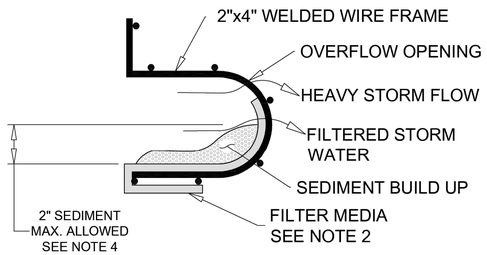


CURB INLET FILTER





CURB INLET FILTER CROSS-SECTION

CURB INLET FILTER CROSS-SECTION
SHOWING INLET PLACEMENT

NOTE:
1. THE INLET FILTER SHALL BE INSERTED INTO THE CURB INLET TO CREATE A COMPRESSION FIT IN THE INLET
2. THE FILTER MEDIA FOR PROJECTS WITHIN CITY OF SAN MARCOS JURISDICTION IS TO BE WOVEN FILTER FABRIC WITH A MINIMUM WATER FLOW RATE OF 300 GALLONS A MINUTE PER SQUARE FOOT (300 GAL/MIN/SF) .
3. THE FILTER MEDIA IS TO BE ATTACHED TO THE WIRE FRAME WITH HOG RINGS LEAVING AN OVERFLOW OPENING ABOVE THE FILTER MEDIA.
4. INSPECTION SHALL BE MADE BY THE CONTRACTOR WEEKLY AND WITHIN 24 HOURS OF A RAIN EVENT AND SILT ACCUMULATION MUST BE REMOVED WHEN THE DEPTH REACHES 2 INCHES.
5. INLET FILTER WILL BE REMOVED UPON STABILIZATION OF SEDIMENT SOURCES

The City of San Marcos Engineering and Capital Improvements	CURRENT AS OF 1/1/2024	CURB INLET PROTECTION	
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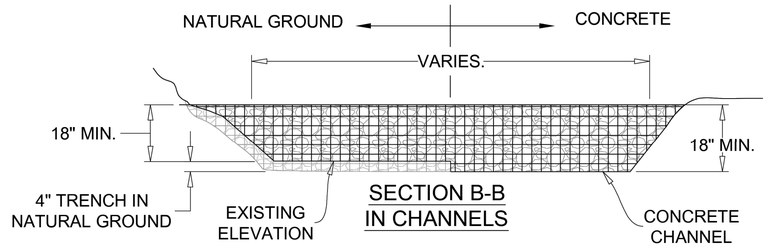
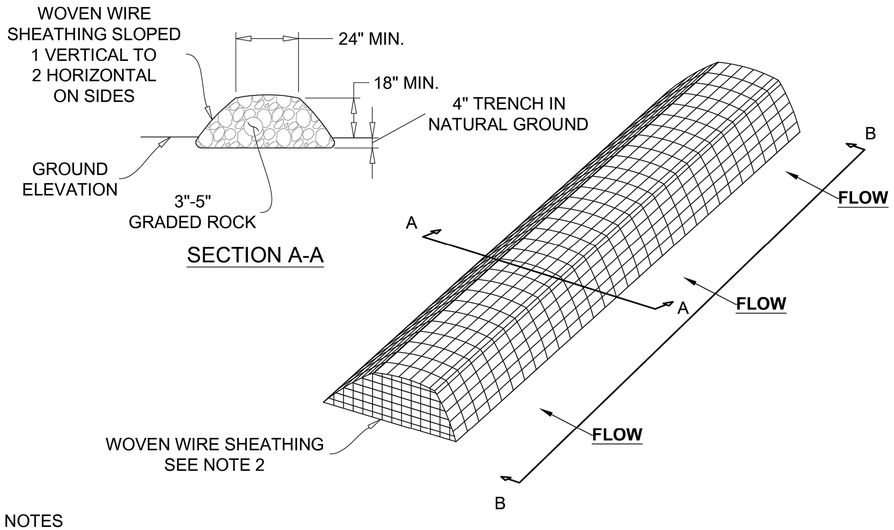


SECTION B-B
IN CHANNELS



SECTION A-A

NOTES

1. USE ONLY OPEN GRADED ROCK 3"-5" IN DIAMETER.
2. THE ROCK BERM SHALL BE SECURED WITH A WOVEN WIRE SHEATHING HAVING MAXIMUM 1" OPENINGS AND MINIMUM WIRE DIAMETER OF 20 GAUGE.
3. THE ROCK BERM SHALL BE INSPECTED WEEKLY OR AFTER EACH RAIN, AND THE STONE AND/OR FABRIC CORE-WOVEN WIRE SHEATHING SHALL BE REPLACED WHEN THE STRUCTURE CEASES TO FUNCTION AS INTENDED DUE TO SILT ACCUMULATION AMONG THE ROCKS, WASHOUT CONSTRUCTION, TRAFFIC DAMAGE, ETC.
4. WHEN SILT REACHES A DEPTH EQUAL TO 6", THE SILT WILL BE REMOVED AND DISPOSED OF IN AN APPROVED SITE AND IN SUCH A MANNER AS TO NOT CREATE A SILTATION PROBLEM.
5. DAILY INSPECTION SHALL BE MADE ON SEVERE SERVICE ROCK BERMS.
6. WHEN THE SITE IS COMPLETELY STABILIZED, THE BERM AND ACCUMULATED SILT SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED MANNER.

The City of San Marcos Engineering and Capital Improvements	CURRENT AS OF 1/1/2024	ROCK BERM DETAIL	
RECORDED COPY SIGNED BY LAURIE MOYER, P.E.	8/4/2014 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD	639S-1-SM N.T.S. STANDARD DETAIL

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BURNS McDONNELL
6200 BRIDGE POINT PARKWAY, SUITE 400
AUSTIN, TX 78730
Burns & McDonnell Engineering Co., Inc.
FIRM Reg. No. F-845

date	detailed
DECEMBER 4, 2025	A. KADAM
designed	checked
P. WORLEY	J. GARDER

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY
CIVIL
REFERENCE DRAWING
COSM STANDARD DETAILS 20

project	contract
187533	

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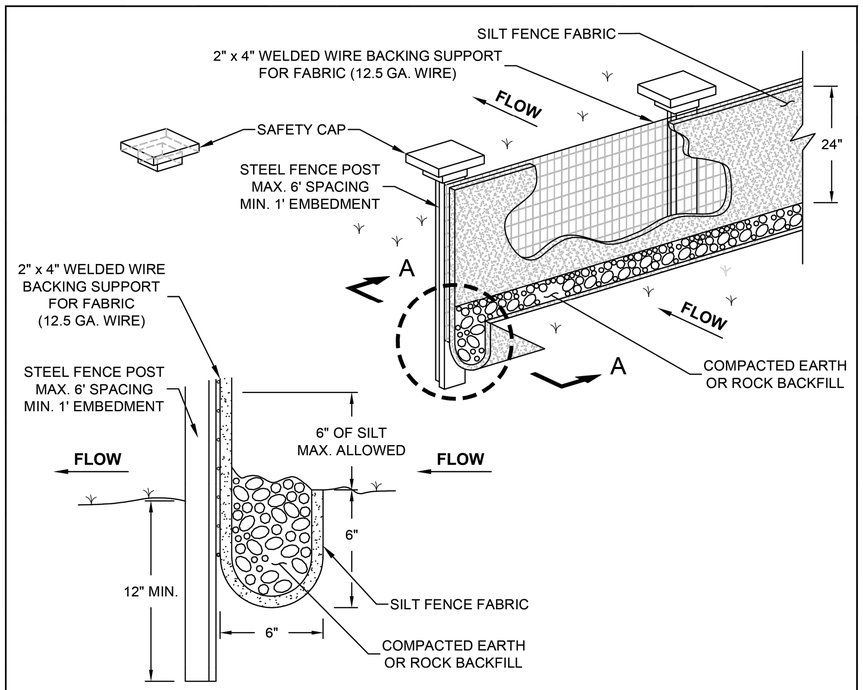
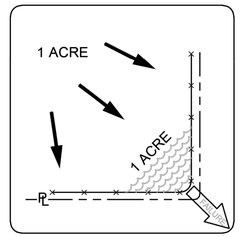


SECTION A-A

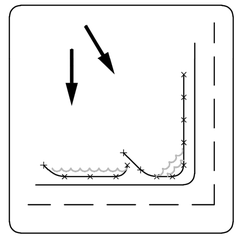
NOTES:

1. STEEL POSTS WHICH SUPPORT THE SILT FENCE SHALL BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POSTS SHALL MATCH THE TOP OF THE FENCE. POSTS MUST BE EMBEDDED A MINIMUM OF 1'.
2. THE TOE OF THE SILT FENCE SHALL BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWNSLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW.
3. THE TRENCH MUST BE A MINIMUM OF 6" DEEP AND 6" WIDE TO ALLOW FOR THE SILT FENCE FABRIC TO BE LAID IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.
4. SILT FENCE SHOULD BE SECURELY FASTENED TO EACH STEEL SUPPORT POST OR TO WOVEN WIRE, WHICH IS IN TURN ATTACHED TO THE STEEL FENCE POST.
5. INSPECTION SHALL BE MADE WEEKLY AND REPAIR OR REPLACEMENT SHALL BE MADE WITHIN 24 HOURS OF INSPECTION.
6. SILT FENCE SHALL BE REMOVED WHEN THE SITE IS PERMANENTLY STABILIZED SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.
7. ACCUMULATED SILT SHALL BE REMOVED WITHIN 24 HOURS WHEN IT REACHES A DEPTH OF 6" OR AS DIRECTED BY OWNER. THE SILT SHALL BE DISPOSED OF ON AN APPROVED SITE AND IN SUCH A MANNER THAT WILL NOT CONTRIBUTE TO ADDITIONAL SILTATION.
8. INSTALL J-HOOK SPACING PER ENGINEER'S DESIGN , BUT NOT TO EXCEED 200'.

The City of San Marcos Engineering and Capital Improvements	CURRENT AS OF 1/1/2024	SILT FENCE	
RECORD COPY SIGNED BY LAURIE MOYER, P.E.	1/1/2020 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 642S-1-SM 1 OF 2

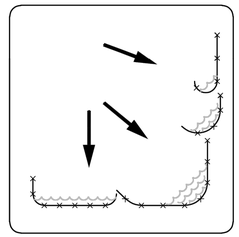


INCORRECT - DO NOT LAYOUT "PERIMETER CONTROL" SILT FENCE ALONG PROPERTY LINES. ALL SEDIMENT LADEN RUNOFF WILL CONCENTRATE AND OVERWHELM THE SYSTEM.



CORRECT - INSTALL J-HOOKS

SILT FENCE TURNBACK DETAIL

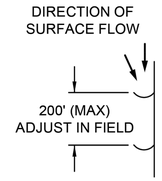


CORRECT - DISCREET SEGMENTS OF SILT FENCE INSTALLED WITH J-HOOKS OR 'SMILES' WILL BE MUCH MORE EFFECTIVE.

SILT FENCE PLACEMENT FOR PERIMETER CONTROL

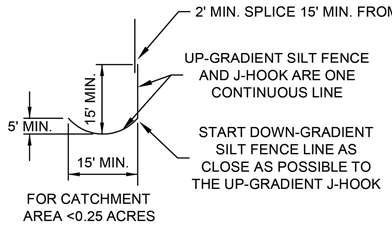
PLAN VIEW

I. SPACING REQUIREMENTS:



NOTE: SEE ENGINEER'S DESIGN PLANS FOR SPACING. MAX SPACING SHALL BE 200'

II. SIZING REQUIREMENTS:



FOR CATCHMENT AREA <0.25 ACRES

The City of San Marcos Engineering and Capital Improvements	CURRENT AS OF 1/1/2024	SILT FENCE	
RECORD COPY SIGNED BY LAURIE MOYER, P.E.	1/1/2020 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 642S-1-SM 2 OF 2

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FIRM Reg. No. F-845

date	detailed
DECEMBER 4, 2025	A. KADAM
designed	checked
P. WORLEY	J. GARDER

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY
CIVIL
REFERENCE DRAWING
COSM STANDARD DETAILS 21

project	contract
187533	

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sheet of sheets

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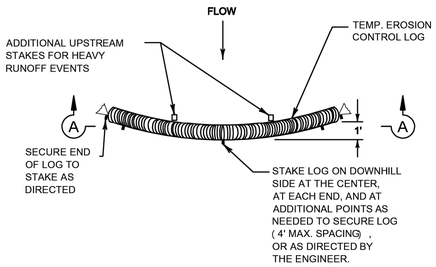
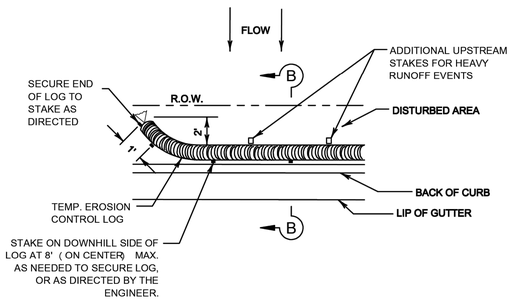
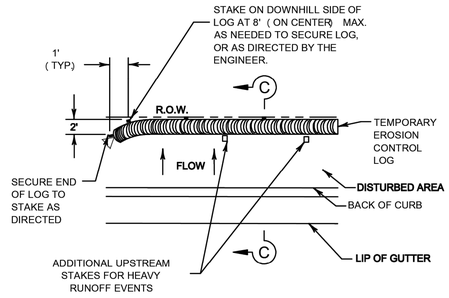


PLAN VIEW



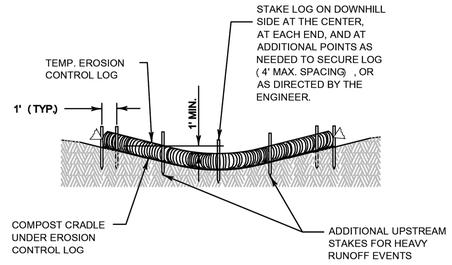
PLAN VIEW



PLAN VIEW

GENERAL NOTES:

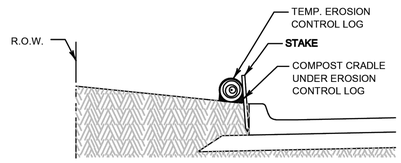
1. EROSION CONTROL LOGS SHALL BE INSTALLED IN ACCORDANCE WITH MANFACTURER'S RECOMMENDATIONS, OR AS DIRECTED BY THE ENGINEER.
2. LENGTHS OF EROSION CONTROL LOGS SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND AS REQUIRED FOR THE PURPOSE INTENDED.
3. UNLESS OTHERWISE DIRECTED, USE BIODEGRADABLE OR PHOTODEGRADABLE CONTAINMENT MESH ONLY WHERE LOG WILL REMAIN IN PLACE AS PART OF A VEGETATIVE SYSTEM. FOR TEMPORARY INSTALLATIONS, USE RECYCLABLE CONTAINMENT MESH.
4. FILL LOGS WITH SUFFICIENT FILTER MATERIAL TO ACHIEVE THE MINIMUM COMPACTED DIAMETER SPECIFIED IN THE PLANS WITHOUT EXCESSIVE DEFORMATION.
5. STAKES SHALL BE 2" X 2" WOOD OR #3 REBAR, 2'-4' LONG, EMBEDDED SUCH THAT 2" PROTRUDES ABOVE LOG, OR AS DIRECTED BY THE ENGINEER.
6. DO NOT PLACE STAKES THROUGH CONTAINMENT MESH.
7. COMPOST CRADLE MATERIAL IS INCIDENTAL & WILL NOT BE PAID FOR SEPARATELY.
8. SANDBAGS USED AS ANCHORS SHALL BE PLACED ON TOP OF LOGS & SHALL BE OF SUFFICIENT SIZE TO HOLD LOGS IN PLACE.
9. TURN THE ENDS OF EACH ROW OF LOGS UPSLOPE TO PREVENT RUNOFF FROM FLOWING AROUND THE LOG.
10. FOR HEAVY RUNOFF EVENTS, ADDITIONAL UPSTREAM STAKES MAY BE NECESSARY TO KEEP LOG FROM FOLDING IN ON ITSELF.



SECTION A-A

EROSION CONTROL LOG DAM

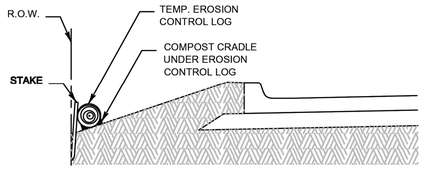
CL-D



SECTION B-B

EROSION CONTROL LOG AT BACK OF CURB

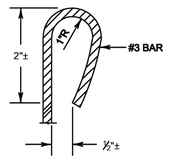
CL-BOC



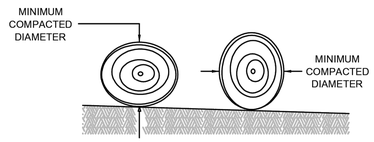
SECTION C-C

EROSION CONTROL LOG AT EDGE OF RIGHT-OF-WAY

CL-ROW



REBAR STAKE DETAIL



DIAMETER MEASUREMENTS OF EROSION CONTROL LOGS SPECIFIED IN PLANS

LEGEND

- CL-D — EROSION CONTROL LOG DAM
- CL-BOC — EROSION CONTROL LOG AT BACK OF CURB
- CL-ROW — EROSION CONTROL LOG AT EDGE OF RIGHT-OF-WAY
- CL-SST — EROSION CONTROL LOGS ON SLOPES STAKE AND TRENCHING ANCHORING
- CL-SSL — EROSION CONTROL LOGS ON SLOPES STAKE AND LASHING ANCHORING
- CL-DI — EROSION CONTROL LOG AT DROP INLET
- CL-CI — EROSION CONTROL LOG AT CURB INLET
- CL-GI — EROSION CONTROL LOG AT CURB & GRATE INLET

SEDIMENT BASIN & TRAP USAGE GUIDELINES

An erosion control log sediment trap may be used to filter sediment out of runoff draining from an unstabilized area.

Log Traps: The drainage area for a sediment trap should not exceed 5 acres. The trap capacity should be 1800 CF/Acre (0.5" over the drainage area) .

Control logs should be placed in the following locations:

1. Within drainage ditches spaced as needed or min. 500' on center
2. Immediately preceding ditch inlets or drain inlets
3. Just before the drainage enters a water course
4. Just before the drainage leaves the right of way
5. Just before the drainage leaves the construction limits where drainage flows away from the project.

The logs should be cleaned when the sediment has accumulated to a depth of 1/2 the log diameter.

Cleaning and removal of accumulated sediment deposits is incidental and will not be paid for separately.

The City of San Marcos Engineering and Capital Improvements	CURRENT AS OF 1/1/2024
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LAURIE MOYER, P.E.	ADOPTED
MULCH SOCK	
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FIRM Reg. No. F-845

date	detailed
DECEMBER 4, 2025	A. KADAM
designed	checked
P. WORLEY	J. GARDER

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY

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project	contract
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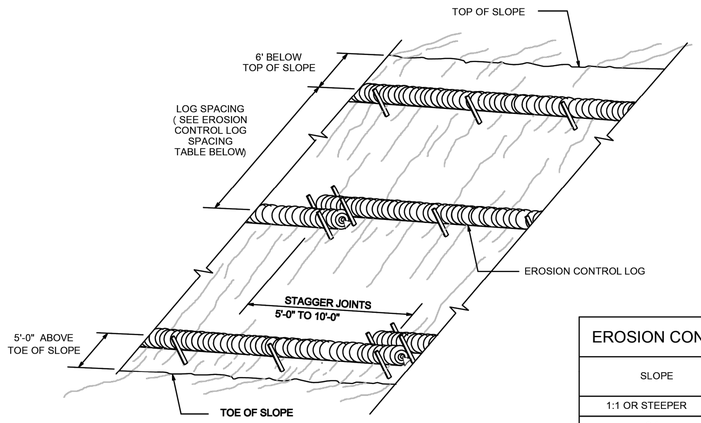
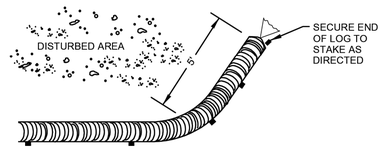


EROSION CONTROL LOGS ON SLOPES
STAKE AND TRENCHING ANCHORING

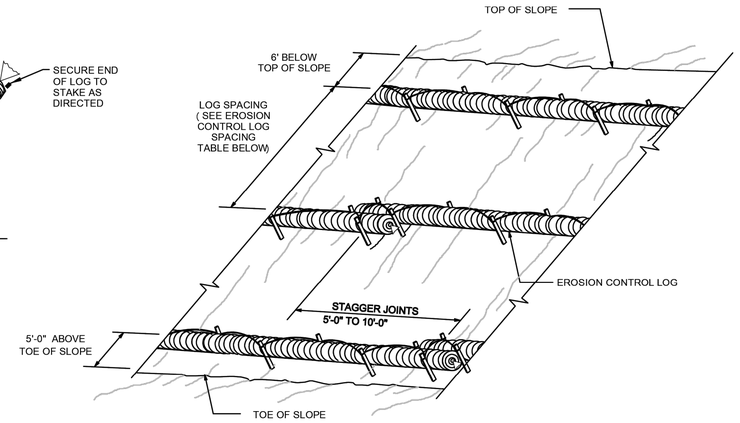
CL-SST



END SECTION RAP DETAIL

EROSION CONTROL LOG SPACING TABLE				
SLOPE	LOG DIAMETER			
	6"	8"	12"	18"
1:1 OR STEEPER	5'	10'	15'	20'
2:1	10'	20'	30'	40'
3:1	15'	30'	45'	60'
4:1 OR FLATTER	20'	40'	60'	80'

* ADJUSTMENTS CAN BE MADE FOR SOIL TYPE:
SOFT, LOAMY SOILS-ADJUST ROWS CLOSER TOGETHER;
HARD, ROCKY SOILS- ADJUST ROWS FARTHER APART



EROSION CONTROL LOGS ON SLOPES
STAKE AND LASHING ANCHORING

CL-SSL

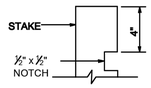
STAKE AND TRENCHING ANCHORING DETAIL

CL-SST

TRENCH DEPTH TABLE	
LOG DIAMETER	DEPTH
6"	2"
8"	3"
12"	4"
18"	5"

STAKE AND LASHING ANCHORING DETAIL

CL-SSL



STAKE NOTCH DETAIL

The City of San Marcos Engineering and Capital Improvements	CURRENT AS OF 1/1/2024
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date	detailed
DECEMBER 4, 2025	A. KADAM
designed	checked
P. WORLEY	J. GARDER

THE CITY OF SAN MARCOS

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project	contract
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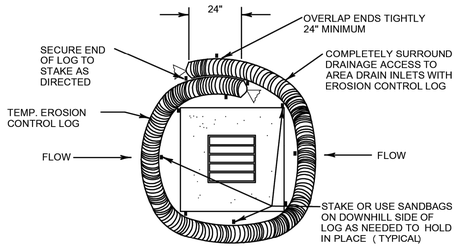
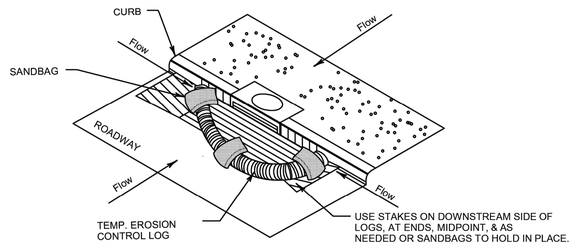


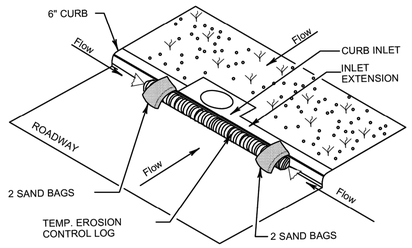
EROSION CONTROL LOG AT DROP INLET

CL-DI



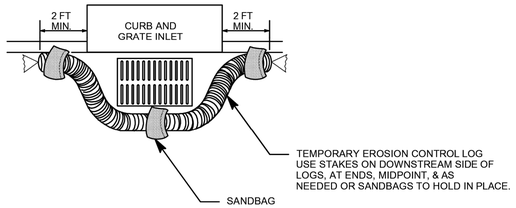
EROSION CONTROL LOG AT CURB INLET

CL-CI



EROSION CONTROL LOG AT CURB INLET

CL-CI

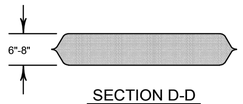


EROSION CONTROL LOG AT CURB & GRADE INLET

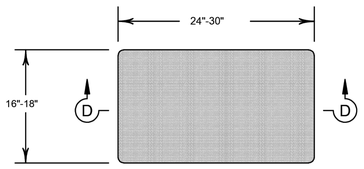
CL-GI

NOTE:

EROSION CONTROL LOGS USED AT CURB INLETS SHOULD ONLY BE USED IF THEY WILL NOT IMPEDE TRAFFIC OR FLOOD THE ROADWAY OR WHEN THE STORM SEWER SYSTEM IS NOT FULLY FUNCTIONAL.



SECTION D-D



SANDBAG DETAIL

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DECEMBER 4, 2025	A. KADAM
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P. WORLEY	J. GARDER

THE CITY OF SAN MARCOS

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REFERENCE DRAWING
COSM STANDARD DETAILS 24

project	contract
187533	

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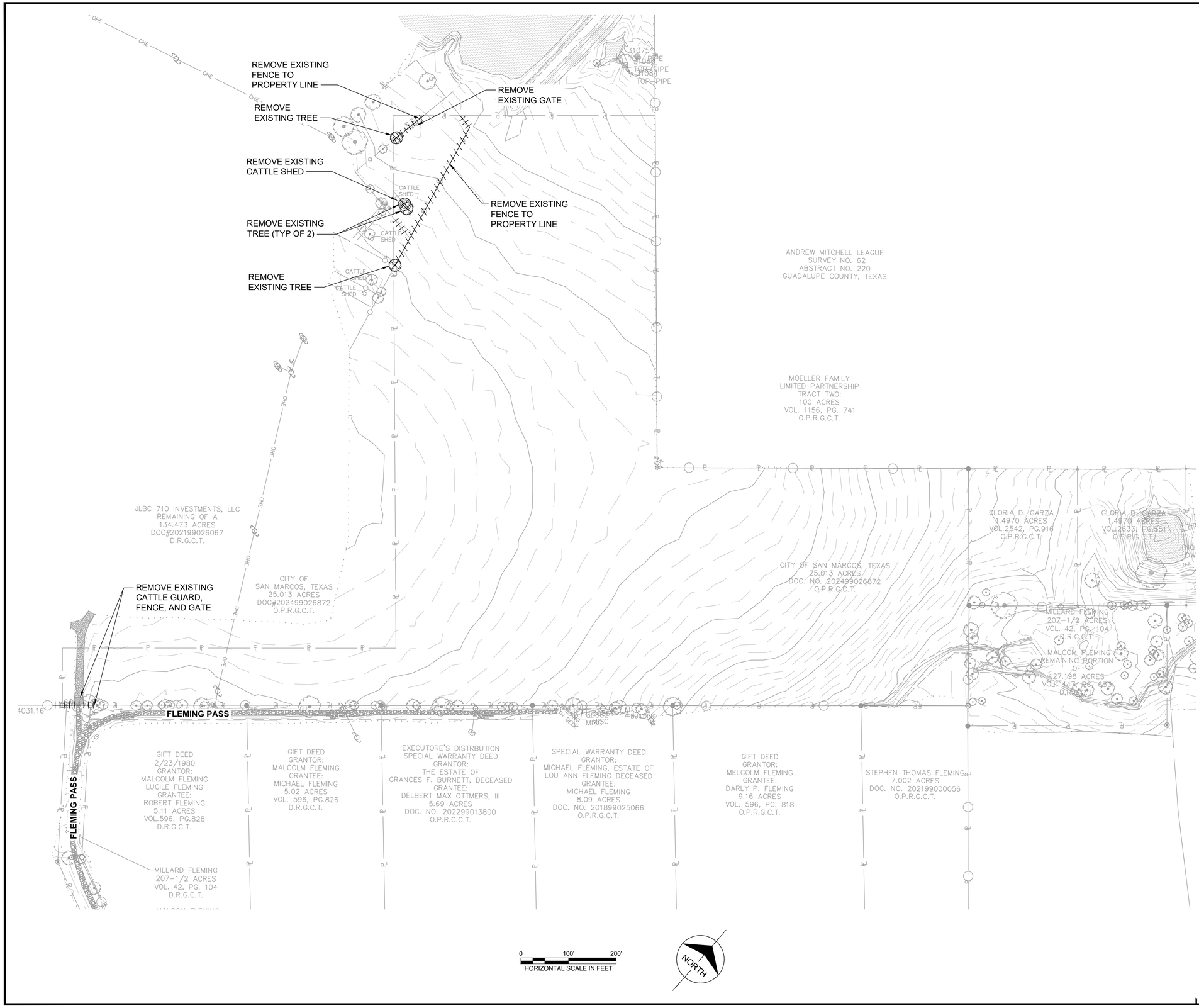

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FIRM Reg. No. F-845

date	detailed
JANUARY 22, 2026	A. KADAM
designed	checked
P. WORLEY	J. GARDER

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY
CIVIL
OVERALL DEMOLITION PLAN

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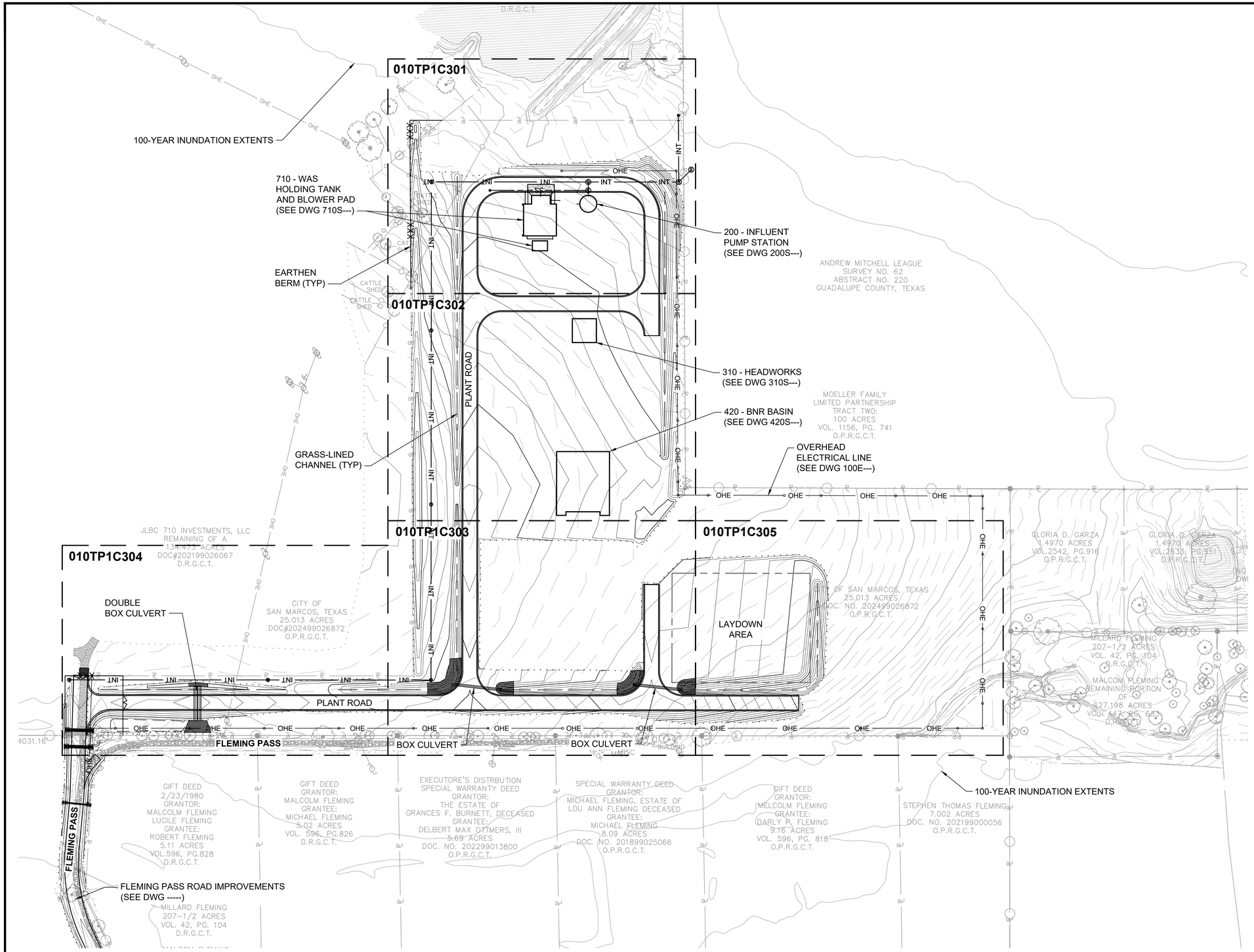

NOTES:

1. PLANT ROAD SHALL BE AGGREGATE PAVEMENT UNLESS NOTED OTHERWISE. SEE DWG 006TP1C501.

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0	04/03/26	PMW	JLG	GMP 1/2: ISSUED FOR BID

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BURNS McDONNELL

6200 BRIDGE POINT PARKWAY, SUITE 400
AUSTIN, TX 78730
Burns & McDonnell Engineering Co., Inc.
FIRM Reg. No. F-845

date	detailed
JANUARY 22, 2026	A. KADAM
designed	checked
P. WORLEY	J. GARDER

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY

CIVIL

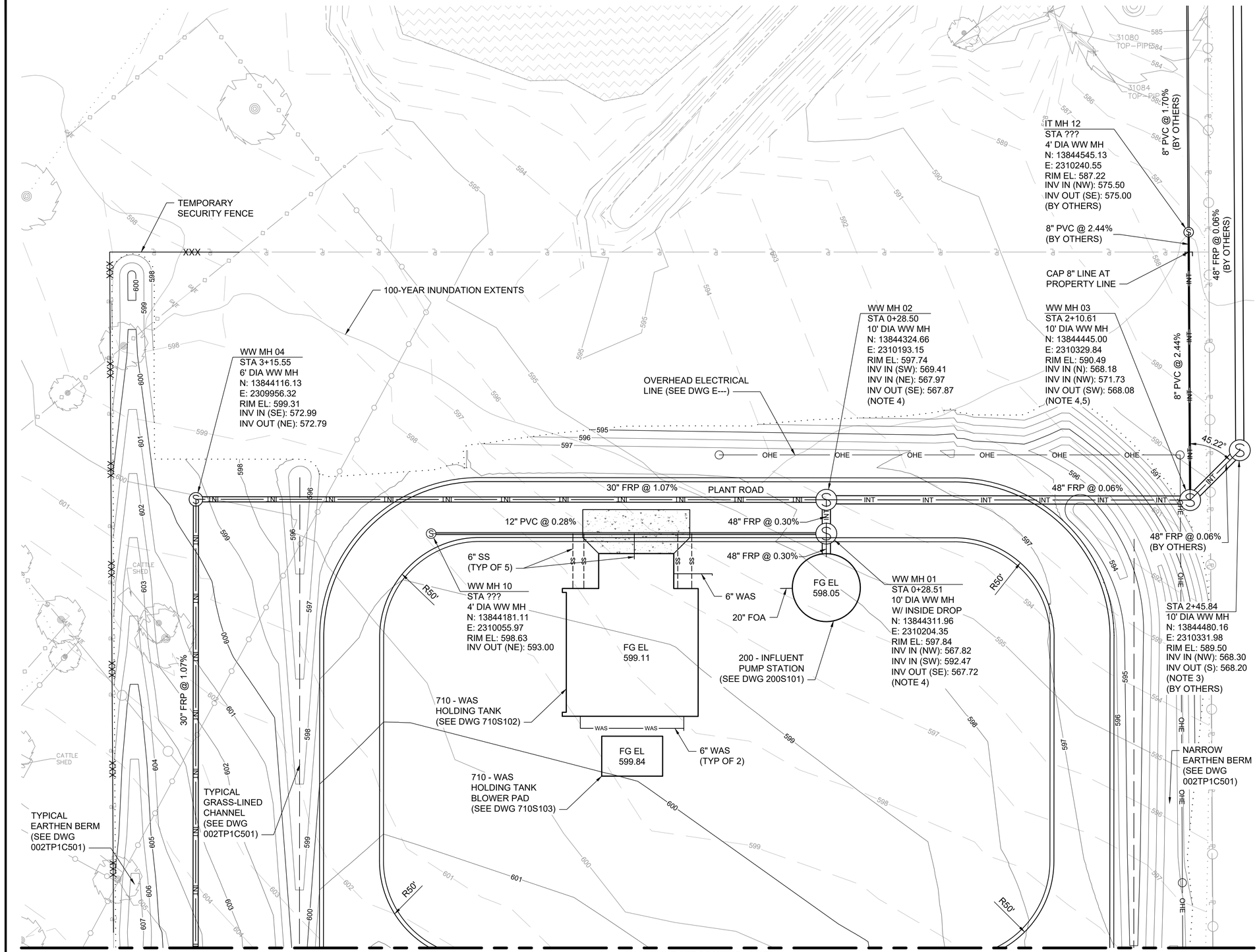
OVERALL SITE, GRADING, AND PIPING PLAN

project	contract
187533	

drawing **010TP1C101** — rev. **0**

sheet of sheets

file 187533_010TP1C101.DWG



NOTES:

1. SEE DWG 010TP1C310 FOR SITE AND GRADING POINT TABLES.
2. SEE DWG 010TP1C311 FOR PIPING POINT TABLES.
3. MANHOLE LOCATED OUTSIDE OF SURVEY LIMITS. RIM ELEVATION APPROXIMATE; SUBCONTRACTOR TO VERIFY RIM ELEVATION.
4. WASTEWATER MANHOLES THAT ARE 10-FT DIAMETER SHALL BE ARMOROCK POLYMER CONCRETE OR APPROVED EQUAL.
5. PROVIDE KNOCKOUT IN MANHOLE FOR FUTURE 48-INCH CONNECTION.

MATCHLINE SEE DRAWING - 010TP1C302

0 25' 50'
SCALE IN FEET

NORTH

no.	date	by	ckd	description
0	04/03/26	PMW	JLG	GMP 1/2: ISSUED FOR BID

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BURNS McDONNELL
6200 BRIDGE POINT PARKWAY, SUITE 400
AUSTIN, TX 78730
Burns & McDonnell Engineering Co., Inc.
FIRM Reg. No. F-845

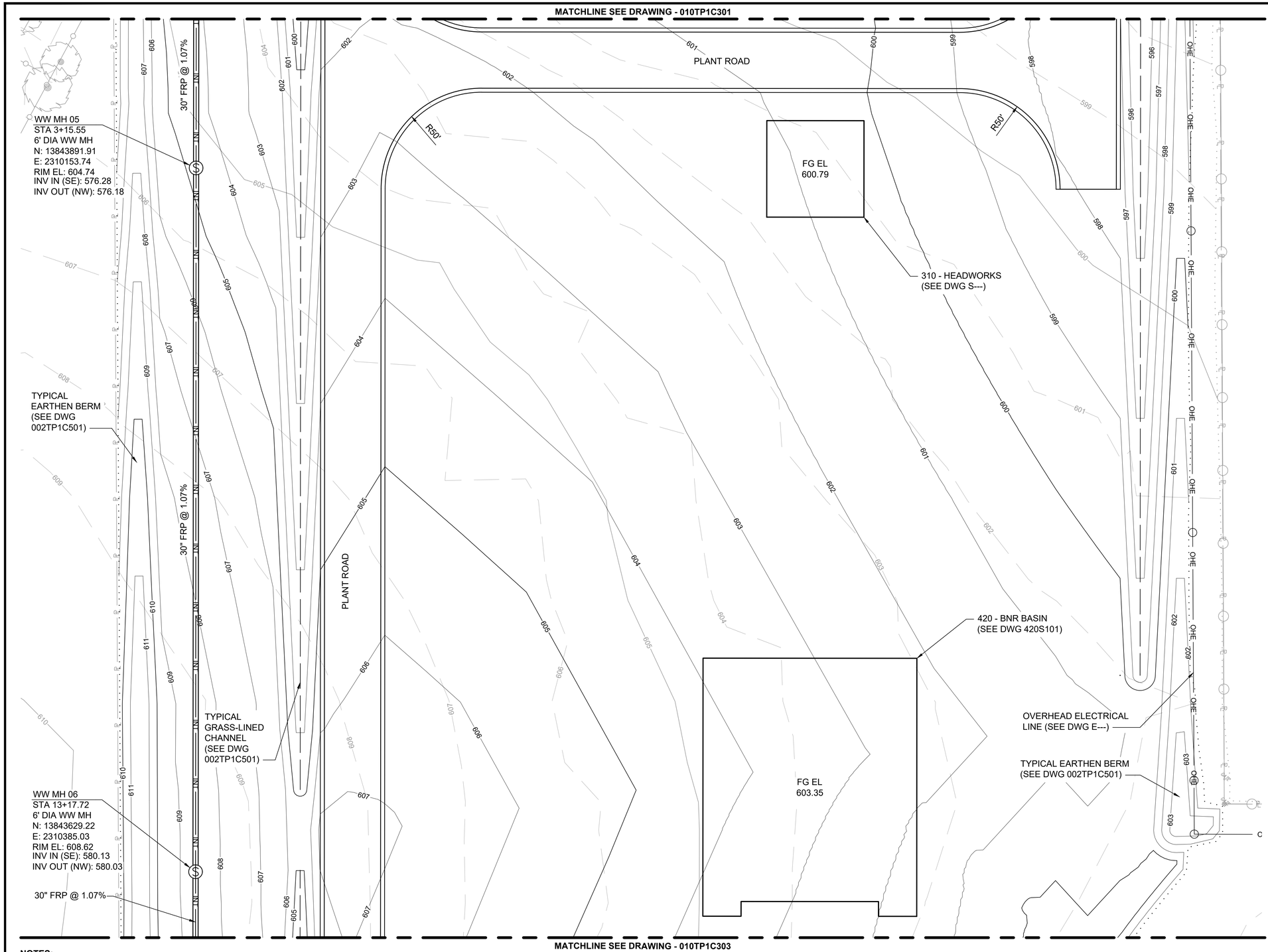
date	detailed
JANUARY 22, 2026	A. KADAM
designed	checked
P. WORLEY	J. GARDER

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY
CIVIL
ENLARGED SITE, GRADING, AND PIPING PLAN 1

project	contract
187533	

drawing **010TP1C301** rev. **0**
sheet of sheets
file 187533_010TP1C301-305.DWG



NOTES:

1. SEE DWG 010TP1C310 FOR SITE AND GRADING POINT TABLES.
2. SEE DWG 010TP1C311 FOR PIPING POINT TABLES.

0 25' 50'
HORIZONTAL SCALE IN FEET

NORTH

no.	date	by	ckd	description
0	04/03/26	PMW	JLG	GMP 1/2: ISSUED FOR BID

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BURNS McDONNELL
6200 BRIDGE POINT PARKWAY, SUITE 400
AUSTIN, TX 78730
Burns & McDonnell Engineering Co., Inc.
FIRM Reg. No. F-845

date	detailed
JANUARY 22, 2026	A. KADAM
designed	checked
P. WORLEY	J. GARDER

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY
CIVIL
ENLARGED SITE, GRADING, AND PIPING PLAN 2

project	contract
187533	

drawing **010TP1C302** rev. **0**

sheet of sheets

file 187533_010TP1C301-305.DWG

C:\DAROOT\JOBS\524EE8958A8245A49F89BDBDC6C8D41E\ADSKFILES\B.A55AEC88-C33B-4459-8AE6-13911C2D5B1B\PROJECT FILES\010_SITE CIVIL\PROD_DWGS\GMP1\187533_010TP1C301-305.DWG 4/3/2026 5:26 PM ARKADAM

MATCHLINE SEE DRAWING - 010TP1C302

MATCHLINE SEE DRAWING - 010TP1C304

MATCHLINE SEE DRAWING - 010TP1C305

TYPICAL EARTHEN BERM (SEE DWG 002TP1C501)

TYPICAL GRASS-LINED CHANNEL (SEE DWG 002TP1C501)

30" FRP @ 1.07%

PLANT ROAD

WW MH 07
STA 13+17.72
6' DIA WW MH
N: 13843363.97
E: 2310618.58
RIM EL: 605.26
INV IN (SW): 584.11
INV OUT (NW): 583.91

30" FRP @ 1.07%

TIED CONCRETE BLOCK MAT (TYP) (NOTE 3)

BOX CULVERT (2'x4' RCB)

FL EL: 600.41
N: 13843384.83
E: 2310654.57

FL EL: 599.74
N: 13843443.02
E: 2310737.87

PLANT ROAD

FL EL: 594.12
N: 13843626.34
E: 2310929.20

FL EL: 593.37
N: 13843684.78
E: 2311012.45

LAYDOWN AREA

BOX CULVERT (2'x4' RCB)

OVERHEAD ELECTRICAL LINE (SEE DWG E---)

FLEMING PASS

ACCESS EASEMENT (30' WIDE) (DOC. NO. 202299013800) (O.P.R.G.C.T.T.)

BUILDING WITH DECK

30862 MISC

30861 MISC

BUILDING

NOTES:

1. SEE DWG 010TP1C310 FOR SITE AND GRADING POINT TABLES.
2. SEE DWG 010TP1C311 FOR PIPING POINT TABLES.
3. TIED CONCRETE BLOCK MAT SHALL BE FLEXAMAT STANDARD OR APPROVED EQUAL INSTALLED AND VEGETATED PER MANUFACTURER REQUIREMENTS.

0 25' 50'
HORIZONTAL SCALE IN FEET

NORTH

no.	date	by	ckd	description
0	04/03/26	PMW	JLG	GMP 1/2: ISSUED FOR BID

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BURNS McDONNELL
6200 BRIDGE POINT PARKWAY, SUITE 400
AUSTIN, TX 78730
Burns & McDonnell Engineering Co., Inc.
FIRM Reg. No. F-845

date	detailed
JANUARY 22, 2026	A. KADAM
designed	checked
P. WORLEY	J. GARDER

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY
CIVIL
ENLARGED SITE, GRADING, AND PIPING PLAN 3

project	contract
187533	

drawing **010TP1C303** rev. **0**

sheet of sheets

file 187533_010TP1C301-305.DWG

DOC#202199026067
D.R.G.C.T.

CITY OF
SAN MARCOS, TEXAS
25.013 ACRES
DOC#202499026872
O.P.R.G.C.T.

WW MH 09
STA 20+45.71
6' DIA WW MH
W/ INSIDE DROP
N: 13842882.89
E: 2310072.20
RIM EL: 609.00
INV OUT (NE): 592.00
(NOTE 3, 5)

32-FT WIDE MANUAL
DOUBLE SWING
SECURITY GATE
(TEMPORARY)

SECURITY FENCE
(TEMPORARY)

FL EL: 604.53
N: 13843045.01
E: 2310273.57

TYPICAL GRASS-LINED CHANNEL
(SEE DWG 002TP1C501)

TYPICAL GRASS-LINED CHANNEL
(SEE DWG 002TP1C501)

WW MH 08
STA 16+45.71
6' DIA WW MH
N: 13843147.22
E: 2310372.41
RIM EL: 607.38
INV IN (SW): 587.72
INV OUT (NE): 587.62

TYPICAL GRASS-LINED CHANNEL
(SEE DWG 002TP1C501)

30" FRP @ 1.07%

30" FRP @ 1.07%

MATCHLINE SEE DRAWING - 010TP1C303

DOUBLE BOX
CULVERT
(2 @ 2'X6' RCB)

PLANT ROAD

32-FT WIDE MANUAL
DOUBLE SWING
SECURITY GATE
(TEMPORARY)

TIED CONCRETE
BLOCK MAT (TYP)
(NOTE 4)

OVERHEAD ELECTRICAL
LINE (SEE DWG E---)

FL EL: 604.00
N: 13842992.26
E: 2310320.01

DS INV EL: 604.00
N: 13842839.18
E: 2310176.60

DS INV EL: 604.25
N: 13842811.43
E: 2310198.18

FLEMING PASS

FLEMING PASS

R25'

R50'

NOTES:

1. SEE DWG 010TP1C310 FOR SITE AND GRADING POINT TABLES.
2. SEE DWG 010TP1C311 FOR PIPING POINT TABLES.
3. MANHOLE LOCATED OUTSIDE OF SURVEY LIMITS. RIM ELEVATION APPROXIMATE; SUBCONTRACTOR TO VERIFY RIM ELEVATION.
4. TIED CONCRETE BLOCK MAT SHALL BE FLEXAMAT STANDARD OR APPROVED EQUAL, INSTALLED AND VEGETATED PER MANUFACTURER REQUIREMENTS.
5. PROVIDE KNOCKOUT FOR FUTURE 30-INCH CONNECTION BY OTHERS.

0 25' 50'
HORIZONTAL SCALE IN FEET

NORTH

no.	date	by	ckd	description
0	04/03/26	PMW	JLG	GMP 1/2: ISSUED FOR BID

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BURNS McDONNELL
6200 BRIDGE POINT PARKWAY, SUITE 400
AUSTIN, TX 78730
Burns & McDonnell Engineering Co., Inc.
FIRM Reg. No. F-845

date	detailed
JANUARY 22, 2026	A. KADAM
designed	checked
P. WORLEY	J. GARDER

THE CITY OF SAN MARCOS

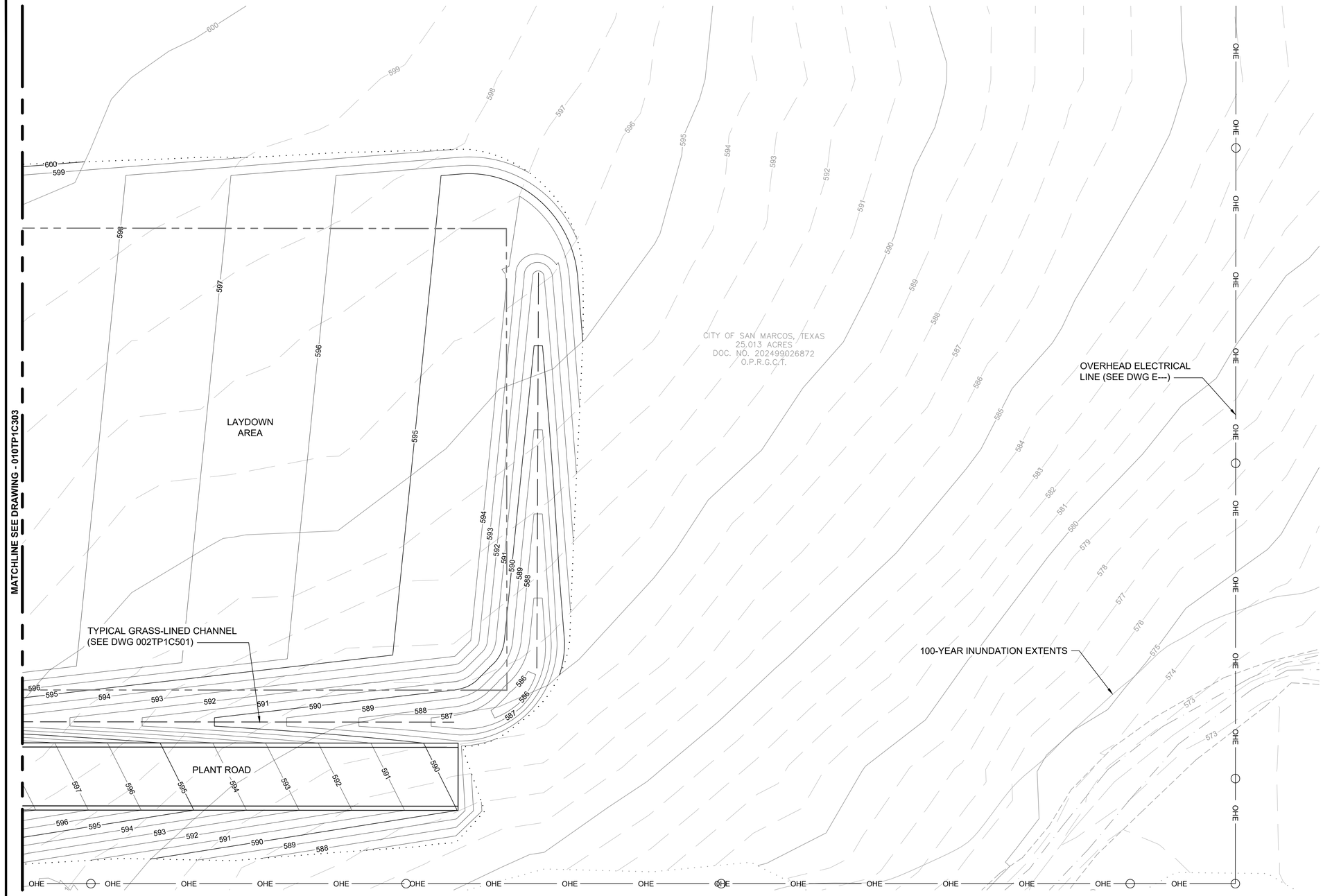
FM 1978 WATER RECLAMATION FACILITY
CIVIL
ENLARGED SITE, GRADING, AND PIPING PLAN 4

project	contract
187533	

drawing **010TP1C304** rev. **0**

sheet of sheets

file 187533_010TP1C301-305.DWG



NOTES:

1. SEE DWG 010TP1C310 FOR SITE AND GRADING POINT TABLES.
2. SEE DWG 010TP1C311 FOR PIPING POINT TABLES.

0 25' 50'
HORIZONTAL SCALE IN FEET

NORTH

no.	date	by	ckd	description
0	04/03/26	PMW	JLG	GMP 1/2: ISSUED FOR BID

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BURNS McDONNELL
6200 BRIDGE POINT PARKWAY, SUITE 400
AUSTIN, TX 78730
Burns & McDonnell Engineering Co., Inc.
FIRM Reg. No. F-845

date	detailed
JANUARY 22, 2026	A. KADAM
designed	checked
P. WORLEY	J. GARDER

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY

CIVIL
ENLARGED SITE, GRADING, AND PIPING PLAN 5

project	contract
187533	

drawing **010TP1C305** rev. **0**

sheet of sheets

file 187533_010TP1C301-305.DWG

1 2 3 4 5 6 7 8 9 10 11 12 13

A B C D E F G H I

SITE AND GRADING POINTS TO BE PROVIDED PRIOR TO IFC

no.	date	by	ckd	description
0	04/03/26	PMW	JLG	GMP 1/2: ISSUED FOR BID

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BURNS McDONNELL
6200 BRIDGE POINT PARKWAY, SUITE 400
AUSTIN, TX 78730
Burns & McDonnell Engineering Co., Inc.
FIRM Reg. No. F-845

date	detailed
JANUARY 22, 2026	A. KADAM
designed	checked
P, WORLEY	J. GARDER

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY
CIVIL
SITE AND GRADING
POINTS TABLE(S)

project	contract
187533	

drawing **010TP1C310** rev. **0**

sheet of sheets

file 187533_010TP1C310.DWG

1 2 3 4 5 6 7 8 9 10 11 12 13

A B C D E F G H I

PIPING POINTS TO BE PROVIDED PRIOR TO IFC

no.	date	by	ckd	description
0	04/03/26	PMW	JLG	GMP 1/2: ISSUED FOR BID

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BURNS McDONNELL
6200 BRIDGE POINT PARKWAY, SUITE 400
AUSTIN, TX 78730
Burns & McDonnell Engineering Co., Inc.
FIRM Reg. No. F-845

date	detailed
JANUARY 22, 2026	A. KADAM
designed	checked
P, WORLEY	J. GARDER

THE CITY OF SAN MARCOS

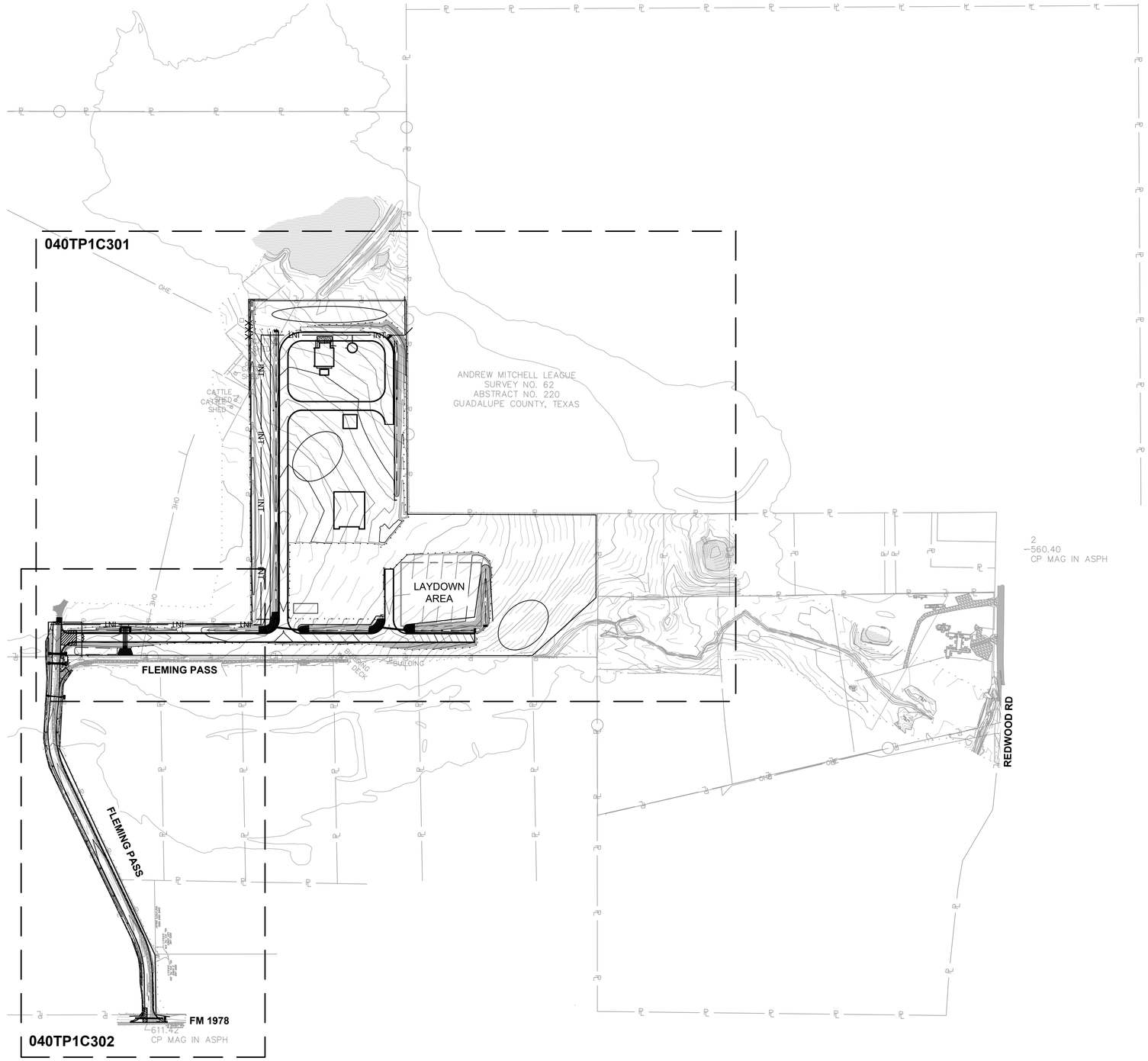
FM 1978 WATER RECLAMATION FACILITY
CIVIL
PIPING
POINTS TABLE(S)

project	contract
187533	

drawing **010TP1C311** rev. **0**

sheet of sheets

file 187533_010TP1C311.DWG



NOTES:

1. SOIL RETENTION BLANKET SHALL BE INSTALLED ON ALL SLOPES 4H:1V OR GREATER AND ALONG CHANNEL BOTTOMS. SOIL RETENTION BLANKET SHALL BE PER CITY OF SAN MARCOS STANDARD DETAIL NO. 605S-1-SM (SEE DWG 006TP1REF19).
2. STABILIZED CONSTRUCTION ENTRANCE SHALL BE PER CITY OF SAN MARCOS STANDARD DETAIL NO. 641S-1-SM (SEE DWG 006TP1REF19).
3. ROCK BERM SHALL BE PER CITY OF SAN MARCOS STANDARD DETAIL NO. 639S-1-SM (SEE DWG 006TP1REF20).
4. SILT FENCE SHALL BE PER CITY OF SAN MARCOS STANDARD DETAIL NO. 642S-1-SM (SEE DWG 006TP1REF21).
5. EROSION CONTROL LOG SHALL BE PER CITY OF SAN MARCOS STANDARD DETAIL NO. 648S-1-SM (SEE DWG 006TP1REF22).

no.	date	by	ckd	description
0	04/03/26	PMW	JLG	GMP 1/2: ISSUED FOR BID

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BURNS McDONNELL
6200 BRIDGE POINT PARKWAY, SUITE 400
AUSTIN, TX 78730
Burns & McDonnell Engineering Co., Inc.
FIRM Reg. No. F-845

date	detailed
JANUARY 22, 2026	A. KADAM
designed	checked
P. WORLEY	J. GARDER

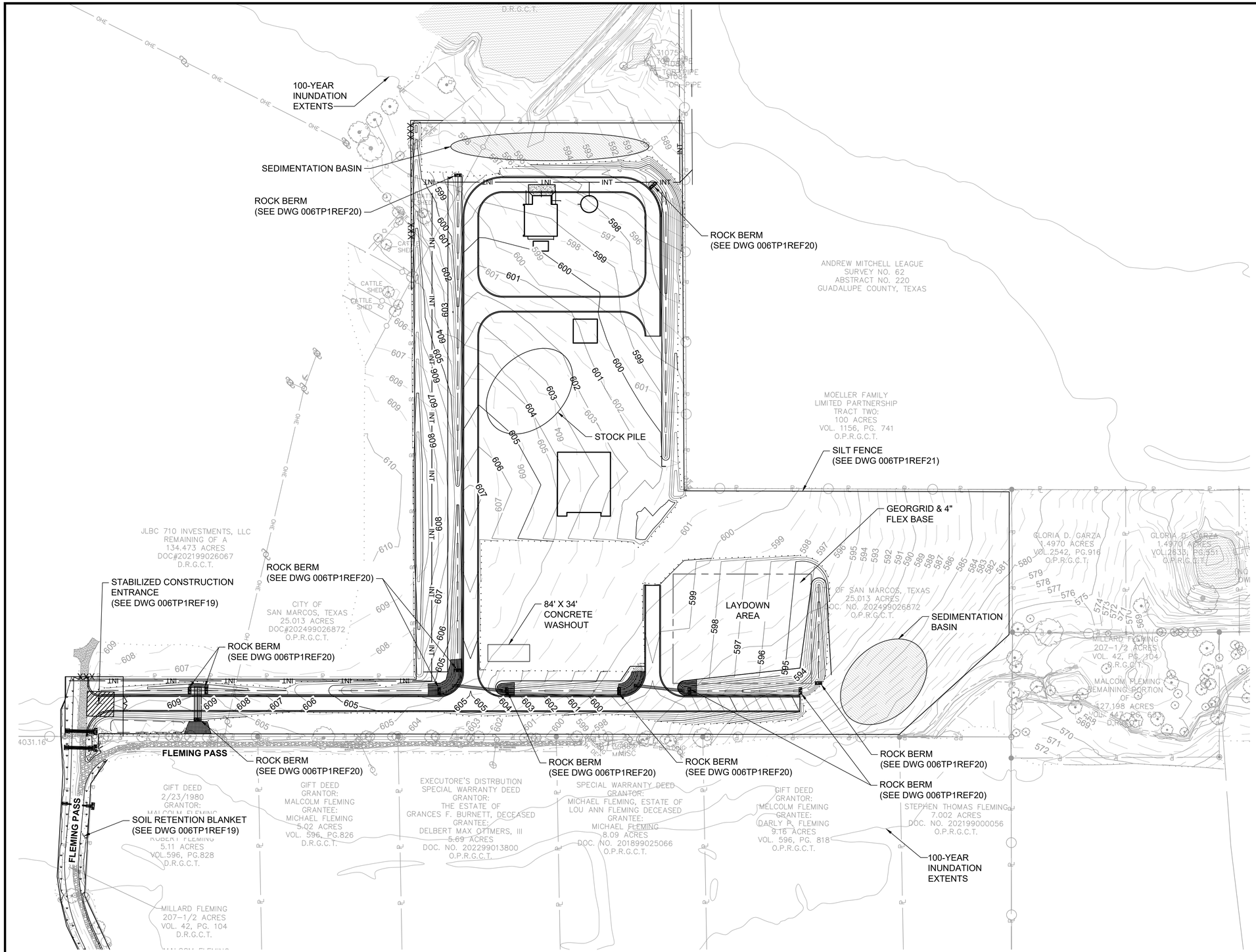
THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY
CIVIL
OVERALL EROSION AND SEDIMENT CONTROL PLAN

project	contract
187533	

drawing **040TP1C101** – rev. **0**

sheet of sheets
file 187533_040TP1C101.DWG



no.	date	by	ckd	description
0	04/03/26	PMW	JLG	GMP 1/2: ISSUED FOR BID

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FIRM Reg. No. F-845

date	detailed
JANUARY 22, 2026	A. KADAM
designed	checked
P. WORLEY	J. GARDER

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY

CIVIL

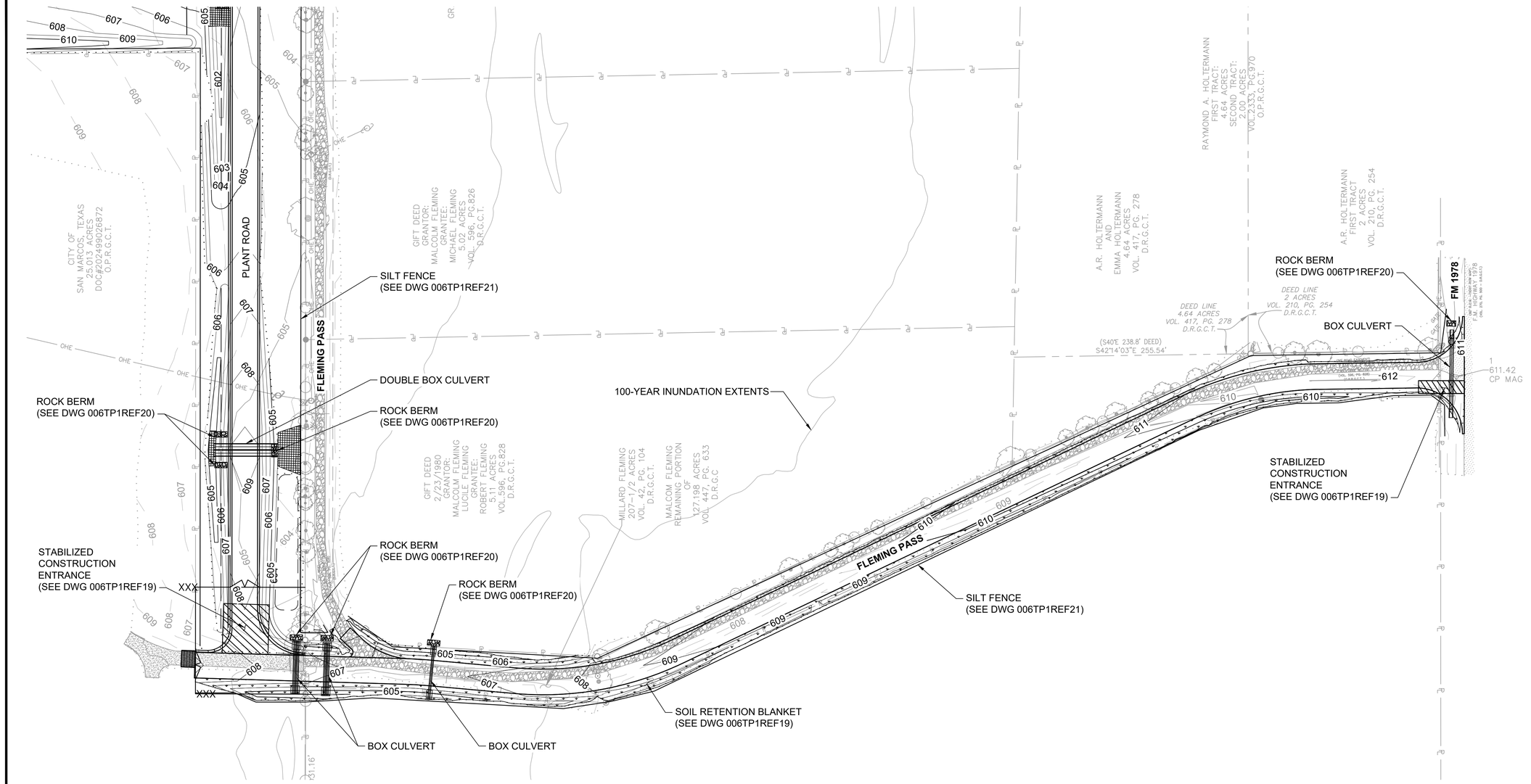
ENLARGED EROSION AND SEDIMENT CONTROL PLAN - WWTP SITE

project	contract
187533	

drawing **040TP1C301** rev. **0**

sheet of sheets

file 187533_040TP1C301.DWG



NOTES:

1. XXXXXX.
2. XXXXXX.

no.	date	by	ckd	description
0	04/03/26	PMW	JLG	GMP 1/2: ISSUED FOR BID

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FIRM Reg. No. F-845

date	detailed
JANUARY 22, 2026	A. KADAM
designed	checked
P. WORLEY	J. GARDER

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY

CIVIL

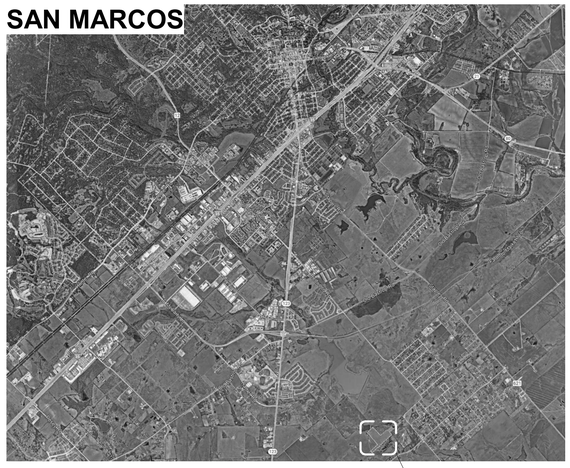
ENLARGED EROSION AND SEDIMENT CONTROL PLAN - FLEMING PASS

project	contract
187533	

drawing **040TP1C302** — rev. **0**

sheet of sheets

file 187533_040TP1C302.DWG



VICINITY MAP
NOT TO SCALE

PROJECT LOCATION

THE CITY OF
SAN MARCOS

PROJECT LOCATION

LOCATION MAP
NOT TO SCALE

City of San Marcos

FM 1978 WATER RECLAMATION FACILITY

FLEMING PASS ROAD
San Marcos, TX 78666

GMP 1/2: ISSUED FOR BID

MARCH 31st, 2026

BMcD Project No. 187533

NOT FOR CONSTRUCTION

THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF INTERIM REVIEW UNDER THE AUTHORITY OF: ADAM BOGUSCH
TEXAS NO: 85386 ON DATE: 03/31/26
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no.	date	by	ckd	description
0	03/31/26	AJH	AJH	GMP 1/2: ISSUED FOR BID

BURNS McDONNELL
6200 BRIDGE POINT PARKWAY, SUITE 400
AUSTIN, TX 78730
Burns & McDonnell Engineering Co, Inc.
FIRM Reg. No. F-845

FM 1978 WATER RECLAMATION FACILITY

COVER

Drawing 000G001

CONTRACT DRAWINGS

GENERAL DRAWINGS:

DRAWING NO	DRAWING TITLE
000G001	COVER
000G002	INDEX
000G004	GENERAL LEGEND

CIVIL DRAWINGS:

DRAWING NO	DRAWING TITLE
002TP1C001	CIVIL LEGEND, ABBREVIATIONS AND GENERAL NOTES
002TP1C002	CIVIL GENERAL NOTES
002TP1C101	CIVIL SURVEY CONTROL PLAN
002TP1C102	CIVIL CONSTRUCTION ACCESS PLAN
002TP1C110	CIVIL STORM EXISTING DRAINAGE AREA PLAN
002YP1C111	CIVIL STORM PROPOSED DRAINAGE AREA PLAN
002TP1REF01	REFERENCE DRAWING COSM STANDARD CONSTRUCTION NOTES
006TP1C501	CIVIL STANDARD DETAILS 1
006TP1C502	CIVIL STANDARD DETAILS 2
006TP1C503	CIVIL STANDARD DETAILS 3
006TP1REF01	CIVIL REFERENCE DRAWING COSM STANDARD DETAILS 1
006TP1REF02	CIVIL REFERENCE DRAWING COSM STANDARD DETAILS 2
006TP1REF03	CIVIL REFERENCE DRAWING COSM STANDARD DETAILS 3
006TP1REF04	CIVIL REFERENCE DRAWING COSM STANDARD DETAILS 4
006TP1REF05	CIVIL REFERENCE DRAWING COSM STANDARD DETAILS 5
006TP1REF06	CIVIL REFERENCE DRAWING COSM STANDARD DETAILS 6
006TP1REF07	CIVIL REFERENCE DRAWING COSM STANDARD DETAILS 7
006TP1REF08	CIVIL REFERENCE DRAWING COSM STANDARD DETAILS 8
006TP1REF09	CIVIL REFERENCE DRAWING COSM STANDARD DETAILS 9
006TP1REF10	CIVIL REFERENCE DRAWING COSM STANDARD DETAILS 10
006TP1REF11	CIVIL REFERENCE DRAWING COSM STANDARD DETAILS 11
006TP1REF12	CIVIL REFERENCE DRAWING COSM STANDARD DETAILS 12
006TP1REF13	CIVIL REFERENCE DRAWING COSM STANDARD DETAILS 13
006TP1REF14	CIVIL REFERENCE DRAWING COSM STANDARD DETAILS 14
006TP1REF15	CIVIL REFERENCE DRAWING COSM STANDARD DETAILS 15
006TP1REF16	CIVIL REFERENCE DRAWING COSM STANDARD DETAILS 16
006TP1REF17	CIVIL REFERENCE DRAWING COSM STANDARD DETAILS 17
006TP1REF18	CIVIL REFERENCE DRAWING COSM STANDARD DETAILS 18
006TP1REF19	CIVIL REFERENCE DRAWING COSM STANDARD DETAILS 19
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006TP1REF21	CIVIL REFERENCE DRAWING COSM STANDARD DETAILS 21
006TP1REF22	CIVIL REFERENCE DRAWING COSM STANDARD DETAILS 22
006TP1REF23	CIVIL REFERENCE DRAWING COSM STANDARD DETAILS 23
006TP1REF24	CIVIL REFERENCE DRAWING COSM STANDARD DETAILS 24
010TP1CD100	CIVIL OVERALL DEMOLITION PLAN
010TP1C101	CIVIL OVERALL SITE, GRADING, AND PIPING PLAN
010TP1C301	CIVIL ENLARGED SITE, GRADING, AND PIPING PLAN 1
010TP1C302	CIVIL ENLARGED SITE, GRADING, AND PIPING PLAN 2
010TP1C303	CIVIL ENLARGED SITE, GRADING, AND PIPING PLAN 3
010TP1C304	CIVIL ENLARGED SITE, GRADING, AND PIPING PLAN 4
010TP1C305	CIVIL ENLARGED SITE, GRADING, AND PIPING PLAN 5
010TP1C310	CIVIL SITE AND GRADING POINTS TABLE(S)
010TP1C311	CIVIL PIPING POINTS TABLE(S)
040TP1C101	CIVIL OVERALL EROSION AND SEDIMENT CONTROL PLAN
040TP1C301	CIVIL ENLARGED EROSION AND SEDIMENT CONTROL PLAN - WWTP SITE
040TP1C302	CIVIL ENLARGED EROSION AND SEDIMENT CONTROL PLAN - FLEMING PASS

STRUCTURAL DRAWINGS:

DRAWING NO	DRAWING TITLE
002S001	STRUCTURAL GENERAL NOTES SHEET 1
002S002	STRUCTURAL GENERAL NOTES SHEET 2
006S001	STRUCTURAL LEGEND
006S501	STRUCTURAL STANDARD DETAILS SHEET 1
006S502	STRUCTURAL STANDARD DETAILS SHEET 2
006S503	STRUCTURAL STANDARD DETAILS SHEET 3
006S504	STRUCTURAL STANDARD DETAILS SHEET 4
006S505	STRUCTURAL STANDARD DETAILS SHEET 5
006S506	STRUCTURAL STANDARD DETAILS SHEET 6
006S507	STRUCTURAL STANDARD DETAILS SHEET 7
200S101	INFLUENT PUMP STATION PLANS
200S102	INFLUENT PUMP STATION VALVE PAD PLAN AND SECTION
200S301	INFLUENT PUMP STATION SECTIONS AND DETAILS SHEET 1
200S302	INFLUENT PUMP STATION SECTIONS AND DETAILS SHEET 2
200S303	INFLUENT PUMP STATION SECTIONS AND DETAILS SHEET 3
420S102	BNR BASINS FOUNDATION PLAN
420S103	BNR BASINS TOP PLAN @ EL 614.00'
420S301	BNR BASINS SECTIONS SHEET 1
420S302	BNR BASINS SECTIONS SHEET 2
710S101	WAS HOLDING TANK FOUNDATION PLAN
710S102	WAS HOLDING TANK TOP PLAN @ EL 608.50'
710S103	WAS HOLDING TANK BLOWER CANOPY PLAN AND SECTION
710S301	WAS HOLDING TANK SECTIONS AND DETAILS

ELECTRICAL DRAWINGS:

DRAWING NO	DRAWING TITLE
000E001	ELECTRICAL LEGEND
006TP1E001	ELECTRICAL STANDARD DETAILS SHEET 1
100TP1E101	ELECTRICAL SITE PLAN AND AREA CLASSIFICATION
200E101	INFLUENT PUMP STATION PLAN
710TP1E101	FLEX TANK ELECTRICAL PLAN
710TP1E601	ELECTRICAL FLEX TANK ONE-LINE DIAGRAM

PROCESS DRAWINGS:

DRAWING NO	DRAWING TITLE
002D001	PROCESS LEGEND, ABBREVIATIONS, AND GENERAL NOTES
002TP1D601	PROCESS FLOW DIAGRAM PUMP AND HAUL
006D501	PROCESS STANDARD DETAILS SHEET 1
006D502	PROCESS STANDARD DETAILS SHEET 2
006D503	PROCESS STANDARD DETAILS SHEET 3
006D504	PROCESS STANDARD DETAILS SHEET 4
200D101	INFLUENT PUMP STATION OVERALL PLAN
200D102	INFLUENT PUMP STATION ENGLARGED WET WELL PLAN
200D103	INFLUENT PUMP STATION ENLARGED PIPING PLAN
200D301	INFLUENT PUMP STATION WET WELL SECTIONS I
200D302	INFLUENT PUMP STATION WET WELL SECTIONS II
200D303	INFLUENT PUMP STATION PIPING SECTIONS
420D101	UPPER BNR BASINS PLAN
420D102	LOWER BNR BASINS PLAN
420D103	BNR BASINS ISOMETRIC
420D301	BNR BASINS SECTIONS I
420D302	BNR BASINS SECTIONS II
710D101	WAS HOLDING TANK PLAN
710D102	ENLARGED PUMP PAD PLAN
710D103	ENLARGED BLOWER PAD PLAN
710D301	FLEX TANK SECTIONS SHEET 1
710D302	FLEX TANK SECTIONS SHEET 2

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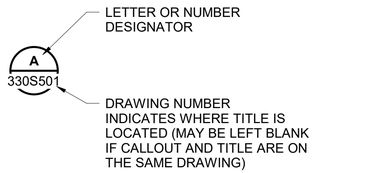
BURNS McDONNELL
6200 BRIDGE POINT PARKWAY, SUITE 400
AUSTIN, TX 78730
Burns & McDonnell Engineering Co, Inc.
FIRM Reg. No. F-845

FM 1978 WATER RECLAMATION FACILITY

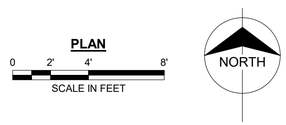
Index I

Drawing 000G002

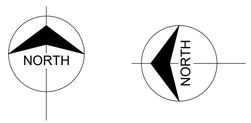
GENERAL SYMBOLOGY



SECTION, DETAIL, AND ELEVATION SYMBOL IDENTIFIERS



PLAN TITLE



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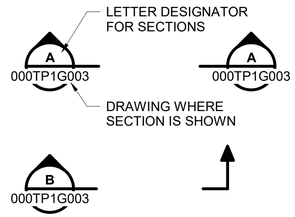
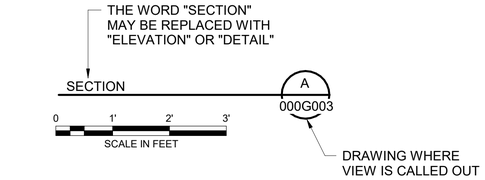
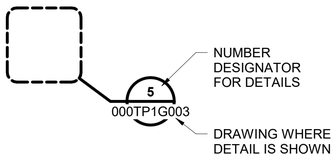


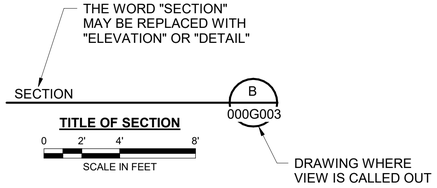
SECTION CALLOUT EXAMPLE



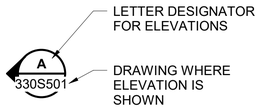
SECTION, DETAIL, OR ELEVATION TITLE EXAMPLE



DETAIL CALLOUT EXAMPLE



SECTION, DETAIL, OR ELEVATION TITLE WITH ADDITIONAL TITLE TEXT EXAMPLE



ELEVATION CALLOUT EXAMPLE

DENOTES A REVISION ON A DRAWING

REVISION TRIANGLES

DRAWING NUMBERING CONVENTION

DRAWING NUMBERING
NUMBERING FORMAT: WWWXYZZ
- WWW = STRUCTURE/AREA DESIGNATION
- X = DISCIPLINE DESIGNATOR
- Y = SHEET TYPE DESIGNATOR
- ZZ = SHEET NUMBER

STRUCTURE / AREA DESIGNATION

000	COVER - INDEX - DISCIPLINE LEGENDS
002	GENERAL DESIGN CRITERIA
004	P&ID's
006	STANDARD DETAILS
010	SITE PLANNING
150	TEMPORARY PUMPING
160	TEMPORARY STORAGE AND OFFLOADING
200	INFLUENT PUMP STATION
310	HEADWORKS
320	ODOR CONTROL
410	BNR SPLITTER
420	BNR BASIN
430	BLOWER PAD
440	ELECTRICAL BUILDING
510	FINAL CLARIFIER SPLITTER
520	FINAL CLARIFIERS
530	RAS-WAS PUMP STATION
540	CHEMICAL FEED
610	FILTERS, UV, & NPW
620	EFFLUENT STRUCTURE
710	WAS HOLDING TANK
720	DEWATERING BUILDING
800	ADMIN

DISCIPLINE DESIGNATOR AND DISCIPLINE DRAWING ORDER

G	GENERAL
X	DEMOLITION
C	CIVIL
A	ARCHITECTURAL
S	STRUCTURAL
DI	PROCESS & INSTRUMENTATION
D	PROCESS
M	MECHANICAL
P	PLUMBING
F	FIRE PROTECTION
E	ELECTRICAL

DRAWING TYPE DESIGNATOR

0	GENERAL
1	PLANS
2	ELEVATIONS
3	SECTIONS
4	ENLARGED PLANS, ELEVATIONS, OR SECTIONS THAT ARE NOT DETAILS
5	DETAILS
6	SCHEDULES AND DIAGRAMS (P&IDs AND PFDs)
7	PROFILES
8	3D REPRESENTATIONS (ISOMETRIC, PERSPECTIVE, ETC.)

EXAMPLE:
BNR BASIN #3, Temporary Pump Package and Haul 1, Structural Demolition Sections, Drawing 01

DRAWING NUMBER: 330 TP1 S X 4 01
- 2-DIGIT SHEET NUMBER
- SHEET TYPE DESIGNATOR
- DEMOLITION (IF APPLICABLE
- 1- OR 2-CHARARCTER DISCIPLINE DESIGNATOR
- TEMP PACKAGE IDENTIFIER (IF APPLICABLE)
- 3-DIGIT STRUCTURE/AREA DESIGNATOR

FINAL EXAMPLE: 330TP1SX401

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BURNS McDONNELL
6200 BRIDGE POINT PARKWAY,SUITE 400
AUSTIN, TX 78730
Burns & McDonnell Engineering Co, Inc.
FIRM Reg. No. F-845

date: SEPTEMBER 19, 2025	detailed: R. SCOLES
designed: R. SCOLES	checked: A. HUMMEL

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY
GENERAL LEGEND

project: 187533	contract:

drawing: **000G004** – rev: **0**
sheet of sheets
file 187533_003_G_R22.rvt

GENERAL:

1. THE NOTES ON THIS SHEET AND THE STANDARD STRUCTURAL DETAILS ARE GENERAL AND APPLY TO THE ENTIRE PROJECT WHETHER SPECIFICALLY CALLED OUT OR NOT EXCEPT WHERE THERE ARE SPECIFIC INDICATIONS TO THE CONTRARY ON STRUCTURAL SHEETS.
2. ALL STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH ARCHITECTURAL, CIVIL, ELECTRICAL, MECHANICAL, PROCESS DRAWINGS AND SPECIFICATIONS.
3. SEE ARCHITECTURAL, CIVIL, ELECTRICAL, MECHANICAL, AND PROCESS DRAWINGS FOR MISCELLANEOUS STEEL, CONCRETE, ANCHORS, AND OPENINGS NOT INDICATED ON STRUCTURAL DRAWINGS.
4. OPENINGS FOR PIPES, DUCTS, CONDUITS, ETC. ARE NOT ALL SHOWN ON THE STRUCTURAL DRAWINGS. COORDINATE AND PROVIDE OPENINGS AS REQUIRED TO ACCOMMODATE ALL WORK SHOWN OR SPECIFIED IN THE DRAWINGS AND SPECIFICATIONS AND OTHERWISE REQUIRED FOR THE FURNISHING OF A FUNCTIONALLY COMPLETE PROJECT. REINFORCE AROUND OPENINGS PER STANDARD STRUCTURAL DETAILS, UNLESS OTHERWISE SHOWN.
5. SIZE AND LOCATIONS OF EQUIPMENT PADS AND ANCHORS SHALL BE PER EQUIPMENT MANUFACTURER'S REQUIREMENTS.
6. ANY EQUIPMENT THAT MAY INDUCE VIBRATION TO THE STRUCTURE SHALL BE ADEQUATELY ISOLATED FROM THE STRUCTURE.
7. ALL DETAILS AND SECTIONS SHOWN ON THE DRAWINGS ARE INTENDED TO BE TYPICAL AND SHALL BE CONSTRUED TO APPLY TO ANY SIMILAR SITUATION ELSEWHERE IN THE PROJECT, EXCEPT WHERE A DIFFERENT DETAIL IS SHOWN.
8. THE STANDARD DETAILS DEPICT TYPICAL DETAILING TO BE USED ON THIS PROJECT. IF CONDITIONS ARE NOT EXPLICITLY SHOWN ON THE DRAWINGS THEY SHALL BE MADE SIMILAR TO STANDARD DETAILS.
9. PROJECT DOCUMENTS REPRESENT THE FINISHED STRUCTURE(S). SUB-CONTRACTOR(S) ARE RESPONSIBLE FOR MEANS AND METHODS OF CONSTRUCTION, INCLUDING BUT NOT LIMITED TO, TEMPORARY BRACING AND SHORING DESIGNED IN ACCORDANCE WITH ASCE 37, DESIGN LOADS ON STRUCTURES DURING CONSTRUCTION AND OTHER APPLICABLE CODES AND STANDARDS.
10. THESE NOTES, AND OTHER DRAWING NOTES CONTAINED WITHIN, ARE PROVIDED TO MEET SPECIFIC REQUIREMENTS AND TO SUPPLEMENT THE PROJECT SPECIFICATIONS. THESE NOTES NEITHER REPLACE NOR OVERRIDE PROVISIONS AND REQUIREMENTS OF THE PROJECT SPECIFICATIONS. IF DISCREPANCIES BETWEEN THESE NOTES AND THE PROJECT SPECIFICATIONS EXISTS, NOTIFY CONTRACTOR FOR CLARIFICATION PRIOR TO PROCEEDING WITH WORK.
11. IN THESE NOTES AND DRAWING NOTES HEREIN, REFERENCE TO 'CONTRACTOR' REFERS TO PRIME CONTRACTOR/ENGINEER. 'SUB-CONTRACTOR' REFERS TO SUB-CONTRACTOR(S) PERFORMING WORK UNDER THE AUTHORIZATION OF THE PRIME CONTRACTOR.

DESIGN STANDARDS:

1. CODE OF RECORD: 2021 INTERNATIONAL BUILDING CODE AS AMENDED, INCLUDING APPEDICIES C, F, I.
2. ASCE/SEI 7: MINIMUM DESIGN LOADS AND ASSOCIATED CRITERIA FOR BUILDINGS AND OTHER STRUCTURES, 2016.
3. ACI 301: SPECIFICATIONS FOR STRUCTURAL CONCRETE, 2020.
4. ACI 318: BUILDING CODE REQUIREMENTS AND COMMENTARY FOR REINFORCED CONCRETE, 2019.
5. ACI 350: CODE REQUIREMENTS FOR ENVIRONMENTAL ENGINEERING CONCRETE STRUCTURES AND COMMENTARY, 2020.
6. ACI 350.5: SPECIFICATIONS FOR ENVIRONMENTAL CONCRETE STRUCTURES, 2012.
7. TMS 402/602: BUILDING CODE REQUIREMENTS AND SPECIFICATIONS FOR MASONRY STRUCTURES, 2016.
8. ANSI/AISC 360: SPECIFICATIONS FOR STRUCTURAL STEEL BUILDINGS.
9. AISC STEEL CONSTRUCTION MANUAL, 15TH EDITION, 2016.
10. AWS D1.1: STRUCTURAL WELDING CODE – STEEL, 2018.
11. ADM: ALUMINUM DESIGN MANUAL, 2020.

DESIGN LOADS:

1. RISK CATEGORY III.
2. DEAD LOADS:
   A. WEIGHT OF MATERIALS OF CONSTRUCTION.
   B. EQUIPMENT OPERATING WEIGHT(S) AS PROVIDED BY EQUIPMENT MANUFACTURER.
   C. REFER TO INDIVIDUAL STRUCTURE DRAWINGS FOR ADDITIONAL DEAD LOADS.
3. LIVE LOADS:
   A. FLOOR LIVE LOADS:
      1. PROCESS, PUMP, AND ELECTRICAL ROOMS = 250 PSF.
      2. FLOOR LIVE LOADS FOR OTHER AREAS, UNLESS NOTED OTHERWISE = 150 PSF.
      3. SUBJECT TO VEHICLE TRAFFIC = 250 PSF, AASHTO VEHICLE LOADING, OR ACTUAL VEHICLE LOADING, WHICHEVER PRODUCES THE MOST SEVERE EFFECTS.
      4. WALKWAYS, ELEVATED PLATFORMS, STAIRS, AND EXITS = 100 PSF.
      5. STORAGE = 125 PSF.
   B. ROOF LIVE LOADS = 20 PSF
   C. REFER TO INDIVIDUAL STRUCTURE DRAWINGS FOR ADDITIONAL LIVE LOADS.
4. FLUID LOADS:
   A. WATER = 62.4 PCF.
   B. RAW SEWAGE = 63 PCF.
   C. THICKENED OR DEWATERED SLUDGE = 70 PCF.
5. SOIL LOADS:
   A. TOTAL SOIL UNIT WEIGHT = 125 PCF.
   B. LATERAL EARTH PRESSURE (UNDRAINED):
      1. ACTIVE = 93 PCF (K_a = 0.49).
      2. AT-REST = 104 PCF (K_o = 0.66).
6. SNOW LOADS:
   A. GROUND SNOW LOAD, p_g = 5 PSF.
   B. FLAT-ROOF SNOW LOADS, p_f = 6 PSF.
   C. SNOW EXPOSURE FACTOR, C_e = 0.9.
   D. SNOW LOAD IMPORTANCE FACTOR, I_s = 1.10.
   E. THERMAL FACTOR C_t:
      1. UNHEATED, OPEN-AIR STRUCTURES = 1.2.
      2. ALL OTHER STRUCTURES = 1.0
   F. REFER TO INDIVIDUAL STRUCTURE DRAWINGS FOR ADDITIONAL SNOW LOAD CRITERIA.
7. WIND LOADS:
   A. BASIC DESIGN WIND SPEED, V = 116 MPH
   B. ALLOWABLE STRESS WIND SPEED, V_{asd} = 90 MPH
   C. WIND EXPOSURE = C.
   D. REFER TO INDIVIDUAL STRUCTURE DRAWINGS FOR ADDITIONAL WIND LOAD CRITERIA.
8. SEISMIC LOADS:
   A. SEISMIC IMPORTANCE FACTOR, I_E = 1.25.
   B. MAPPED SPECTRAL RESPONSE ACCELERATION PARAMETERS:
      1. SHORT-PERIOD, S_S = 0.052g.
      2. 1-SECOND PERIOD, S_1 = 0.028g.
   C. SITE CLASS = D.
   D. DESIGN SPECTRAL RESPONSE ACCELERATION PARAMETERS:
      1. SHORT-PERIOD, S_{DS} = 0.055g.
      2. 1-SECOND PERIOD, S_{D1} = 0.45g.
   E. SEISMIC DESIGN CATEGORY = A.

GEOTECHNICAL CRITERIA:

1. GEOTECHNICAL CRITERIA PROVIDED FROM "PRELIMINARY GEOTECHNICAL EXPLORATION FM1978 WATER RECLAMATION FACILITY," DATED NOVEMBER 3, 2025, PREPARED BY UES.
2. NET ALLOWABLE BEARING PRESSURE:
   A. SHALLOW STRIP AND SPREAD FOOTINGS = 2000 PSF.
   B. MAT FOUNDATIONS = 2000 PSF.
3. SUBGRADE MODULUS = 40 PCI.
4. FROST DEPTH:
   A. SHALLOW STRIP AND SPREAD FOOTINGS = 24 INCHES.
   B. MAT FOUNDATIONS = 18 INCHES.
5. SUBGRADE PREPARATION:
   A. UNLESS NOTED OTHERWISE, ALL STRUCTURE EXCAVATION, REMOVAL AND REPLACEMENT OF EXISTING NATIVE EXPANSIVE CLAY IS REQUIRED. THE LIMITS OF THE EXCAVATIONS ARE AS FOLLOWS:
      1. MINIMUM EXCAVATION DEPTH BELOW EXISTING GRADE = 12 FT.
      2. MINIMUM EXCAVATION EXTENDS BEYOND STRUCTURE FOOTPRINT = 5 FT
   B. AT ALL BUILDINGS, LATERAL EXTENTS NOTED ABOVE SHALL BE EXTENDED TO INCLUDE ALL EXTERIOR DOORWAYS AND SIDEWALKS AREAS THAT ABUT TO THE BUILDING FOUNDATION. LATERAL EXTENTS BEYOND EXTERIOR DOORWAYS AND SIDEWALK AREAS SHALL EXTEND 5 FEET BEYOND EXTERIOR DOOR STOOP/APRON AND SIDEWALK AREAS.
   C. BACKFILL MATERIAL AND PLACEMENT UNDER STRUCTURES SHALL BE IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
   D. EXCAVATION METHODS/SLOPES SHALL COMPLY WITH ALL APPLICABLE OSHA REQUIREMENTS. PROVIDE ANY TEMPORARY BRACING/SHORING SYSTEM AND DEWATERING SYSTEM AS REQUIRED TO COMPLETE WORK. TEMPORARY BRACING/SHORING SYSTEM SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER IN THE STATE OF TEXAS.
   E. WHERE IDENTIFIED BELOW, EXCAVATION DEPTH SHALL BE EXTENDED AN ADDITIONAL THREE TO FIVE FEET AND PLACE A FLEXIBLE BASE LAYER COMPLYING WITH TXDOT STANDARD SPECIFICATION ITEM 247, TYPE A OR D, GRADE1-2 OR 3. PLACE AND COMPACT MATERIAL TO AT LEAST 98% OF STANDARD PROCTOR DRY-DENSITY WITHIN A RANGE OF +2% TO -2% OF OPTIMUM MOISTURE CONTENT. SEE TYPICIAL BELOW-GRADE STRUCTURE SUBGRADE FOUNDATION DETAIL ON THESE DRAWINGS FOR ADDITIONAL DETAILS.
      1. 420 BNR BASIN
      2. 520 CLARIFIERS
      3. 610 UV/FILTER/NPW FACILITY
      4. 680 EFFLUENT STRUCTURE
      5. 710 WAS HOLDING BASIN

REINFORCED CONCRETE:

1. PREPARE AND PLACE REINFORCED CONCRETE IN ACCORDANCE WITH ACI 301.5 FOR WATER-BEARING AND SECONDARY CONTAINMENT CONCRETE STRUCTURES, AND ACI 301 FOR ALL OTHER CONCRETE STRUCTURES, AS MODIFIED BY DRAWINGS AND SPECIFICATIONS.
2. CONCRETE:
   A. STRUCTURAL CONCRETE MIX SHALL BE IN ACCORDANCE WITH PROJECT SPECIFICATIONS AND TABLE BELOW:

STRUCTURAL CONCRETE MIXES

TYPE	USE	28-DAY COMPRESSIVE STRENGTH	MAXIMUM W/C RATIO	MAXIMUM AGGREGATE SIZE	TOTAL AIR AGGREGATE	SLUMP RANGE
A	LIQUID-RETAINING AND SECONDARY CONTAINMENT	4,500 PSI	0.42	1"	4.5 - 7.5%	2" – 4"
B	STRUCTURAL ELEMENTS	4,000 PSI	0.45	1"	4.5 - 7.5%	2" – 4"
C	INTERIOR SLABS-ON-GRADE	4,000 PSI	0.45	1"	3% MAX	2" – 4"
D	ELECTRICAL DUCT BANKS	3,500 PSI	0.45	3/4" - 1"	4.5 - 7.5%	2" – 4"
E	PAVEMENTS, CURBS AND GUTTERS	4,000 PSI	-	3/4" - 1"	4.5 - 7.5%	-
F	CONCRETE FILL	2,000 PSI	-	3/8" MAX	N/A	8" MAX

      i. SLUMP RANGE MAY BE INCREASED TO A MAXIMUM SLUMP OF 8 INCHES WITH THE ADDITION OF HIGH-RANGE WATER-REDUCER COMPLYING WITH ASTM C494 TYPE F OR G.
      ii. CONCRETE FOR PAVEMENTS, CURBS, AND GUTTERS SHALL ALSO COMPLY WITH THE REQUIREMENTS OF DIVISION 32 SPECIFICATIONS.
      iii. WATER/CEMENT RATIO FOR CONCRETE FILL SHALL BE AS REQUIRED TO ACHIEVE MINIMUM 28-DAY COMPRESSIVE STRENGTH SPECIFIED.
      iv. FOR INTERIOR SLABS-ON-GRADE RECEIVING A STEEL TROWEL FINISH, AIR-CONTENT MAY BE REDUCED TO 0.0% WITH CONTRACTOR CONCURRENCE.
   B. CONCRETE FLOOR HARDENER SHALL BE USED ON INTERIOR CONCRETE SLABS WHERE SUBJECT TO VEHICLE OR PEDESTRIAN TRAFFIC THAT IS NOT RECEIVING AN ARCHITECTURAL FINISH. DO NOT USE FLOOR HARDENER ON LIQUID-RETAINING AND SECONDARY-CONTAINMENT BASIN SLABS.
   C. PROTECT AND CURE CONCRETE IN ACCORDANCE WITH THE SPECIFICATIONS. APPLY CURING METHODS AS SOON AS POSSIBLE AFTER CASTING AND/OR FINISHING. IF THE APPLICATION OF CURING METHODS WILL BE DELAYED, APPLY A WATER-BASED, CONCRETE EVAPORATION RETARDANT IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS IMMEDIATELY AFTER CASTING OR FINISHING.
3. FORMWORK:
   A. THE CONCRETE SUB-CONTRACTOR SHALL BE RESPONSIBLE FOR DESIGN, CONSTRUCTION, AND BRACING OF ALL FORMWORK AND SHORING.
   B. ALL VERTICAL CONCRETE SURFACES SHALL BE FORMED, INCLUDING FOOTINGS.
   C. ALL EXPOSED CORNERS OF CONCRETE SHALL HAVE A MINIMUM CHAMFER OF 3/4" UNLESS NOTED OTHERWISE.
   D. USE WATER-SEAL COIL-TYPE FORM-TIES IN WALLS WHERE LIQUID-TIGHTNESS IS REQUIRED. TAPER TIES, SHE-BOLTS, OR SIMILAR TIES WILL NOT BE ALLOWED.
   E. SPACE FORM TIES AS REQUIRED TO ADEQUATELY RESIST FLUID PRESSURE OF FRESH CONCRETE.
   F. STAY-IN-PLACE FORMS WILL NOT BE ALLOWED.
   G. FORM ALL NECESSARY OPENINGS OR CHASES FOR PIPING, DUCTWORK, AND SIMILAR ITEMS WHERE INDICATED FOR THE WORK.
   H. AT ALL PIPING PENETRATIONS, PROVIDE WALL PIPE DETAILS AS INDICATED ON THE PROCESS DRAWINGS UNLESS NOTED OTHERWISE.
4. CONCRETE REINFORCING:
   A. REINFORCING STEEL SHALL BE DEFORMED BARS CONFORMING TO ASTM A615 GRADE 60.
   B. DO NOT WELD REINFORCING BARS UNLESS SPECIFICALLY INDICATED TO DO SO OR WITH WRITTEN APPROVAL BY THE CONTRACTOR. BARS INDICATED TO BE WELDED SHALL CONFORM TO ASTM A706. WELDING SHALL CONFORM TO AWS D1.1.
   C. DETAIL AND PLACE REINFORCEMENT IN ACCORDANCE WITH ACI MNL-66, ACI 301, ACI 318, ACI 350, ACI 350.5, AND CRSI MANUAL OF STANDARD PRACTICE AS APPLICABLE. DO NOT INSERT REINFORCEMENT INTO FRESH OR PARTIALLY HARDENED CONCRETE.
   D. CONCRETE COVER SHALL COMPLY WITH CONCRETE COVER STANDARD DETAIL ON DRAWING 006S501.
   E. REFER TO STANDARD DETAILS FOR TYPICAL REINFORCEMENT DEVELOPMENT AND LAP SPLICES.
   A. PROVIDE ADDITIONAL REINFORCEMENT AT ALL CONCRETE OPENINGS IN ACCORDANCE WITH THE STANDARD DETAILS UNLESS NOTED OTHERWISE OR AS INDICATED ON THE DRAWINGS.
   B. UNLESS OTHERWISE INDICATED, LAP SPLICES SHALL BE CLASS B AS DEFINED BY ACI 318 AND/OR 350 AS APPLICABLE.
   C. WHEN MECHANICAL SPLICES ARE INDICATED ON THE DRAWINGS, THE SPLICE SHALL DEVELOP 125% OF THE SPECIFIED YIELD STRENGTH OF THE REINFORCING STEEL.
   D. SUB-CONTRACTOR CAN, AT HIS OPTION, CONTINUE REINFORCING STEEL THROUGH OPENINGS IN WALLS AND SLABS, THEN FIELD-CUT THE OPENING SO THERE WILL BE THE REQUIRED CONCRETE COVER BETWEEN ENDS OF BARS AND EDGE OF OPENING.
   E. REMOVE OIL, MILL SCALE, PITTING, LOOSE RUST, ICE, AND OTHER MATERIALS THAT WOULD REDUCE THE BOND FROM BARS BEFORE PLACING CONCRETE.
5. JOINTS:
   A. INSTALL AND LOCATE ALL JOINTS AS INDICATED OR SPECIFIED, OR OTHERWISE APPROVED BY THE CONTRACTOR.
   B. CLEAN SURFACES OF HORIZONTAL AND VERTICAL CONSTRUCTION JOINTS OF LAITANCE TO EXPOSE CLEAN COARSE AGGREGATE SOLIDLY EMBEDDED IN MORTAR MIX.
   C. WHERE ROUGHENED JOINT IS INDICATED, PROVIDE MECHANICALLY ROUGHENED CONCRETE SURFACE WITH A 1/4" AMPLITUDE. APPLY BONDING AGENT IN ROUGHENED JOINT UNLESS NOTED OTHERWISE.
   D. CONTINUOUS WATERSTOP SHALL BE INSTALLED IN ALL JOINTS SUBJECT TO STATIC WATER PRESSURE AND WHERE INDICATED ON THE DRAWINGS.
6. SUBMIT A CONCRETE PLACEMENT PLAN IDENTIFYING JOINT TYPES, LOCATIONS, AND PLACEMENT SEQUENCE FOR REVIEW.
7. CAST-IN-PLACE CONCRETE ANCHORS NOT SPECIFIED BY THE CONTRACTOR SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER IN THE STATE OF TEXAS, RETAINED BY THE SUB-CONTRACTOR, IN ACCORDANCE WITH APPLICABLE PROJECT AND CODE REQUIREMENTS. SUBMIT CALCULATIONS TO THE CONTRACTOR FOR REVIEW AND APPROVAL. COORDINATE LOCATION, SIZE, AND EMBEDMENT PRIOR TO CASTING CONCRETE.
8. 8. PROVIDE 15-MIL MINIMUM VAPOR RETARDER UNDER ALL HORIZONTAL REINFORCED CONCRETE ELEMENTS AS INDICATED IN THESE DRAWINGS.

POST-INSTALLED ANCHORS:

1. PROVIDE POST-INSTALLED CONCRETE ANCHORS IN ACCORDANCE WITH THE FOLLOWING:
   A. MECHANICAL ANCHORS:
      1. GALVANIZED STEEL OR STAINLESS STEEL MANUALLY EXPANDED WEDGE-TYPE, UNLESS NOTED OTHERWISE.
      2. PROVIDE ANCHORS THAT HAVE BEEN TESTED AND ASSESSED IN ACCORDANCE WITH LATEST EDITION OF APPLICABLE ACCEPTANCE CRITERIA AS DOCUMENTED BY EVALUATION SERVICE REPORTS.
         1. MECHANICAL ANCHORS IN CRACKED CONCRETE: ACI 355.2 AND ICC-ES AC 193.
   B. ADHESIVE ANCHORS:
      1. GALVANIZED STEEL OR STAINLESS STEEL THREADED ROD WITH EPOXY OR HYBRID RESIN ADHESIVE, UNLESS NOTED OTHERWISE.
      2. DO NOT USE BULK-MIXED ADHESIVES. PROVIDE THREADED ROD COMPATIBLE WITH ADHESIVE AND ACCEPTABLE TO THE MANUFACTURER.
      3. PROVIDE ANCHORS AS ENTIRE SYSTEM INCLUDING, BUT NOT LIMITED TO, ADHESIVE CARTRIDGE, MIXING NOZZLE, EXTENSION TUBE, DISPENSER, AND REQUIRED EQUIPMENT FOR PROPERLY CLEANING DRILLED HOLE.
      4. PROVIDE ANCHOR SYSTEMS THAT HAVE BEEN TESTED AND ASSESSED IN ACCORDANCE WITH LATEST EDITION OF APPLICABLE ACCEPTANCE CRITERIA AS DOCUMENTED BY EVALUATION SERVICE REPORTS.
         1. POST-INSTALLED ADHESIVE ANCHORS AND REINFORCING BARS IN CRACKED CONCRETE ELEMENTS: ACI 355.4 AND ICC-ES AC308.
   C. SUBMIT ICC ES EVALUATION REPORT FOR THE PROPOSED ANCHOR INDICATING COMPLIANCE WITH APPLICABLE ACCEPTANCE CRITERIA. ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH THE APPLICABLE ICC ES EVALUATION REPORT AND MANUFACTURER'S WRITTEN INSTRUCTIONS.
2. LOCATE ANCHORS IN EXISTING CONCRETE TO AVOID EXISTING REINFORCEMENT AND ARRANGE REINFORCEMENT IN NEW CONCRETE TO AVOID ANCHOR LOCATIONS. DO NOT DAMAGE REINFORCEMENT.
3. IF GROUT, CONCRETE TOPPING, CONCRETE OVERLAY, OR CONSTRUCTION JOINT IS PRESENT WITHIN THE EMBEDMENT LENGTH OF ANCHOR IN CONCRETE, PROVIDE FULL EMBEDMENT LENGTH BEYOND INTERFACE.
4. POST-INSTALLED CONCRETE ANCHORS NOT SPECIFIED IN THE STRUCTURAL DRAWINGS SHALL BE DESIGNED BY A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF TEXAS IN ACCORDANCE WITH APPLICABLE PROJECT AND CODE REQUIREMENTS. SUBMIT CALCULATIONS FOR REVIEW AND APPROVAL BY THE CONTRACTOR. COORDINATE LOCATION, SIZE, AND EMBEDMENT FOR EQUIPMENT OR APPURTENANCE TO BE SECURED TO THE EXISTING CONCRETE.
5. TESTING: 10% OF EACH TYPE OF MECHANICAL AND ADHESIVE ANCHOR SHALL BE PROOF LOADED BY AN INDEPENDENT TESTING FIRM ENGAGED BY THE OWNER IN ACCORDANCE WITH ASTM E488. IF MORE THAN 10% OF THE TESTED ANCHORS FAIL THE SPECIFIED PROOF LOAD, ALL ANCHORS OF THE SAME TYPE AND DIAMETER AS THE FAILED ANCHOR SHALL BE TESTED, UNLESS OTHERWISE INSTRUCTED BY THE CONTRACTOR.
   A. ANCHOR PROOF LOADS SHALL BE AS FOLLOWS:
      1. MECHANICAL ANCHORS: 50% OF THE PUBLISHED DESIGN TENSILE CAPACITY OF THE ANCHOR, ADJUSTED FOR EMBEDMENT, ANCHOR SPACING, AND EDGE DISTANCE.
      2. ADHESIVE ANCHORS: 50% OF THE PUBLISHED DESIGN TENSION BOND CAPACITY OF THE ANCHOR FOR UNCRACKED CONCRETE, ADJUSTED FOR EMBEDMENT, ANCHOR SPACING, AND EDGE DISTANCE.

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BURNS McDONNELL
6200 BRIDGE POINT PARKWAY,SUITE 400
AUSTIN, TX 78730
Burns & McDonnell Engineering Co, Inc.
FIRM Reg. No. F-845

date	detailed
FEBRUARY 5, 2026	R. SCOLES
designed	checked
J.TSOUFLIAS	A. HOLMES

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY
STRUCTURAL GENERAL NOTES
SHEET 1

project	contract
187533	

drawing **002S001** rev. **0**

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STRUCTURAL AND MISCELLANEOUS STEEL:

1. FABRICATE AND ERECT STRUCTURAL AND MISCELLANEOUS STEEL IN ACCORDANCE WITH AISC MANUAL OF STEEL CONSTRUCTION, ANSI/AISC 360, AND OSHA 29 CFR 1926, SUBPART R.
2. DESIGN AND PROVIDE TEMPORARY ERECTION BRACING AS REQUIRED AND DO NOT REMOVE UNTIL PERMANENT LATERAL-LOAD RESISTING ELEMENTS AND CONNECTIONS ARE COMPLETELY INSTALLED.
3. GALVANIZE ALL STEEL IN ACCORDANCE WITH ASTM A123, UNLESS NOTED OTHERWISE.
4. STEEL MATERIALS:
   A. W- AND WT- SHAPES: ASTM A992, F_y = 50 KSI.
   B. ALL OTHER ROLLED PLATES AND SHAPES: ASTM A36.
   C. HOLLOW STRUCTURAL SECTIONS (HSS): ASTM A500, GRADE C
   D. PIPE: ASTM A53, GRADE B, TYPE E OR S, OR ASTM A106 GRADE B.
   E. STAINLESS STEEL: ASTM A240, TYPE 304 UNLESS NOTED OTHERWISE.
   F. BAR GRATING: ANSI MBG 531 STEEL BAR TYPE W-19-4 (1 1/4" X 3/16"), UNLESS NOTED OTHERWISE ON THE DRAWINGS OR PROJECT SPECIFICATIONS.
      1. STEEL: ASTM A1011. SERRATED FOR EXTERIOR APPLICATIONS, PLAIN FOR INTERIOR APPLICATIONS, UNLESS NOTED OTHERWISE.
      2. BAND ALL EDGES/ENDS OF OPENINGS.
      3. GALVANIZE STEEL GRATING PER ASTM A123.
      4. GRATING CLIPS AND OTHER ACCESSORIES AS SPECIFIED IN PROJECT SPECIFICATIONS.
   G. CHECKERED PLATE: ASTM A786 WITH ASTM A36 MATERIALS.
5. CONNECTION MATERIALS:
   A. WELD FILLER METAL FOR CARBON STEEL: E70XX LOW-HYDROGEN ELECTRODES.
   B. HIGH-STRENGTH BOLTS: ASTM F3125, GRADE A325, TYPE 1 OR GRADE F1852, TYPE 1 UNLESS NOTED OTHERWISE.
      1. NUTS: HEAVY-HEX, ASTM A563, GRADE DH.
      2. FLAT AND BEVELED WASHERS: ASTM F436.
      3. DIRECT TENSION INDICATING WASHERS: ASTM F595, TYPE 325 FOR USE WITH TYPE A325 BOLTS.
      4. GALVANIZE CONNECTION MATERIALS UNLESS NOTED OTHERWISE.
   C. PLATE WASHERS: ASTM A36.
   D. CAST-IN-PLACE CONCRETE ANCHORS:
      1. CARBON STEEL: ASTM F1554, GRADE 36 UNLESS NOTED OTHERWISE.
         1. NUTS: HEAVY-HEX, ASTM A563, GRADE DH.
         2. WASHERS: ASTM F436.
         3. PROVIDE GALVANIZED ANCHOR ROD, NUT, AND WASHER UNLESS NOTED OTHERWISE.
      2. STAINLESS STEEL: ASTM F593, TYPE 304.
         1. NUTS: ASTM A563.
         2. WASHERS: ASTM A167, TYPE 304.
      3. HORIZONTAL TOLERANCE FOR ANCHOR LOCATION IS 1/8" AND VERTICAL TOLERANCE FOR TOP OF ANCHOR IS 1/4".
      4. THE FOLLOWING SHALL NOT BE ALLOWED WITHOUT WRITTEN APPROVAL BY THE CONTRACTOR:
         1. INSERTING ANCHORS INTO FRESH AND PARTIALLY HARDENED CONCRETE.
         2. SUBSTITUTING POST-INSTALLED ANCHORS WHERE CAST-IN-PLACE ANCHORS ARE SPECIFIED.
         3. REPAIRING, REPLACING, OR MODIFYING INSTALLED ANCHORS.
6. WELDING SHALL BE PERFORMED BY CERTIFIED WELDERS IN ACCORDANCE WITH AWS D1.1.
7. WHEN FILLET WELD SIZE IS NOT INDICATED, PROVIDE MAXIMUM WELD SIZE BASED ON MATERIAL THICKNESS IN ACCORDANCE WITH ANSI/AISC 360.
8. PROVIDE PLATE WASHERS AT BOLT HEADS OR NUTS IN OVERSIZED AND LONG SLOTTED HOLES.
9. PROVIDE BEVELED WASHERS AT BOLT HEADS OR NUTS AT SLOPED SURFACES.
10. ALL STEEL-TO-STEEL CONNECTIONS SHALL BE BEARING-TYPE AND USE HIGH-STRENGTH BOLTS IN STANDARD-SIZED HOLES UNLESS OTHERWISE SPECIFIED. CONNECTIONS SHALL BE IN ACCORDANCE WITH AISC STEEL CONSTRUCTION MANUAL.
11. HIGH-STRENGTH BOLTED CONNECTIONS SHALL BE FULLY TENSIONED IN ACCORDANCE WITH THE AISC STEEL CONSTRUCTION MANUAL.
12. AFTER BASE PLATES SUPPORTED BY AND ANCHORED TO CONCRETE ARE GROUTED AND CURED, TIGHTEN ANCHOR ROD NUT(S) TO 'SNUG-TIGHT' CONDITION PLUS 1/4 NUT ROTATION.
13. PROVIDE SPACER PLATES FOR DOUBLE ANGLE MEMBERS TO COMPLY WITH ANSI/AISC 360 PARAGRAPH E6.2.
    A. THICKNESS: TO MATCH END GUSSET PLATES OR OTHERWISE NOTED.
    B. MINIMUM ATTACHMENT: CONNECT BACK-TO-BACK LEGS OF ANGLES USING ONE 3/4" DIAMETER BOLT.
14. OPENINGS SHALL NOT BE FIELD CUT IN THE FLANGE OR WEBS OF STEEL MEMBERS, UNLESS SPECIFICALLY INSTRUCTED TO DO SO IN WRITING BY THE CONTRACTOR.
15. DIMENSIONS SHALL BE TO CENTERLINES OF COLUMNS AND BEAMS, TOP SURFACES OF BEAMS AND TUBES, AND BACKS OF CHANNELS AND ANGLES, UNLESS NOTED OTHERWISE.

ALUMINUM:

1. FABRICATE ALUMINUM IN ACCORDANCE WITH THE ALUMINUM DESIGN MANUAL.
2. ALUMINUM MATERIALS:
   A. STRUCTURAL SHAPES: ASTM B308, ALLOY 6161-T6.
   B. PLATES: ASTM B209, ALLOY 6061-T6.
   C. CONNECTION MATERIALS:
      1. BOLTS: ASTM F593, GROUP 1.
      2. NUTS: ASTM F594, GROUP 1.
      3. WASHERS: ASTM A240, TYPE 304 WITH DIMENSIONAL TOLERANCES IN ACCORDANCE WITH ASTM F436.
   D. BAR GRATING: ANSI MBG 531 ALUMINUM BAR TYPE W-19-4 (1 1/4" X 3/16"), UNLESS NOTED OTHERWISE ON THE DRAWINGS OR PROJECT SPECIFICATIONS.
      1. ALUMINUM: ASTM B221, ALLOW 6061 OR 6063, MILL FINISH. SERRATED FOR EXTERIOR APPLICATIONS, PLAIN FOR INTERIOR APPLICATIONS, UNLESS NOTED OTHERWISE.
      2. BAND ALL EDGES/ENDS OF OPENINGS.
      3. GRATING CLIPS AND OTHER ACCESSORIES AS SPECIFIED IN PROJECT SPECIFICATIONS.
3. ALUMINUM LADDERS:
   A. ALUMINUM LADDERS SHALL BE AS MANUFACTURED BY:
      1. PEAK-TO-PEAK ENGINEERED PRODUCTS.
      2. THOMPSON FABRICATING.
      3. CONTRACTOR APPROVED EQUAL.
   B. DESIGN AND FABRICATE LADDERS IN ACCORDANCE WITH OSHA, ANSI A14.3, AND REFERENCED BUILDING CODES.
   C. LADDER RUNGS: ALLOY 6063-T6. PROVIDE STRIATED TOP SURFACE TO PREVENT SLIPPING.
   D. SIDE RAILS: ASTM B221 OR ASTM B429, ALLOY 6105-T5, 6063-T6, OR 6061-T6.
   E. AT INTERIOR LADDERS, PROVIDE LADDER EXTENSION POST.
   F. ALL LADDERS GREATER THAN 24 FEET TALL SHALL BE EQUIPPED WITH A FALL ARREST SYSTEM COMPLYING WITH OSHA REQUIREMENTS.
4. ALUMINUM GUARDRAILS:
   A. ALUMINUM GUARDRAILS SHALL BE AS MANUFACTURED BY:
      1. PEAK-TO-PEAK ENGINEERED PRODUCTS.
      2. THOMPSON FABRICATING.
      3. CONTRACTOR APPROVED EQUAL.
   B. RAILS AND POST: 1 1/2" NOMINAL DIAMETER CONFORMING TO ASTM B221 OR ASTM B429, ALLOY 6105-T5 WITH CLEAR ANODIZED FINISH.
   C. DESIGN AND FABRICATE LADDERS IN ACCORDANCE WITH OSHA AND REFERENCED BUILDING CODES.
   D. TOP MOUNT OR SIDE MOUNT GUARDRAIL AS INDICATED ON THE DRAWINGS. PROVIDE APPROPRIATE BASE PLATE AND CONNECTION HARDWARE TO MAKE CONNECTION TO SUPPORTING STRUCTURE, USING STAINLESS STEEL HARDWARE.
   E. PROVIDE 4" TALL KICK PLATE AT BOTTOM OF GUARDRAIL.
5. DIMENSIONS SHALL BE TO CENTERLINES OF COLUMNS AND BEAMS, TOP SURFACES OF BEAMS AND TUBES, AND BACKS OF CHANNELS AND ANGLES, UNLESS NOTED OTHERWISE.
6. PROVIDE GALVANIC SEPARATION WHERE ALUMINUM IS IN CONTACT WITH DISSIMILAR METALS OR CONCRETE.

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THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY

STRUCTURAL GENERAL NOTES
SHEET 2

project	contract
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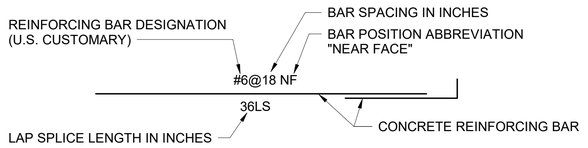
ABBREVIATIONS

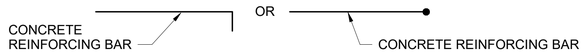
AA	ALUMINUM ASSOCIATION	EW	EACH WAY	OZ	OUNCE
AASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS	EXP	EXPANSION	Pa	PASCAL
		EXIST	EXISTING	PCA	PORTLAND CEMENT ASSOCIATION
AB	ANCHOR BOLT	EXT	EXTERIOR	PCF	POUNDS PER CUBIC FOOT
ABT	ABOUT	FAB	FABRICATE	PCI	PRESTRESSED CONCRETE INSTITUTE, POUNDS PER CUBIC INCH
ACI	AMERICAN CONCRETE INSTITUTE	f'c	SPECIFIED 28 DAY COMPRESSIVE STRENGTH OF CONCRETE		
ACO	AT CONTRACTOR'S OPTION	FD	FLOOR DRAIN	PED	PEDESTAL
ADH	ADHESIVE	FDN	FOUNDATION	PEN	PENETRATE
AGGR	AGGREGATE	FF	FAR FACE	PERP	PERPENDICULAR
AHR	ANCHOR	FL	FLOOR	PJF	PREFORMED JOINT FILLER
AHU	AIR HANDLING UNIT	FLG	FLANGE	PJTN	PROJECTION
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION	f'm	SPECIFIED COMPRESSIVE STRENGTH OF MASONRY	PL	PLATE, PROPERTY LINE
				PLCS	PLACES
AISI	AMERICAN IRON AND STEEL INSTITUTE	FNSH	FINISH	PLF	POUNDS PER LINEAR FOOT
		FRP	FIBERGLASS REINFORCED PLASTIC	PREFAB	PREFABRICATED
AL, ALUM	ALUMINUM			PSF	POUNDS PER SQUARE FOOT
ALTN	ALTERNATE	fs	PERMISSIBLE STEEL STRESS	PSI	POUNDS PER SQUARE INCH
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE	FS	FAR SIDE	PRV	PRESSURE RELIEF VALVE
		FT	FEET, FOOT	PT	POINT
APPROX	APPROXIMATE	FTG	FOOTING	PVC	POLYVINYL CHLORIDE
ARCH	ARCHITECTURAL	FUT	FUTURE	PWS	PLASTIC WATERSTOP
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS INTERNATIONAL	Fy, fy	YIELD STRESS	R	RISERS
		GA	GAGE, GAUGE	RAD	RADIUS
		GAL	GALLON	RD	ROOF DRAIN
AWS	AMERICAN WELDING SOCIETY	GALV	GALVANIZED	REF	REFERENCE
		GF	GRANULAR FILL	REINF	REINFORCEMENT
B, BOT	BOTTOM	GND	GROUND	REQD	REQUIRED
BBP	BOTTOM OF BASE PLATE	GR	GRADE	REV	REVISION
BC	BOLT CIRCLE	GRTG	GRATING	RJ	ROUGHENED JOINT
BETW	BETWEEN	GS	GRATING SUPPORT	RM	ROOM
BLDG	BUILDING	H	HIGH	S	SOUTH
BM	BEAM	HC	HOLLOW CORE	SCHED	SCHEDULE
BO	BOTTOM OF	HEX	HEXAGON	SD	SUBDRAIN
BOC	BOTTOM OF CONCRETE	HK	HOOK	SE	SOUTHEAST, STEEL EDGE
BOS	BOTTOM OF STEEL	HR	HANDRAIL	SECT	SECTION
BRG	BEARING	HORIZ	HORIZONTAL	SHT	SHEET
BRKT	BRACKET	HPT	HIGH POINT	SIM	SIMILAR
CAP	CAPACITY	HS	HIGH STRENGTH	SJ	SAWED JOINT
CB	CORNER BAR	HVAC	HEATING, VENTILATION, AND AIR CONDITIONING	SLO	SHORT LEG OUTSTANDING
CC	CLEAR COVER			SLP	SLOPE
C/C	CENTER TO CENTER	IBC	INTERNATIONAL BUILDING CODE	SLV	SLEEVE
CE	CONCRETE EDGE			SP	SPACE
CF	CUBIC FEET	ID	INSIDE DIAMETER	SPEC	SPECIFICATION
CHKR	CHECKERED	IF	INSIDE FACE	SQ	SQUARE
CIR	CIRCLE	IJ	ISOLATION JOINT	SS, SST	STAINLESS STEEL
CIRC	CIRCULAR	INTR	INTERIOR	ST	SINGLE TEE
CIRCUM	CIRCUMFERENTIAL	INVT	INVERT	STD	STANDARD
CIS	CENTERED IN SLAB	JT	JOINT	STIF	STIFFENER
CIW	CENTERED IN WALL	K	KIP (1000 POUNDS)	STIR	STIRRUP
CJ	CONSTRUCTION JOINT	KB	KNEE BRACE	STL	STEEL
CJP	COMPLETE JOINT PENETRATION	KPL	KICK PLATE	STR	STRAIGHT, STAIR
		kg	KILOGRAM	STRL	STRUCTURAL
CL	CENTER LINE	kN	KILONEWTON	STRUC	STRUCTURE
CLJ	CONTROL JOINT	KSF	KIPS PER SQUARE FOOT	SW	SOUTHWEST
CLR	CLEAR	KSI	KIPS PER SQUARE INCH	SYMM	SYMMETRICAL
CM	CENTIMETER	L	ANGLE, LONG	T	TON, TREAD, THICKNESS, TOP
CMU	CONCRETE MASONRY UNIT	LAD	LADDER	TEMP	TEMPERATURE, TEMPORARY
CO	CONCRETE OPENING	LB	POUND	THK	THICK
COL	COLUMN	LG	LENGTH, LONG	THD	THREAD
CONC	CONCRETE	LL	LIVE LOAD	THRU	THROUGH
CONN	CONNECTION	LLH	LONG LEG HORIZONTAL	T&B	TOP AND BOTTOM
CONSTR	CONSTRUCTION	LLV	LONG LEG VERTICAL	TOB	TOP OF BOLT
CONT	CONTINUOUS	LLO	LONG LEG OUTSTANDING	TOC	TOP OF CONCRETE
CONTR	CONTRACT	LNTL	LINTEL	TOF	TOP OF FLOOR
COORD	COORDINATE	LONG	LONGITUDINAL	TOG	TOP OF GRATING
COR	CORNER	LPT	LOW POINT	TOS	TOP OF STEEL
CRSI	CONCRETE REINFORCING STEEL INSTITUTE	LS	LAP SPLICE	TOW	TOP OF WALL
		M	METER	TSF	TONS PER SQUARE FOOT
CTR	CENTER	MATL	MATERIAL	TRD	TREAD
CWB	CAPILLARY WATER BARRIER	MAX	MAXIMUM	TYP	TYPICAL
CY	CUBIC YARD	MECH	MECHANICAL	UON	UNLESS OTHERWISE NOTED
db	BAR DIAMETER	MEZZ	MEZZANINE	UNO	UNLESS NOTED OTHERWISE
DBL	DOUBLE	MFR	MANUFACTURE(R)	VAR	VARIES
DET	DETAIL	MH	MANHOLE	VERT	VERTICAL
DGA	DENSE GRADED AGGREGATE	MIN	MINIMUM	W	WEST, WIDE
DIA	DIAMETER	MISC	MISCELLANEOUS	WD	WIDTH
DIAG	DIAGONAL	MJ	MECHANICAL JOINT	WF	WIDE FLANGE
DIM	DIMENSION	MK	MARK	WP	WORK POINT
DK	DECKING	MM	MILLIMETER	WS	WATERSTOP
DL	DEAD LOAD	MPa	MEGAPASCAL	WT	WEIGHT, WATERTIGHT
DN	DOWN	MS	MECHANICAL SPLICE	WW	WASTEWATER
DT	DOUBLE TEE	N	NORTH	WWF	WELDED WIRE FABRIC
DWG	DRAWING	NA	NOT APPLICABLE	W/	WITH
DWL	DOWEL	NE	NORTHEAST	W/O	WITHOUT
E	EAST	NF	NEAR FACE	YD	YARD
EA	EACH	NIC	NOT IN CONTRACT	&	AND
ED	EQUIPMENT DRAIN	NO	NUMBER	±	APPROXIMATELY
EF	EACH FACE	NOM	NOMINAL	@	AT
EJ	EXPANSION JOINT	NS	NEAR SIDE	x	BY
EL	ELEVATION	NTS	NOT TO SCALE	°	DEGREE (PLANE ANGLE)
ELEC	ELECTRICAL	NW	NORTHWEST	Ø	DIAMETER
EMBED	EMBEDMENT	OC	ON CENTER	=	EQUAL
EP	EQUIPMENT PAD	OD	OUTSIDE DIAMETER	>	GREATER THAN
ERCP	ELLIPTICAL REINF CONC PIPE	OF	OUTER FACE	<	LESS THAN
EQ	EQUAL	OPNG	OPENING	#	NUMBER, POUND
EQ SP	EQUALLY SPACED	OPP	OPPOSITE	%	PERCENT
EQUIP	EQUIPMENT	OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION		
EQUIV	EQUIVALENT				

CONCRETE REINFORCING BAR NOMENCLATURE

BAR IDENTIFICATION

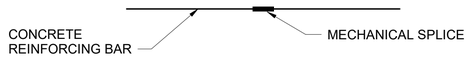


STANDARD 90° HOOK

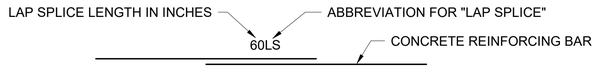


STANDARD 180° HOOK

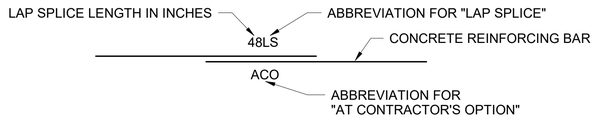
MECHANICAL SPLICE



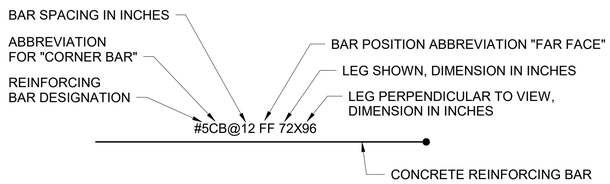
LAP SPLICE



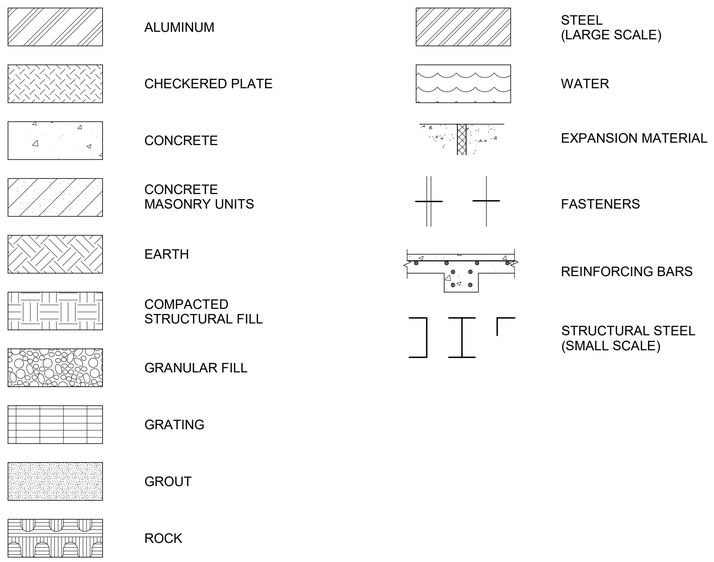
LAP SPLICE AT CONTRACTOR'S OPTION



CORNER BAR



MATERIALS LEGEND



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BURNS McDONNELL
6200 BRIDGE POINT PARKWAY
SUITE 400 AUSTIN, TX 78730
816-333-9400
Burns & McDonnell Engineering Co, Inc.
TBPE FIRM No. 845

date	detailed
NOVEMBER 13, 2025	R. SCOLES
designed	checked
J. TSOUFLIAS	A. HOLMES

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY

STRUCTURAL LEGEND AND ABBREVIATIONS

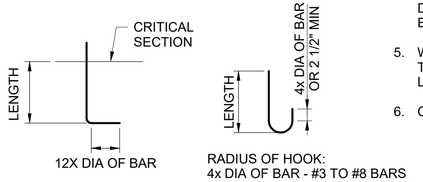
project	contract
187533	

drawing **006S001** — rev. **0**

sheet of sheets

file 187533_006_S_R24.rvt

DEVELOPMENT LENGTHS HOOKED BARS (f'c = 4000psi)	
BAR SIZE	LENGTH OR MIN EMBEDMENT
#3	7"
#4	10"
#5	1'-0"
#6	1'-3"
#7	1'-5"
#8	1'-7"
#9	1'-10"
#10	2'-0"
#11	2'-3"

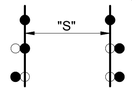


RADIUS OF HOOK:
4x DIA OF BAR - #3 TO #8 BARS
5x DIA OF BAR - #9 TO #11 BARS
6x DIA OF BAR - #14 & #18 BARS

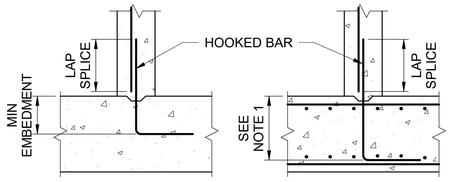
REINFORCING DEVELOPMENT AND SPLICES f'c=4000psi				
BAR SIZE	DEVELOPMENT LENGTH		SPLICE LENGTH	
	OTHER	TOP	OTHER	TOP
#3	1'-3"	1'-7"	1'-7"	2'-0"
#4	1'-7"	2'-1"	2'-1"	2'-8"
#5	2'-0"	2'-7"	2'-7"	3'-4"
#6	2'-5"	3'-1"	3'-1"	4'-0"
#7	3'-6"	4'-6"	4'-6"	5'-10"
#8	4'-0"	5'-2"	5'-2"	6'-8"
#9	4'-6"	5'-10"	5'-10"	7'-7"
#10	5'-1"	6'-7"	6'-7"	8'-6"
#11	5'-7"	7'-3"	7'-3"	9'-5"

TYPICAL REINFORCING NOTES:

1. REINFORCING BAR DEVELOPMENT AND LAP SPLICE LENGTHS SHALL BE AS SHOWN IN THESE TABLES UNLESS NOTED OTHERWISE ON THE DRAWINGS.
2. THE LENGTHS SHOWN IN THE TABLES ARE BASED ON THE FOLLOWING CONCRETE COVERAGE AND REINFORCING C-C SPACING:
   BEAMS OR COLUMNS: COVER ≥ 1.0bd (BAR DIAMETER)
   CENTER TO CENTER (C-C) SPACING ≥ 2.0bd
   ALL OTHERS: COVER ≥ 1.0bd
   CENTER TO CENTER SPACING ≥ 3.0 bd
3. TOP BARS ARE DEFINED AS HORIZONTAL REINFORCEMENT PLACED SUCH THAT MORE THAN 12" OF FRESH CONCRETE IS CAST IN THE MEMBER BELOW THE DEVELOPMENT LENGTH OR SPLICE.
4. THE DEVELOPMENT AND SPLICE LENGTHS SHOWN SHALL NOT APPLY IF ANY OF THE FOLLOWING CONDITIONS OCCUR:
   A) f'c < 4000 psi
   B) fy > 60,000 psi
   C) THE COVER OR C-C BAR SPACING IS NOT AS LISTED ABOVE.
   D) THE REINFORCING STEEL IS EPOXY COATED.
   E) LIGHT WEIGHT CONCRETE IS USED.
5. WHERE BAR SPLICES ARE STAGGERED SUCH THAT ONE-HALF OR LESS OF TOTAL REINFORCEMENT IS SPLICED WITHIN REQUIRED LAP LENGTH. SPLICE LENGTH MAY EQUAL DEVELOPMENT LENGTH.
6. CENTER TO CENTER SPACING(S) IS DEFINED AS BELOW:



● - MAIN REINF
○ - LAPPED REINF

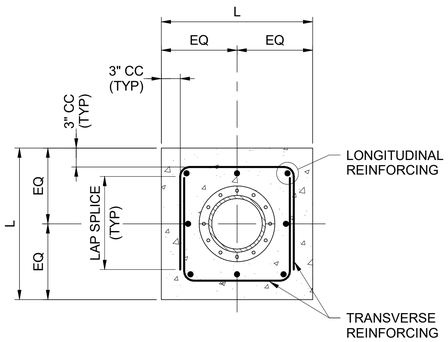


DETAIL 1 **DETAIL 2**

DEVELOPMENT LENGTH NOTES:

1. WHERE DWGS ARE DETAILED SIMILIAR TO DETAIL 2, EXTEND THE EMBEDMENT LENGTH SUCH THAT THE HOOKED BAR CONTACTS THE LAYER OF MAIN REINFORCING SHOWN.
2. EMBEDMENT LENGTHS IN CHART ARE TYPICAL EXCEPT AS NOTED IN DETAIL 2, OR AS INDICATED ON DRAWINGS.

TYPICAL REINFORCING DEVELOPMENT AND SPLICES
NOT TO SCALE

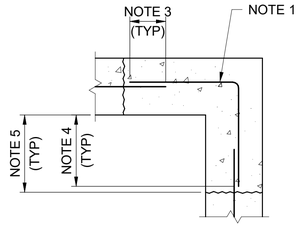


PIPE DIAMETER (INCHES)	ENCASEMENT SIZE "L" (INCHES)	TRANSVERSE REINFORCING			LONGITUDINAL REINFORCING		
		BAR SIZE NO. (US)	SPACING (INCHES)	LAP SPLICE (INCHES)	TOTAL NUMBER OF BARS	BAR SIZE NO. (US)	LAP SPLICE (INCHES)
4	22	4	12	16	8	6	36
6	22	4	12	16	8	6	36
8	24	4	12	16	8	6	36
10	27	4	12	16	8	6	36
12	30	4	12	16	8	6	36
14	32	5	16	19	8	7	42
16	36	5	16	19	8	7	42
18	38	5	16	19	8	7	42
20	40	5	16	19	8	7	42
24	44	6	18	23	12	7	42
30	50	6	18	23	16	7	42
36	58	6	18	23	16	8	48
42	64	6	18	23	16	8	48

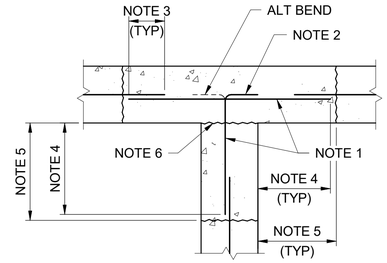
PIPE ENCASEMENT NOTES:

1. ON VERTICAL RUNS, CONTINUE LONGITUDINAL REINFORCEMENT 6" INTO SLAB.
2. WHERE PIPE ENCASEMENT AND BOTTOM OF FOOTING CONFLICT, REDUCE THE AMOUNT OF COVER ON THE PIPE.
3. REFER TO PROCESS DRAWINGS FOR PIPE AND PENETRATION LOCATIONS.
4. PIPE ENCASEMENT SHALL EXTEND 4'-0" BEYOND EXTENT OF STRUCTURE FOUNDATION UNLESS NOTED OTHERWISE.
5. THIS DETAIL IS TYPICAL FOR BOTH HORIZONTAL AND VERTICAL RUNS OF PIPE.

PIPE ENCASEMENT DETAIL
NOT TO SCALE

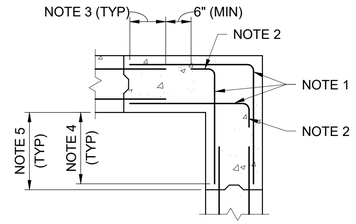


END CORNER



INTERMEDIATE CORNER

SINGLE MAT CORNER REINFORCING



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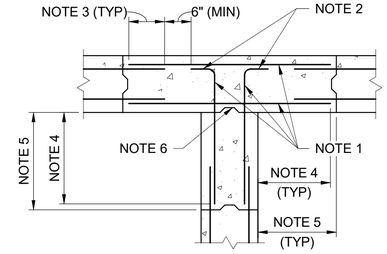

INTERMEDIATE CORNER

DOUBLE MAT CORNER REINFORCING

CORNER REINFORCING NOTES:

1. CORNER REINFORCING: SEE PLANS FOR SIZE AND SPACING. IF NOT INDICATED ON THE PLANS, MATCH SIZE AND SPACING OF TYPICAL WALL HORIZONTAL REINFORCING.
2. STANDARD 90° HOOK.
3. LAP SPLICE LENGTH SHALL BE AS INDICATED OF TOP BARS USING THE SMALLER SIZE OF THE TWO BARS BEING SPLICED.
4. D = 0.20 TIMES THE LENGTH TO THE NEXT CORNER OR 0.40 TIMES TO THE HEIGHT OF THE WALL, WHICHEVER IS SMALLER, BUT NOT LESS THAN 3'-0" OR REQUIRED LAP LENGTH IF THE WALL LENGTH IS LESS THAN 3'-0".
5. DISTANCE FROM INSIDE CORNER FACE TO NEAREST VERTICAL CONSTRUCTION JOINT SHALL NOT BE LESS THAN THE DISTANCE IN NOTE 4, NOR AS INDICATED ON THE DRAWINGS. WHERE NOT INDICATED IT SHALL NOT EXCEED 30 FEET IN LIQUID CONTAINING STRUCTURES OR 40 FEET IN OTHER STRUCTURES.
6. VERTICAL WALL JOINT ALLOWED AT WALL FACE FOR INTERMEDIATE CORNER WHERE NO WATERSTOP IS REQUIRED.

CORNER REINFORCING
NOT TO SCALE

CONCRETE CAST AGAINST & PERMANENTLY EXPOSED TO EARTH.....3"

CONCRETE EXPOSED TO EARTH, WEATHER & WASTEWATER:
#6 THRU #18 BARS.....2"

#5 BAR, W31 OR D31 WIRE & SMALLER.....1 1/2"

CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND:
SLABS, WALLS & JOISTS:
#14 &#18 BARS.....1 1/2"
#11 & SMALLER.....3/4"

BEAMS AND COLUMNS:
PRIMARY REINF, TIES, STIRRUPS & SPIRALS.....1 1/2"

CONCRETE CLEAR COVER PROTECTION FOR REINF (NON-PRESTRESSED, CAST IN PLACE)
UNLESS NOTED OTHERWISE

no.	date	by	ckd	description
0	03/20/26	JT	AMH	GMP 1/2: ISSUED FOR BID

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BURNS McDONNELL
6200 BRIDGE POINT PARKWAY
SUITE 400 AUSTIN, TX 78730
816-333-9400
Burns & McDonnell Engineering Co, Inc.
TBPE FIRM No. 845

date	detailed
NOVEMBER 13, 2025	R. SCOLES
designed	checked
J. TSOUFLIAS	A. HOLMES

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY
STRUCTURAL STANDARD DETAILS SHEET 1

project	contract
187533	

drawing **006S501** rev. **0**

sheet of sheets
file 187533_006_S_R24.rvt

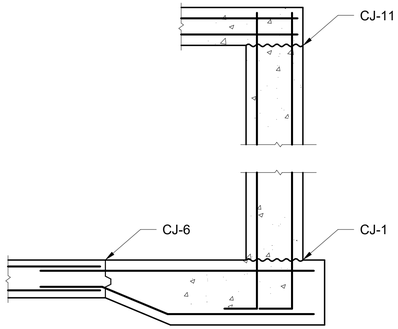
GENERAL NOTES:

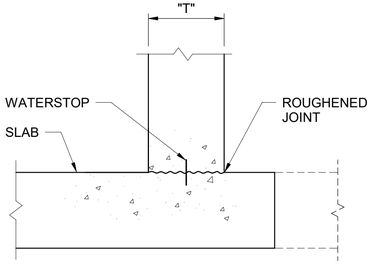
1. ALL DETAILS AND NOTES ON THIS DRAWING ARE BURNS & McDONNELL STANDARDS WITHOUT RESPECT TO CONTRACTS. USE ONLY THOSE DETAILS AS CALLED FOR ON PLANS, SPECIFIED OR AS REQUIRED TO ACCOMPLISH THE WORK.

2. ITEMS WHICH ARE TO BE FURNISHED AND INSTALLED BY SEPARATE CONTRACTS ARE IDENTIFIED AND LABELED FOR EACH CONTRACT.

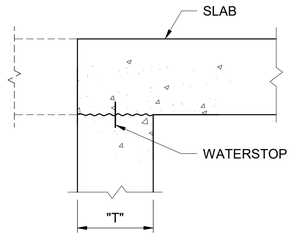
CJ EXAMPLES:

CONSTRUCTION JOINT LOCATIONS ARE DEFINED IN PLAN OR IN SECTION ON OTHER DRAWINGS. REFER TO THE FOLLOWING EXAMPLES OF CONSTRUCTION JOINTS SHOWN IN SECTION. THE SECTIONS SHOWN ON OTHER DRAWINGS WILL DEFINE THE REQUIRED "CJ" DETAIL BUT DO NOT GRAPHICALLY SHOW THE REQUIRED WATERSTOP. REINFORCING IS NOT SHOWN ON CJ DETAILS FOR CLARITY, HOWEVER, ALL REINFORCING SHALL BE CONTINUOUS THROUGH CONSTRUCTION JOINTS UNLESS NOTED OTHERWISE.

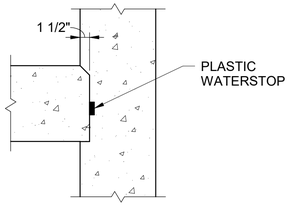




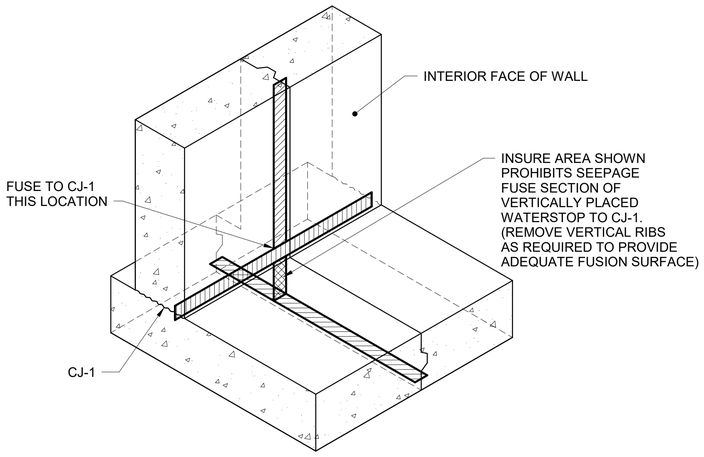
CJ-1 WITH WATERSTOP
CJ-2 WITHOUT WATERSTOP
"T" ≤ 30"



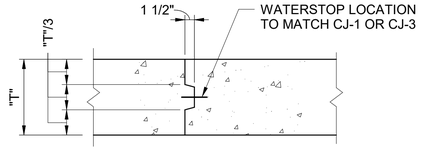
CJ-10 WITH WATERSTOP
CJ-11 WITHOUT WATERSTOP
"T" ≤ 30"



CJ-18

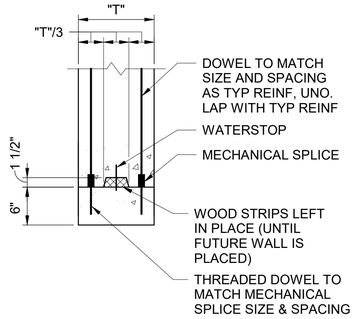


CONSTRUCTION JOINT INTERSECTION DETAIL

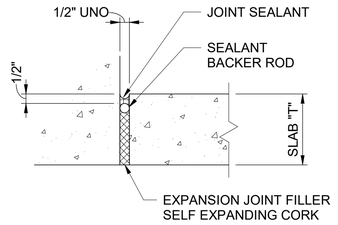


NOTE:
USE FOR VERTICAL AND HORIZONTAL JOINTS.

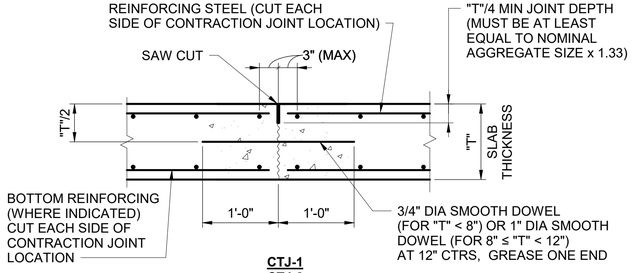
CJ-6 WITH WATERSTOP
CJ-7 WITHOUT WATERSTOP
"T" ≤ 30"



CJ-14 WITH WATERSTOP
CJ-15 WITHOUT WATERSTOP
"T" ≤ 30"



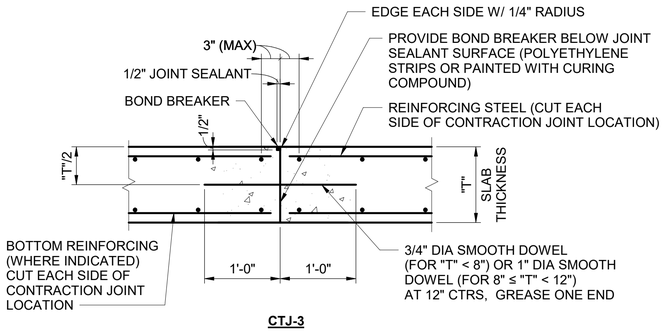
ISOLATION JOINT (IJ)



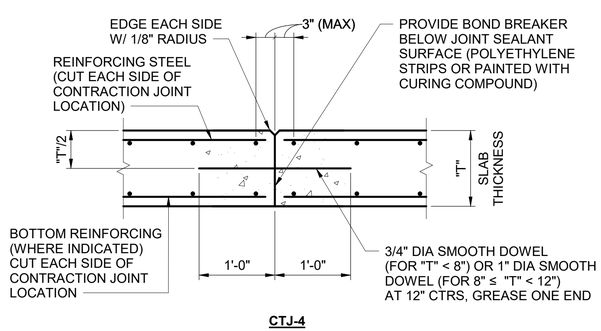
CTJ-1
CTJ-2

NOTES:

1. SAW JOINT AS SOON AS SURFACE IS FIRM ENOUGH TO NOT BE TORN OR DAMAGED BY THE BLADE (USUALLY 4 TO 12 HOURS AFTER CONCRETE HARDENS).
2. SAW CUT:
   CTJ-1: 1/8" WIDE SAW CUT (LEFT OPEN) OR PREFORMED CONTRACTION JOINT
   CTJ-2: 1/4" WIDE SAW CUT WITH SPECIFIED JOINT SEALANT



CTJ-3



CTJ-4

no.	date	by	ckd	description
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THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY
STRUCTURAL STANDARD DETAILS SHEET 2

project	contract
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drawing **006S502** — rev. **0**

sheet of sheets
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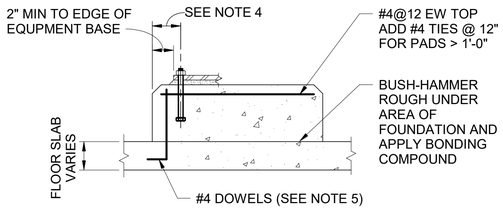
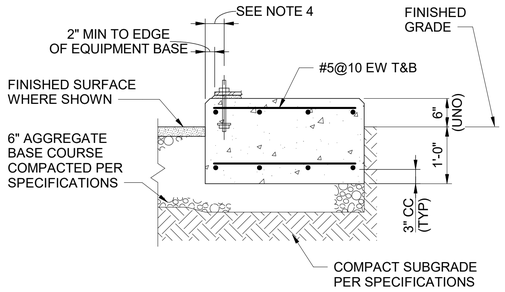


EP-1
SECTION
EQUIPMENT PAD FOUNDATION

NOTES:

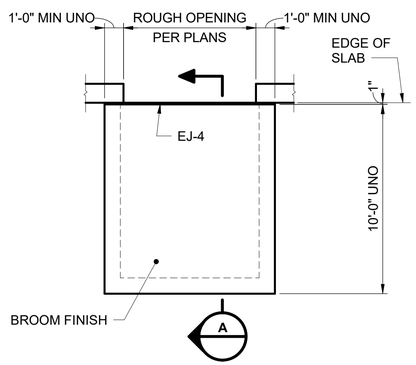
1. PROVIDE EP-1 EQUIPMENT PAD FOUNDATION FOR EQUIPMENT WHEN OTHER FOUNDATIONS HAVE NOT BEEN INDICATED.
2. PROVIDE ANCHOR BOLTS AND GROUT AS REQUIRED BY EQUIPMENT MANUFACTURER.
3. EQUIPMENT PAD FOUNDATIONS SHALL CONFORM TO THIS DETAIL, EQUIPMENT MANUFACTURER'S REQUIREMENTS, AND THE FOLLOWING:
   A. REINFORCE PAD TO CONFORM WITH THIS DETAIL. IF THE FLOOR IS CONSTRUCTED BEFORE THE DOWELS ARE PLACED, THE DOWELS SHALL BE INSTALLED USING ADHESIVE ANCHORS INTO THE FLOOR SLAB.
   B. EQUIPMENT SHALL BE GROUTED IN PLACE WITH NON-SHRINK GROUT, UNLESS OTHERWISE RECOMMENDED BY THE EQUIPMENT MANUFACTURER.
   C. EQUIPMENT ANCHOR BOLTS SHALL BE STANDARD TYPE II ANCHOR BOLT, UNLESS OTHERWISE RECOMMENDED BY THE EQUIPMENT MANUFACTURER.
4. DIMENSION SHALL BE 4-INCHES MINIMUM FOR PADS WITH 1-INCH DIAMETER ANCHOR BOLTS, 6-INCHES MINIMUM FOR PADS WITH ANCHOR BOLTS GREATER THAN 1-INCH DIAMETER.
5. PROVIDE DOWELS AT 12-INCHES MINIMUM CENTER TO CENTER, OR PROVIDE NUMBER OF DOWELS TO EQUAL TOTAL CROSS SECTIONAL AREA OF ANCHOR BOLTS OF PAD, EQUALLY SPACED AROUND PAD. IF FLOOR IS CONSTRUCTED BEFORE DOWELS ARE PLACED, THE DOWELS SHALL BE INSTALLED USING ADHESIVE ANCHOR SYSTEM INTO THE FLOOR SLAB.



EP-2
SECTION
EXTERIOR EQUIPMENT PAD FOUNDATION

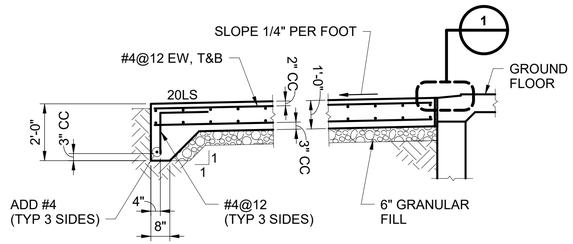
NOTES:

1. PROVIDE ANCHOR BOLTS AND GROUT AS REQUIRED BY EQUIPMENT MANUFACTURER.
2. PROVIDE ISOLATION JOINT WHERE PAD MEETS VERTICAL CONCRETE SURFACE.
3. EQUIPMENT PAD FOUNDATIONS SHALL CONFORM TO THIS DETAIL. EQUIPMENT MANUFACTURER'S REQUIREMENTS, AND THE FOLLOWING.
   A. REINFORCE PAD TO CONFORM WITH THIS DETAIL.
   B. EQUIPMENT SHALL BE GROUTED IN PLACE WITH NON-SHRINK GROUT, UNLESS OTHERWISE RECOMMENDED BY THE EQUIPMENT MANUFACTURER.
   C. EQUIPMENT ANCHOR BOLTS SHALL BE STANDARD TYPE II ANCHOR BOLTS, UNLESS OTHERWISE RECOMMENDED BY THE EQUIPMENT MANUFACTURER.
4. DIMENSION SHALL BE 4" MINIMUM FOR PADS WITH 1" DIAMETER ANCHOR BOLTS, 6" MINIMUM FOR PADS WITH ANCHOR BOLTS GREATER THAN 1" DIAMETER.
5. EXTERIOR EQUIPMENT PAD SHALL HAVE A LIGHT BROOM FINISH.



PLAN

TYPICAL APPROACH SLAB
NOT TO SCALE



SECTION A
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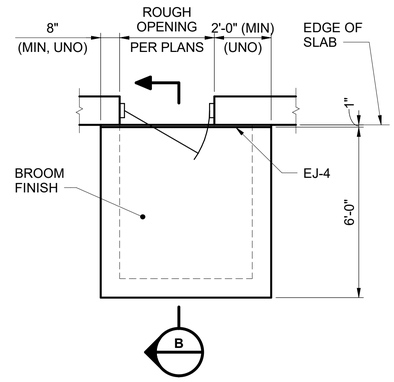
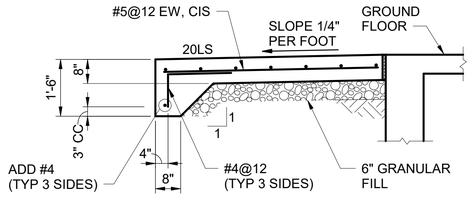


PLAN

TYPICAL DOOR STOOP
NOT TO SCALE



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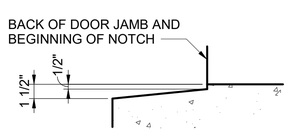
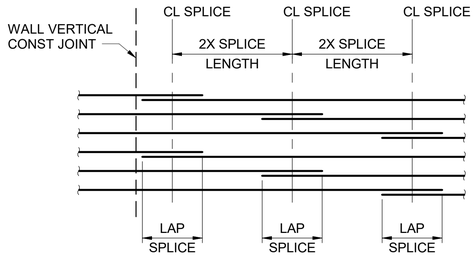
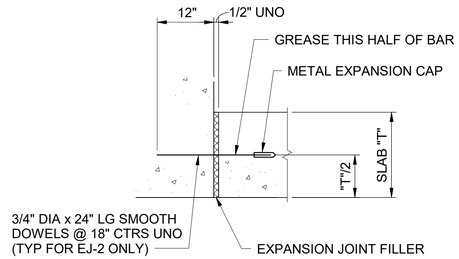


DETAIL 1
NOT TO SCALE

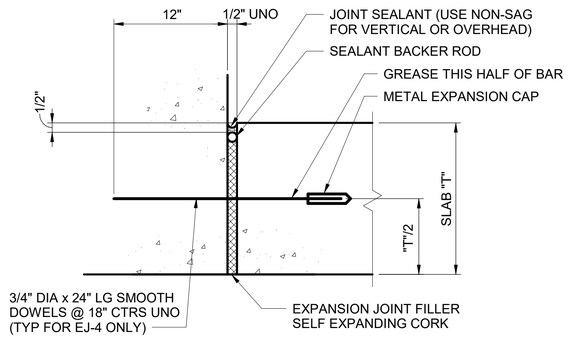


(TYP EACH FACE)

LAP SPLICE STAGGER DETAIL
FOR WALL HORIZONTAL REINFORCING
NOT TO SCALE



EJ-1 WITHOUT DOWEL
EJ-2 WITH DOWEL



EJ-3 WITHOUT DOWEL
EJ-4 WITH DOWEL

no.	date	by	ckd	description
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6200 BRIDGE POINT PARKWAY
SUITE 400 AUSTIN, TX 78730
816-333-9400
Burns & McDonnell Engineering Co, Inc.
TBPE FIRM No. 845

date	detailed
NOVEMBER 13, 2025	R. SCOLES
designed	checked
J. TSOUFLIAS	A. HOLMES

THE CITY OF SAN MARCOS

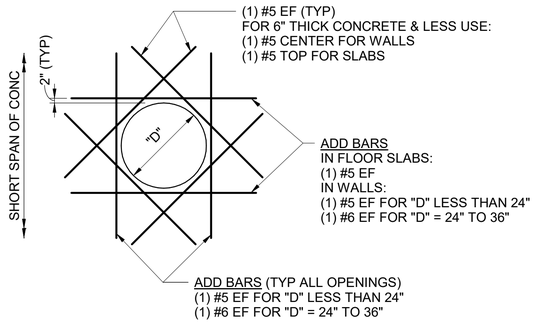
FM 1978 WATER RECLAMATION FACILITY
STRUCTURAL STANDARD DETAILS SHEET 3

project	contract
187533	

drawing **006S503** — rev. **0**

sheet of sheets

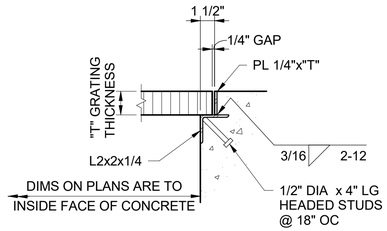
file 187533_006_S_R24.rvt



CO-1
UNSLEEVED OPENING
NOT TO SCALE

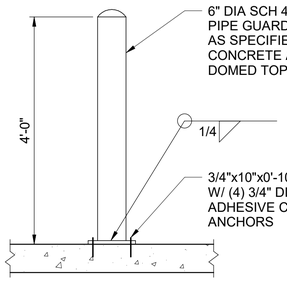
NOTES:

1. MINIMUM LENGTH OF ALL BARS SHALL BE "D" + 3'-6" WITH BARS CENTERED ON OPENING.
2. FOR OPENINGS LESS THAN 12" IN DIAMETER, THE ADD BARS ARE NOT REQUIRED IF NO REINFORCING IS CUT BY THE OPENING.
3. SHORT SPAN OF CONC = LESSER DISTANCE BETWEEN SUPPORT MEMBERS.
4. REINFORCE OPENINGS WITH "D" LARGER THAN 3'-0" AS INDICATED ON THE DRAWINGS. IF NOT INDICATED, CONTACT THE ENGINEER.
5. FOR CONCRETE OPENINGS THROUGH STEEL DECKING, BLOCK OUT CONCRETE WITHIN OPENING WITH STYROFOAM OR OTHER APPROVED MATERIAL AND SEAL WITH DUCT TAPE. CUT DECK TO MATCH INSIDE DIMENSIONS OF OPENING AFTER CONCRETE HAS SET FOR 7 DAYS.
6. METAL DECKING HOLES AND OPENINGS SHALL NOT BE CUT UNTIL IMMEDIATELY PRIOR TO BEING PERMANENTLY FILLED WITH THE EQUIPMENT OR STRUCTURE INTENDED TO FULFILL ITS SPECIFIC USE OR SHALL BE IMMEDIATELY COVERED. SEE OSHA SECTION 29CFR1926 SUBPART R.
7. REINFORCING SHOWN REPRESENTS THE MINIMUM REQUIRED AT ALL CO-1 OPENINGS, UNLESS NOTED OTHERWISE.

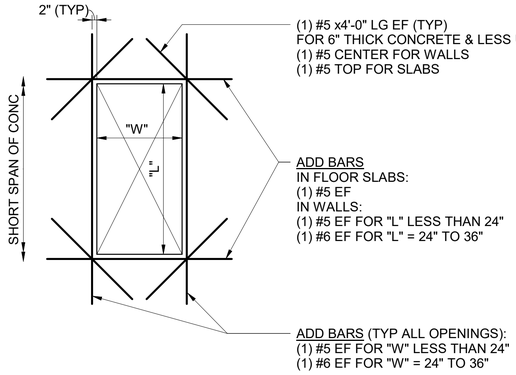


NOTE:
MITER, WELD AND GRIND SMOOTH ANGLES AT ALL CORNERS.

CE-4
NOT TO SCALE



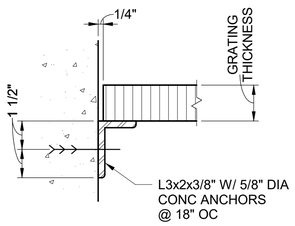
TYPICAL INTERIOR BOLLARD
NOT TO SCALE



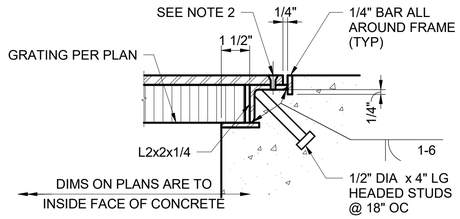
CO-2
UNSLEEVED OPENING
NOT TO SCALE

NOTES:

1. MINIMUM LENGTH OF ALL BARS SHALL BE ("L" OR "W") + 3'-6" WITH BARS CENTERED ON OPENING.
2. FOR OPENINGS ("L" OR "W") LESS THAN 12", THE ADD BARS ARE NOT REQUIRED IF NO REINFORCING IS CUT BY THE OPENING.
3. SHORT SPAN OF CONC = LESSER DISTANCE BETWEEN SUPPORT MEMBERS.
4. REINFORCE OPENINGS WITH "L" OR "W" LARGER THAN 3'-0" AS INDICATED ON THE DRAWINGS. IF NOT INDICATED, CONTACT THE ENGINEER.
5. FOR CONCRETE OPENINGS THROUGH STEEL DECKING, BLOCK OUT CONCRETE WITHIN OPENING WITH STYROFOAM OR OTHER APPROVED MATERIAL AND SEAL WITH DUCT TAPE. CUT DECK TO MATCH INSIDE DIMENSIONS OF OPENING AFTER CONCRETE HAS SET FOR 7 DAYS.
6. METAL DECKING HOLES AND OPENINGS SHALL NOT BE CUT UNTIL IMMEDIATELY PRIOR TO BEING PERMANENTLY FILLED WITH THE EQUIPMENT OR STRUCTURE INTENDED TO FULFILL ITS SPECIFIC USE OR SHALL BE IMMEDIATELY COVERED. SEE OSHA SECTION 29CFR1926 SUBPART R.
7. REINFORCING SHOWN REPRESENTS THE MINIMUM REQUIRED AT ALL CO-2 OPENINGS, UNLESS NOTED OTHERWISE.



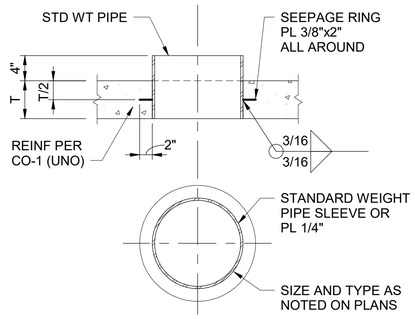
GS-1
NOT TO SCALE



NOTES:

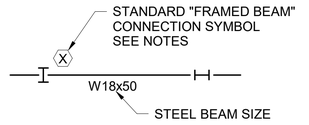
1. PLATE SECTION NOT TO EXCEED 8 SQ FT IN SIZE. PROVIDE TWO 3/4" DIA LIFTING HOLES IN EACH PLATE SECTION.
2. DRILL AND TAP EACH CORNER OF EACH PLATE SECTION AND FRAME FOR 1/4" DIA STAINLESS STEEL SCREWS.

CE-18
NOT TO SCALE



NOTE:
METAL DECKING HOLES AND OPENINGS SHALL NOTE BE CUT UNTIL IMMEDIATELY PRIOR TO BEING PERMANENTLY FILLED WITH THE EQUIPMENT OR STRUCTURE INTENDED TO FULFILL ITS SPECIFIC USE OR SHALL BE IMMEDIATELY COVERED. SEE OSHA SECTION 29CFR1926 SUBPART R.

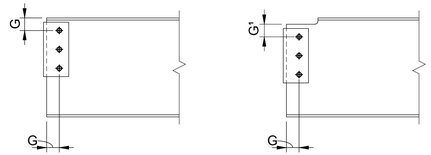
CO-8 WITH 4" PROJECTION
CO-9 WITHOUT 4" PROJECTION



STANDARD FRAMED BEAM CONNECTIONS
NOT TO SCALE

NOTES:

1. UNLESS NOTED OTHERWISE ALL BEAMS ON COLUMN ROW SHALL BE IN ACCORDANCE WITH TABLE 10-2 CASE 1 WITH SHOP WELDS.
2. THE NUMBER INDICATES THE MINIMUM NUMBER OF ROWS OF HIGH STRENGTH BOLTS FOR THAT END CONNECTION. END CONNECTIONS SHALL BE STANDARD "FRAMED BEAM" SLIP CRITICAL CONNECTIONS PER TABLE 10-1 CASE 1 OF AISC STEEL CONSTRUCTION MANUAL 13TH EDITION. AT CONTRACTORS OPTION UNLESS OTHERWISE INDICATED THE FOLLOWING MINIMUMS APPLY TO TABLE 10-1 CONNECTIONS.

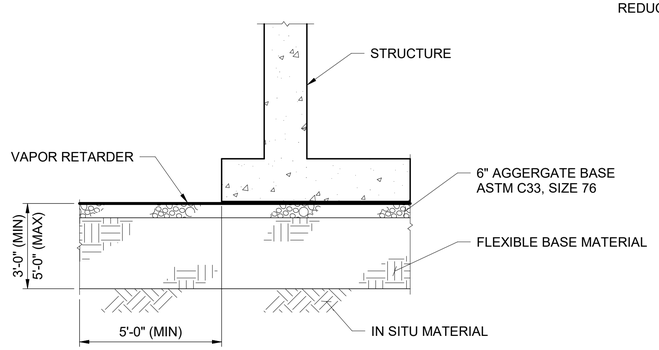


G & G' = 2" MIN FOR STD HOLES (G' = 1 1/4" MIN FOR BEAMS LESS THAN A W12).
G & G' = 2 1/4" MIN FOR OVERSIZED AND SHORT SLOTTED HOLES (G' = 1 3/8" MIN FOR BEAMS LESS THAN A W12).
MINIMUM CLIP ANGLE THICKNESS SHALL BE 5/16" BEAM TO BEAM CONNECTION.
MINIMUM CLIP ANGLE THICKNESS SHALL BE 3/8" BEAM TO COLUMN CONNECTION.
TABLE 10-2 CASE 1 WELDS TO BE 3/16"

3. WHERE NO STANDARD "FRAMED BEAM" CONNECTIONS SYMBOL (X) IS INDICATED BEAM END CONNECTIONS SHALL BE IN ACCORDANCE WITH THESE NOTES AND WITH THE FOLLOWING MINIMUM NUMBER OF HIGH STRENGTH BOLTS:

C6, W6, OR LESS	= 2 ROWS	W21	= 4 ROWS
C8 OR W8	= 2 ROWS	W24	= 5 ROWS
C10 OR W10	= 2 ROWS	W27	= 6 ROWS
C12 OR W12	= 2 ROWS	W30	= 7 ROWS
W14	= 3 ROWS	W33	= 8 ROWS
C15 OR W16	= 3 ROWS	W36	= 8 ROWS
W18	= 4 ROWS		

4. THE NUMBER OF BOLTS AND NUMBER OF ROWS OF BOLTS INDICATED OR STATED IS THE MINIMUM NUMBER OF BOLTS OR ROWS. PROVIDE ADDITIONAL BOLTS OR CONNECTION DEVICES, IF NECESSARY, TO COMPLY WITH OSHA REGULATION 29CFR1926 SUBPART R-STEEL ERECTION.
5. ROWS OF BOLTS: THE NUMBER OF FASTENERS IN A VERTICAL ROW.
6. BEAM CONNECTIONS ARE BASED ON THE USE OF STANDARD, OVERSIZED OR SHORT-SLOTTED HOLES AS DEFINED BY AISC STEEL CONSTRUCTION MANUAL 13TH EDITION. LONG-SLOTTED HOLES ARE NOT PERMITTED.
7. BEAM CONNECTIONS GAGE SHALL BE 5 1/2" MAX GAGE MAY BE REDUCED AT FABRICATORS OPTION.



NOTES:

1. REFER TO DIVISION 31 FOR EARTHWORK REQUIREMENTS.
2. SEE GENERAL NOTE 5.E UNDER THE GEOTECHNICAL CRITERIA ON DRAWING 002S001 FOR FLEXIBLE BASE MATERIAL.
3. USE AS INDICATED ON DRAWINGS.

TYPICAL BELOW-GRADE STRUCTURE SUBGRADE FOUNDATION DETAIL
NOT TO SCALE

no.	date	by	ckd	description
0	03/20/26	JT	AMH	GMP 1/2: ISSUED FOR BID

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SUITE 400 AUSTIN, TX 78730
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date	detailed
NOVEMBER 13, 2025	R. SCOLES
designed	checked
J. TSOUFLIAS	A. HOLMES

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY
STRUCTURAL STANDARD DETAILS SHEET 4

project	contract
187533	

drawing **006S504** rev. **0**

sheet of sheets
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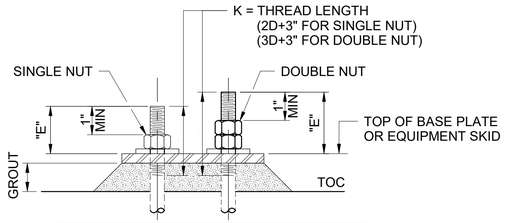
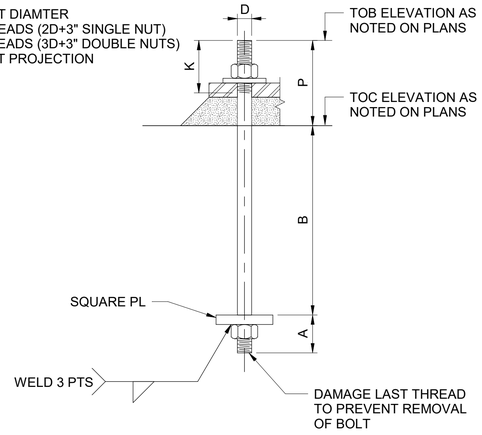


EXTENSION TABLE DIM "E"		
AB DIA	SINGLE NUT	DOUBLE NUTS
5/8	2 1/4	2 3/4
3/4	2 1/4	3
7/8	2 1/2	3 1/2
1	2 3/4	3 3/4
1 1/8	3	4
1 1/4	3 1/4	4 1/2
1 3/8	3 1/4	4 3/4
1 1/2	3 1/2	5
1 3/4	4	5 3/4
2	4 1/4	6 1/4
2 1/4	4 3/4	7
2 1/2	5	7 1/2
2 3/4	5 1/2	8 1/4
3	5 3/4	8 3/4

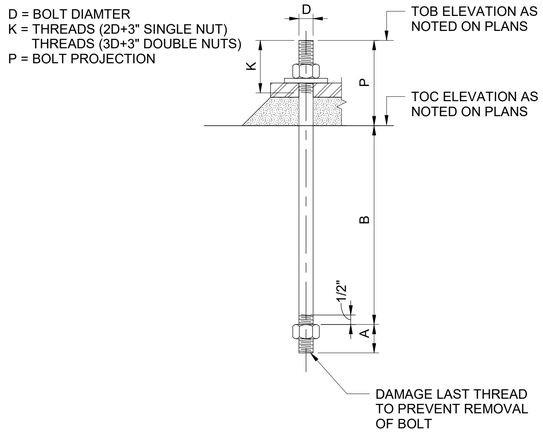
ALL DIMENSIONS IN INCHES

ANCHOR BOLT PROJECTION
(FOR REFERENCE)



SCHEDULE				
D	A	B	SQUARE PL	REMARKS
5/8"	2"	8"	PL 1/2"x2 1/2" SQ	
3/4"	2"	10"	PL 1/2"x3" SQ	
7/8"	3"	1'-0"	PL 5/8"x3 1/2" SQ	
1"	3"	1'-2"	PL 5/8"x3 1/2" SQ	
1 1/8"	3"	1'-4"	PL 3/4"x4" SQ	
1 1/4"	3"	1'-6"	PL 3/4"x4 1/2" SQ	
1 3/8"	4"	1'-8"	PL 7/8"x5" SQ	
1 1/2"	4"	1'-10"	PL 7/8"x5 1/2" SQ	
1 3/4"	4"	2'-0"	PL 1"x6" SQ	
2"	4"	2'-2"	PL 1 1/4"x7" SQ	
2 1/4"	5"	2'-4"	PL 1 1/2"x7 1/2" SQ	
2 1/2"	6"	2'-6"	PL 1 3/4"x8 1/2" SQ	
2 3/4"	6"	2'-9"	PL 2"x9 1/2" SQ	
3"	7"	3'-0"	PL 2 1/4"x10" SQ	

TYPE II ANCHOR BOLT
UNSLEEVED BOLT

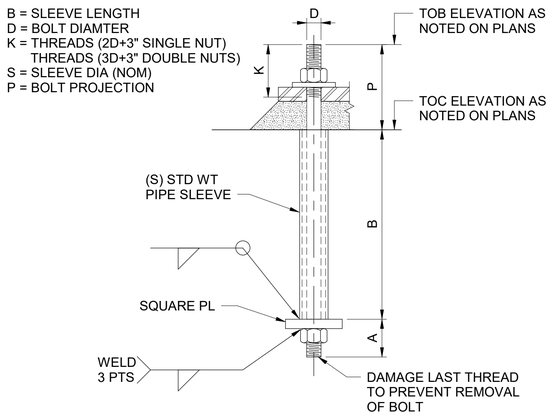


SCHEDULE			
D	A*	B	REMARKS
3/8"	2"	6"	
1/2"	2"	7"	
5/8"	2"	10"	
3/4"	2"	1'-0"	
7/8"	3"	1'-2"	
1"	3"	1'-4"	
1 1/8"	3"	1'-6"	
1 1/4"	3"	1'-8"	
1 3/8"	4"	1'-10"	
1 1/2"	4"	2'-0"	
1 3/4"	4"	2'-5"	
2"	4"	2'-10"	

TYPE VII ANCHOR BOLT
THREADED ROD OR MACHINE BOLT

NOTES:

1. * NOT REQUIRED FOR MACHINE BOLTS.
2. CONTRACTOR HAS OPTION OF USING HEADED MACHINE BOLTS IN LIEU OF THREADED RODS.
3. FULLY THREADED RODS ARE NOT PERMITTED.
4. MACHINE BOLTS SHALL CONFORM TO ASTM F1554, GRADE 36.



SCHEDULE					
D	A	B	S	SQUARE PL	REMARKS
5/8"	2"	8"	1 1/2"	PL 1/2"x2 1/2" SQ	
3/4"	2"	10"	1 1/2"	PL 1/2"x3" SQ	
7/8"	3"	1'-0"	2"	PL 5/8"x3 1/2" SQ	
1"	3"	1'-2"	2"	PL 5/8"x3 1/2" SQ	
1 1/8"	3"	1'-4"	2"	PL 3/4"x4" SQ	
1 1/4"	3"	1'-6"	2 1/2"	PL 3/4"x4 1/2" SQ	
1 3/8"	4"	1'-8"	2 1/2"	PL 7/8"x5" SQ	
1 1/2"	4"	1'-10"	2 1/2"	PL 7/8"x5 1/2" SQ	
1 3/4"	4"	2'-0"	3"	PL 1"x6" SQ	
2"	4"	2'-2"	3"	PL 1 1/4"x7" SQ	
2 1/4"	5"	2'-4"	3 1/2"	PL 1 1/2"x7 1/2" SQ	
2 1/2"	6"	2'-6"	3 1/2"	PL 1 3/4"x8 1/2" SQ	
2 3/4"	6"	2'-9"	4"	PL 2"x9 1/2" SQ	
3"	7"	3'-0"	4"	PL 2 1/4"x10" SQ	

TYPE I ANCHOR BOLT
SLEEVED BOLT

no.	date	by	ckd	description
0	03/20/26	JT	AMH	GMP 1/2: ISSUED FOR BID

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date NOVEMBER 13, 2025	detailed R. SCOLES
designed J. TSOUFLIAS	checked A. HOLMES

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY
STRUCTURAL STANDARD
DETAILS SHEET 5

project 187533	contract

drawing **006S505** – rev. **0**

sheet of sheets

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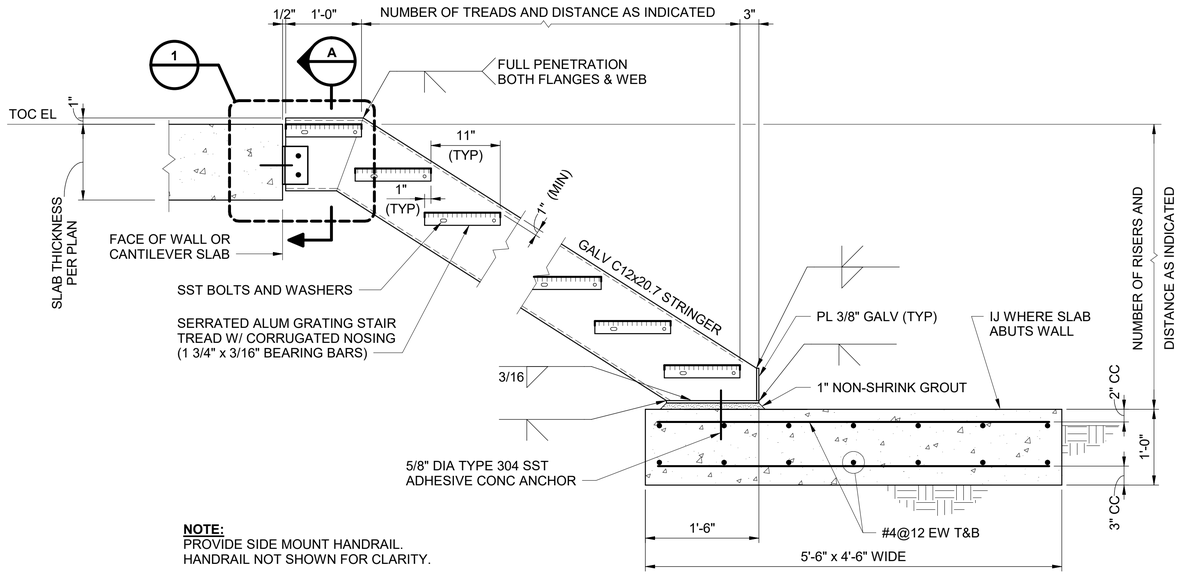
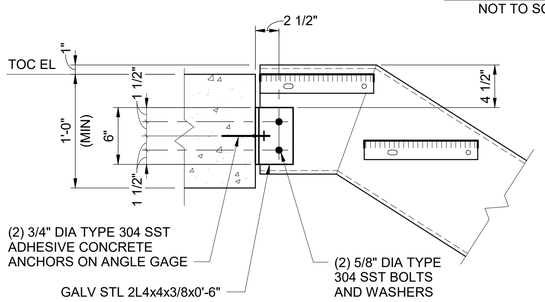


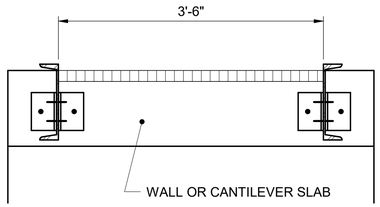
NOTE:
PROVIDE SIDE MOUNT HANDRAIL.
HANDRAIL NOT SHOWN FOR CLARITY.

STANDARD STAIR DETAIL
NOT TO SCALE



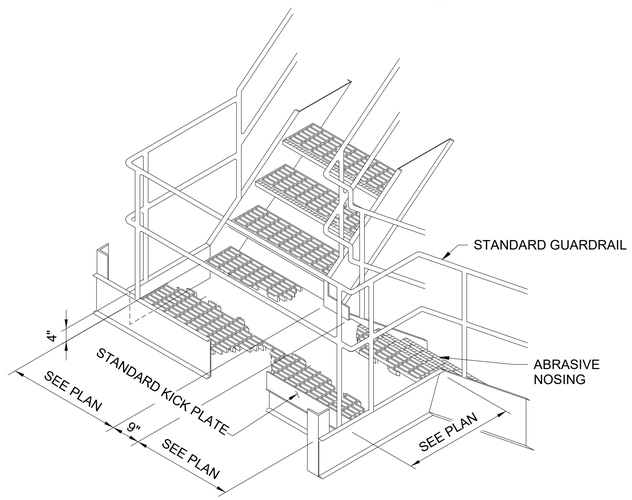
NOTE:
HANDRAIL NOT SHOWN FOR CLARITY.

DETAIL 1
NOT TO SCALE



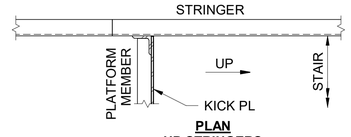
NOTE:
PROVIDE SIDE MOUNT HANDRAIL.
HANDRAIL NOT SHOWN FOR CLARITY.

SECTION A
NOT TO SCALE

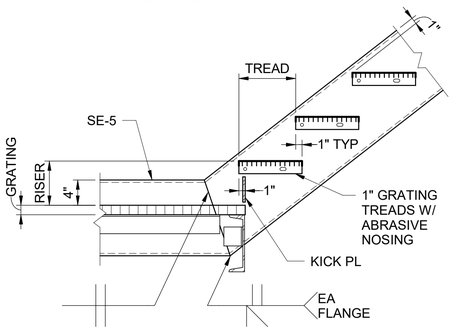


DETAIL
TYPICAL STAIR LANDING
NOT TO SCALE

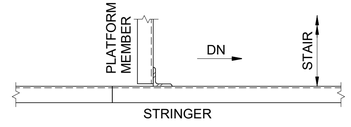
GENERAL NOTES:
1. ALL STAIR TREAD NOSINGS SHALL BE ABRASIVE TYPE.
2. ALL STAIR TREAD LEADING EDGES SHALL HAVE A RADIUS OF CURVATURE THAT IS NOT LESS THAN 1/16 INCH AND NOT MORE THAN 9/16 INCH.



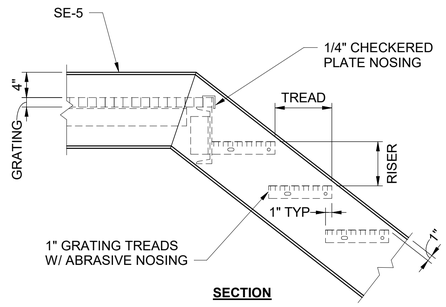
PLAN
UP STRINGERS
GRATING AND TREADS NOT SHOWN FOR CLARITY



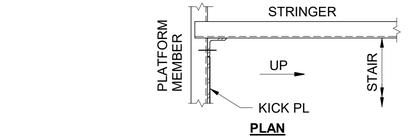
SECTION



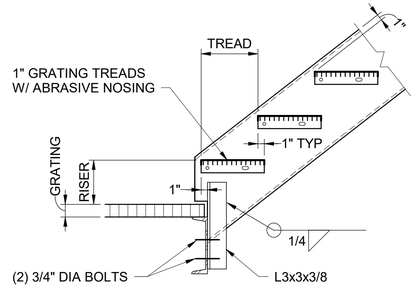
PLAN
DOWN STRINGERS
GRATING AND TREADS NOT SHOWN FOR CLARITY



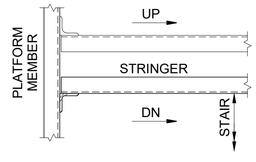
SECTION



PLAN
UP STRINGERS
GRATING AND TREADS NOT SHOWN FOR CLARITY



SECTION



PLAN
DOWN STRINGERS
GRATING AND TREADS NOT SHOWN FOR CLARITY

SECTION

STAIR TO INTERMEDIATE LANDING DETAILS
NOT TO SCALE

no.	date	by	ckd	description
0	03/20/26	JT	AMH	GMP 1/2: ISSUED FOR BID

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BURNS McDONNELL
6200 BRIDGE POINT PARKWAY
SUITE 400 AUSTIN, TX 78730
816-333-9400
Burns & McDonnell Engineering Co, Inc.
TBPE FIRM No. 845

date	detailed
NOVEMBER 13, 2025	R. SCOLES
designed	checked
J. TSOUFLIAS	A. HOLMES

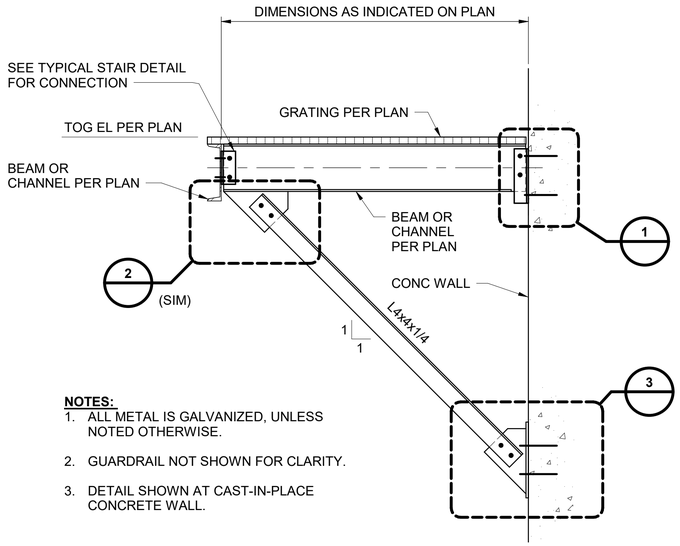
THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY
STRUCTURAL STANDARD
DETAILS SHEET 6

project	contract
187533	

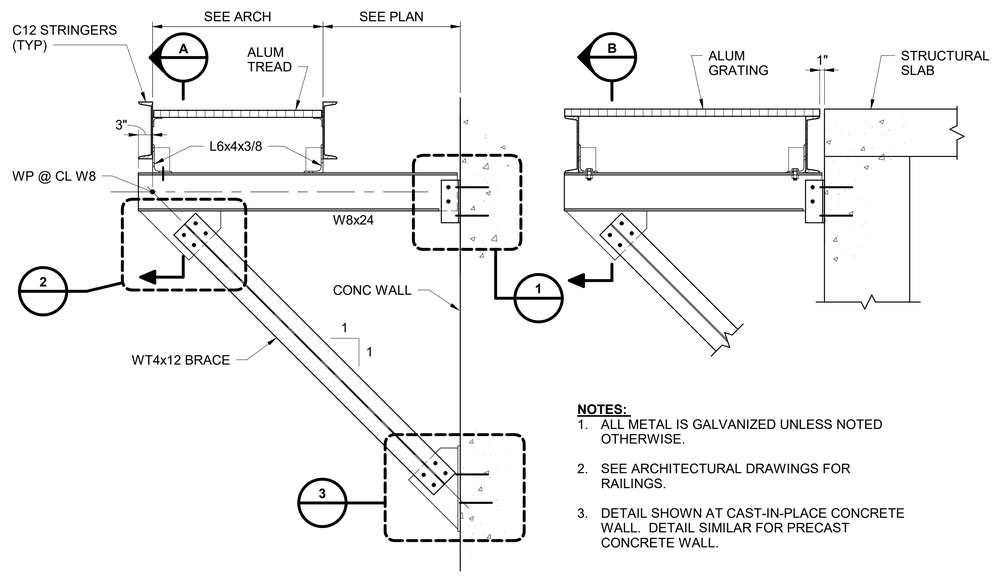
drawing **006S506** rev. **0**

sheet of sheets
file 187533_006_S_R24.rvt



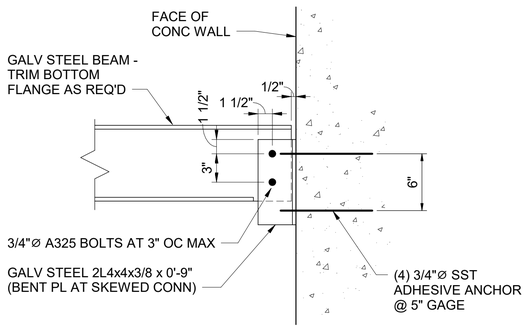
NOTES:
1. ALL METAL IS GALVANIZED, UNLESS NOTED OTHERWISE.
2. GUARDRAIL NOT SHOWN FOR CLARITY.
3. DETAIL SHOWN AT CAST-IN-PLACE CONCRETE WALL.

KNEE BRACE DETAIL (KB-1)
NOT TO SCALE



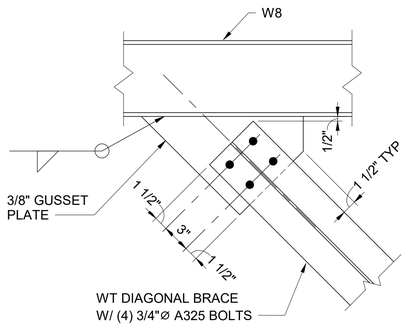
NOTES:
1. ALL METAL IS GALVANIZED UNLESS NOTED OTHERWISE.
2. SEE ARCHITECTURAL DRAWINGS FOR RAILINGS.
3. DETAIL SHOWN AT CAST-IN-PLACE CONCRETE WALL. DETAIL SIMILAR FOR PRECAST CONCRETE WALL.

KNEE BRACE DETAIL (KB-2)
NOT TO SCALE



NOTE:
FIELD LOCATE VERTICAL REINF PRIOR TO INSTALLING ANCHORS. FIELD ADJUST ANGLES TO AVOID REINF. DO NOT DAMAGE EXISTING REINF.

DETAIL 1
NOT TO SCALE



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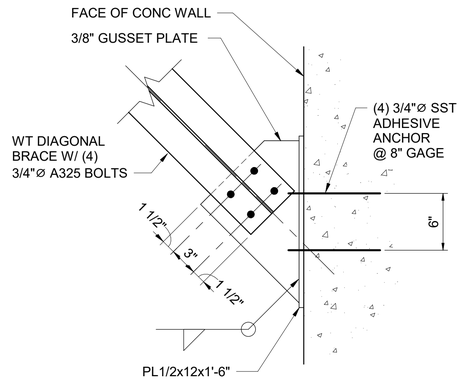
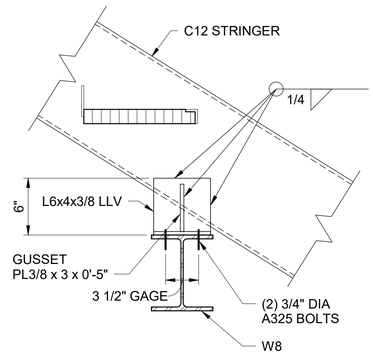
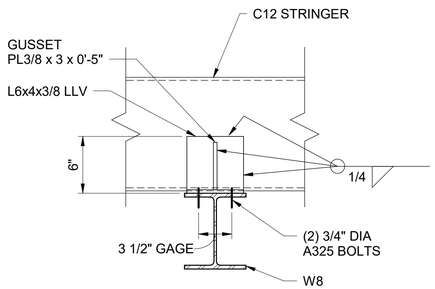
NOT TO SCALE



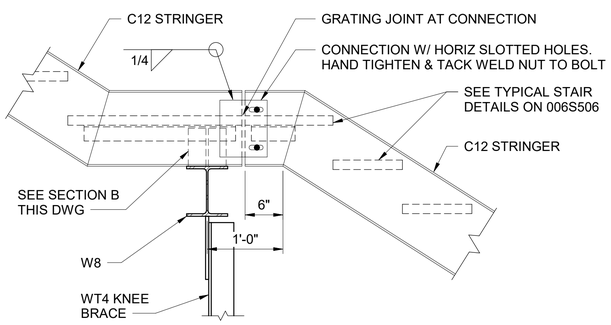
DETAIL 3
NOT TO SCALE



SECTION A
NOT TO SCALE



SECTION B
NOT TO SCALE



STAIR LANDING KNEE BRACE CONNECTION DETAIL
NOT TO SCALE

no.	date	by	ckd	description
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SUITE 400 AUSTIN, TX 78730
816-333-9400
Burns & McDonnell Engineering Co, Inc.
TBPE FIRM No. 845

date	detailed
NOVEMBER 13, 2025	R. SCOLES
designed	checked
J. TSOUFLIAS	A. HOLMES

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY
STRUCTURAL STANDARD DETAILS SHEET 7

project	contract
187533	

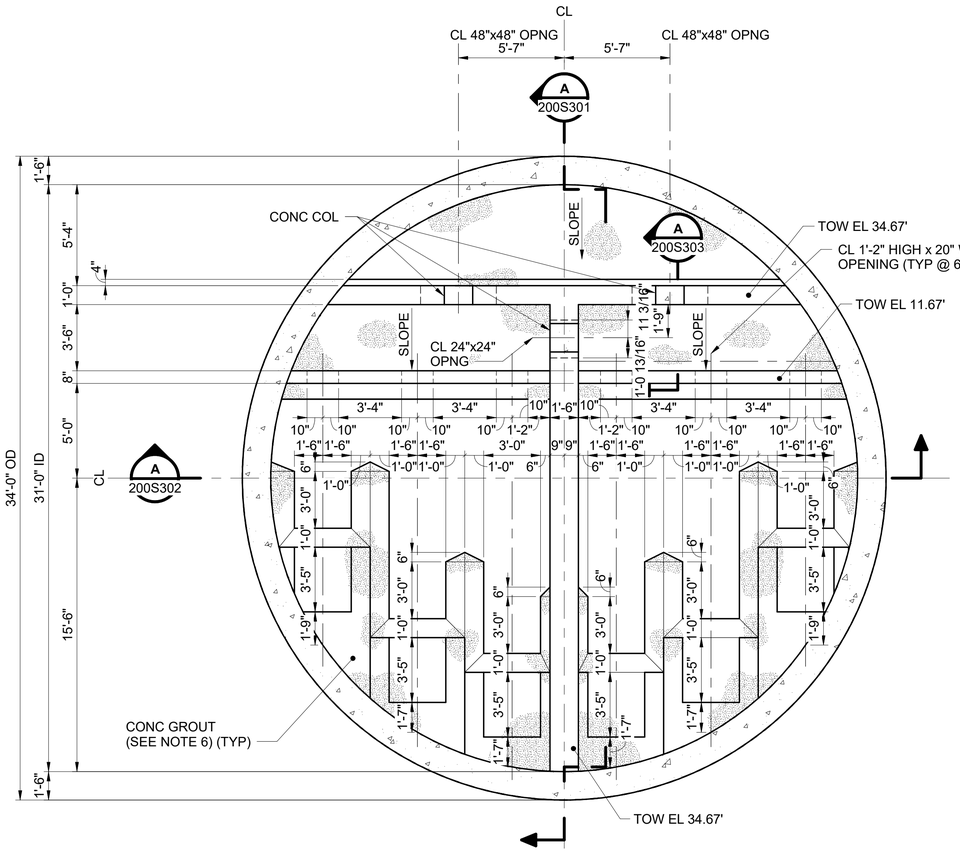
drawing **006S507** — rev. **0**

sheet of sheets

file 187533_006_S_R24.rvt

DRAWING NOTES:

1. SEE DRAWINGS 002S001 AND 002S002 FOR GENERAL NOTES.
2. SEE DRAWINGS 006S501 TO 006S507 FOR STANDARD DETAILS.
3. DESIGN CRITERIA: SEE DRAWING 002S001 AS MODIFIED BELOW
   A. DEAD LOADS:
      1. EQUIPMENT LOADS (BASIS OF DESIGN):
         a. PUMPS = 3,484 LB.
   B. LIVE LOADS:
      1. TOP SLAB LIVE LOAD = 150 PSF
4. REFER TO CIVIL, ELECTRICAL, MECHANICAL AND PROCESS DRAWINGS FOR EQUIPMENT, PENETRATIONS, PIPE SUPPORTS AND EMBEDED ITEMS NOT SHOWN ON STRUCTURAL DRAWINGS.
5. REINFORCE AROUND ALL OPENINGS IN CONCRETE CONSTRUCTION IN ACCORDANCE WITH STANDARD DETAIL CO-1/CO-2 ON DRAWING 006S504 AS APPLICABLE.
6. COORDINATE SHAPING AROUND PUMPS WITH PUMP MANUFACTURER'S REQUIREMENTS.
7. REINFORCEMENT SHOWN IN TOP PLAN ARE IN ADDITION TO TYPICAL TOP SLAB REINFORCEMENT. SEE SECTION A/200S301 FOR TYPICAL TOP SLAB REINFORCEMENT.

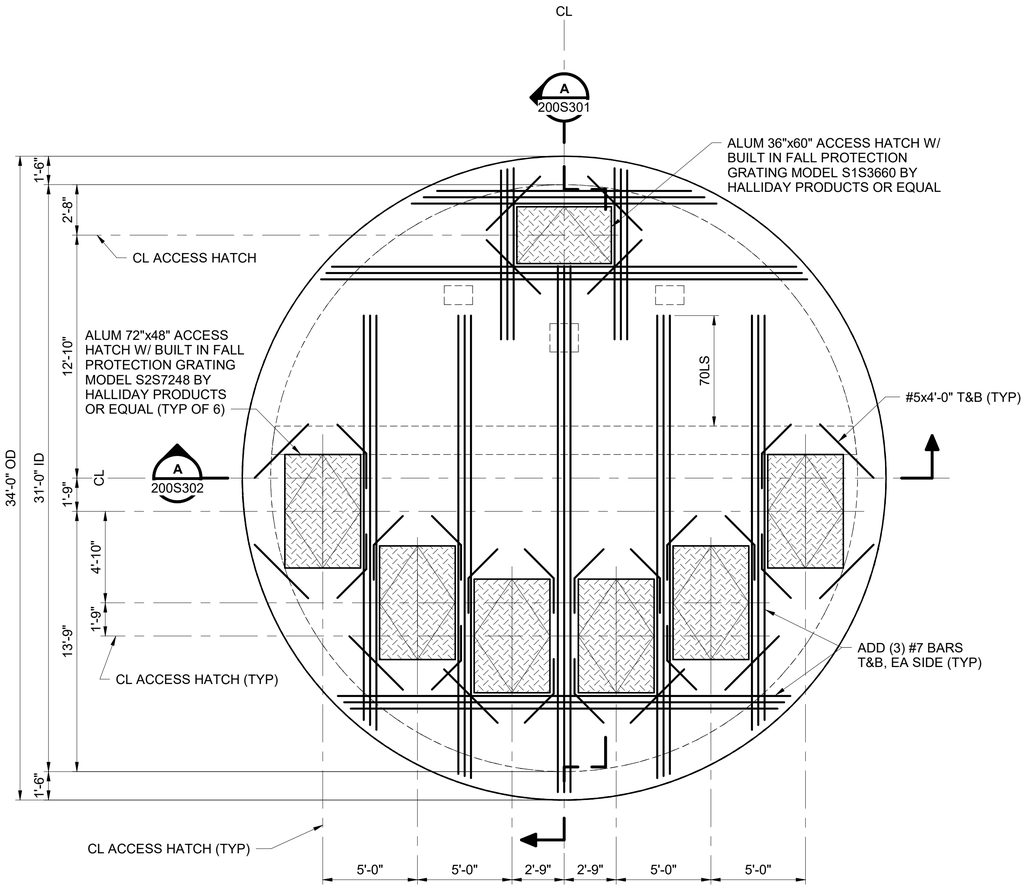


FOUNDATION PLAN

0 2' 4' 8'

SCALE IN FEET

NORTH



TOP PLAN @ EL 595.50'

0 2' 4' 8'

SCALE IN FEET

NORTH

no.	date	by	ckd	description
0	03/20/26	JT	AMH	GMP 1/2: ISSUED FOR BID

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BURNS McDONNELL

6200 BRIDGE POINT PARKWAY,SUITE 400
AUSTIN, TX 78730
Burns & McDonnell Engineering Co, Inc.
FIRM Reg. No. F-845

date	detailed
OCTOBER 24, 2025	R. SCOLES
designed	checked
J. TSOUFLIAS	A. HOLMES

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY

INFLUENT PUMP STATION PLANS

project	contract
187533	

drawing **200S101** rev. **0**

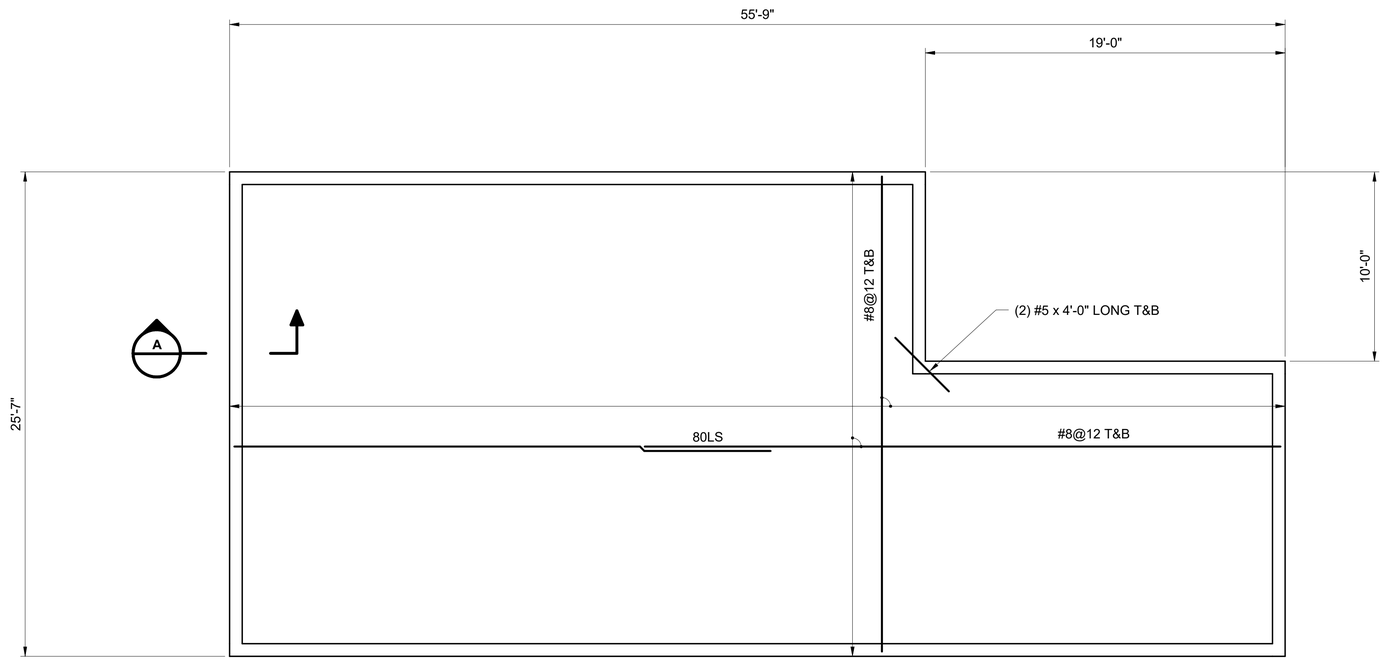
sheet of sheets

file 187533_200_S_R24.rvt

DRAWING NOTES:

1. SEE DRAWINGS 002S001 AND 002S002 FOR GENERAL NOTES.
2. SEE DRAWINGS 006S501 TO 006S507 FOR STANDARD DETAILS.

no.	date	by	ckd	description
0	03/20/26	JT	AMH	GMP 1/2: ISSUED FOR BID

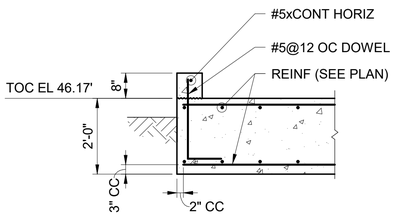


VALVE PAD PLAN

0 2' 4' 8'

SCALE IN FEET

NORTH



SECTION A

0 1' 2' 4'

SCALE IN FEET

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FIRM Reg. No. F-845

date	detailed
OCTOBER 24, 2025	R. SCOLES
designed	checked
J. TSOUFLIAS	A. HOLMES

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY

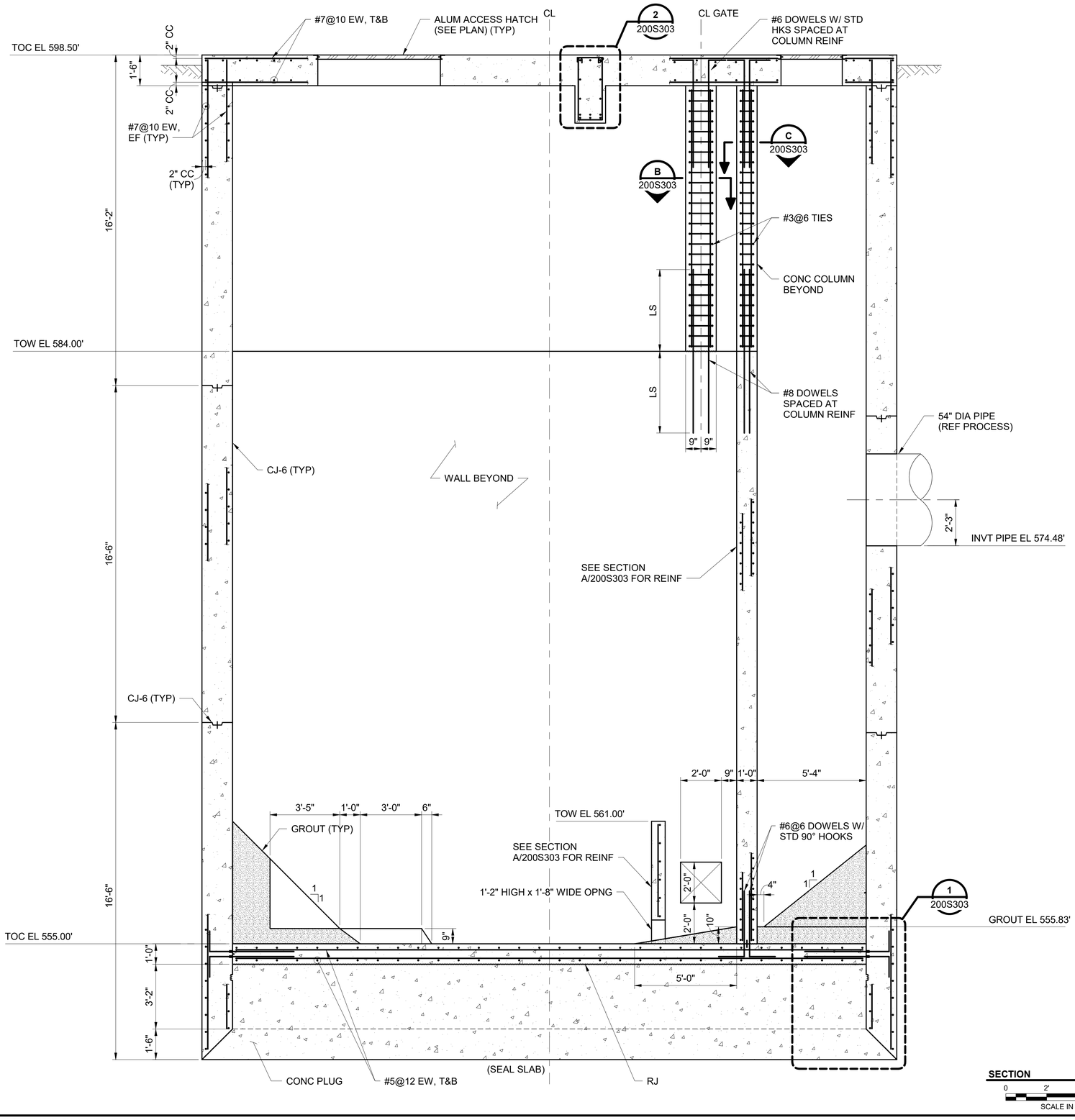
INFLUENT PUMP STATION
VALVE PAD PLAN AND SECTION

project	contract
187533	

drawing **200S102** rev. **0**

sheet of sheets

file 187533_200_S_R24.rvt



no.	date	by	ckd	description
0	03/31/26	JT	AMH	GMP 1/2: ISSUED FOR BID

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AUSTIN, TX 78730
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date	detailed
OCTOBER 24, 2025	R. SCOLES
designed	checked
J. TSOUFLIAS	A. HOLMES

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY

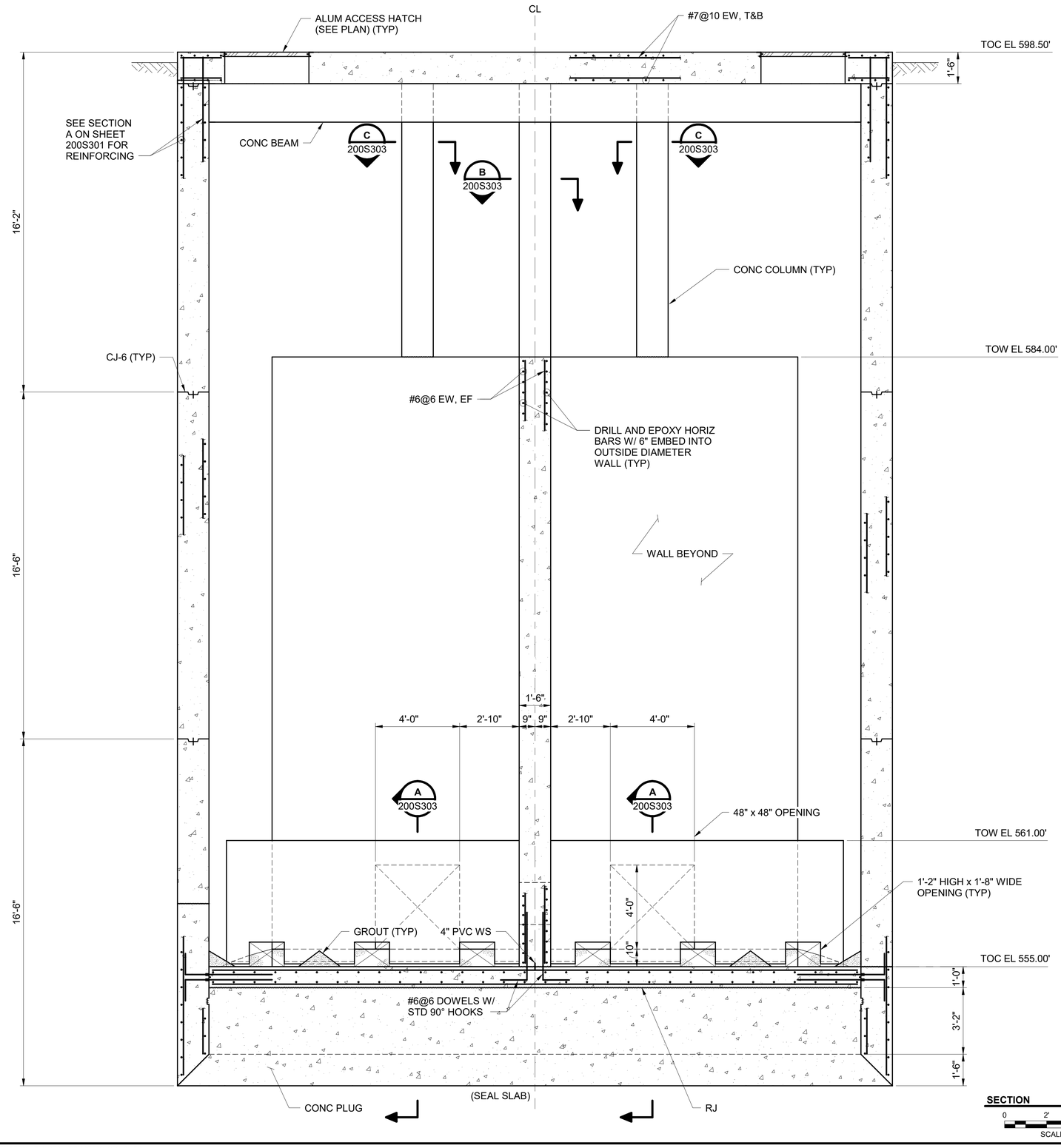
INFLUENT PUMP STATION
SECTIONS AND DETAILS SHEET 1

project	contract
187533	

drawing **200S301** rev. **0**

sheet of sheets

file 187533_200_S_R24.rvt



SECTION A 200S101

0 2' 4' 6'

SCALE IN FEET

no.	date	by	ckd	description
0	03/31/26	JT	AMH	GMP 1/2: ISSUED FOR BID

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AUSTIN, TX 78730
Burns & McDonnell Engineering Co, Inc.
FIRM Reg. No. F-845

date	detailed
OCTOBER 24, 2025	R. SCOLES
designed	checked
J. TSOUFLIAS	A. HOLMES

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY

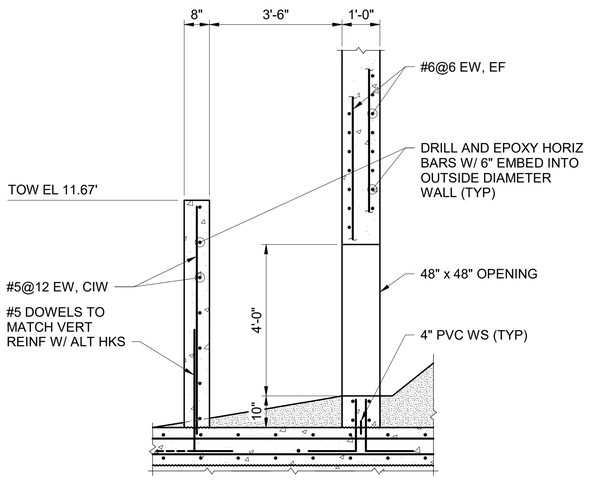
INFLUENT PUMP STATION
SECTIONS AND DETAILS SHEET 2

project	contract
187533	

drawing **200S302** rev. **0**

sheet of sheets

file 187533_200_S_R24.rvt

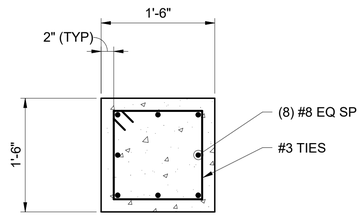


SECTION A

0 1' 2' 4'

SCALE IN FEET

200S101
200S302

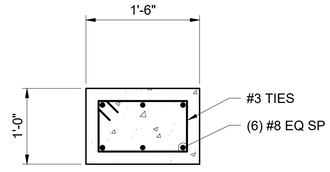


SECTION B

0 1/2' 1' 2'

SCALE IN FEET

200S301
200S302

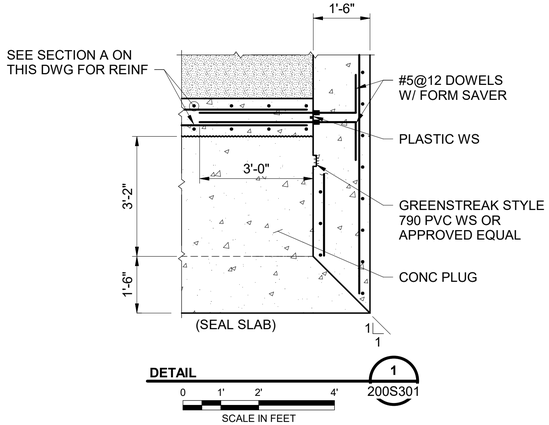


SECTION C

0 1/2' 1' 2'

SCALE IN FEET

200S301
200S302

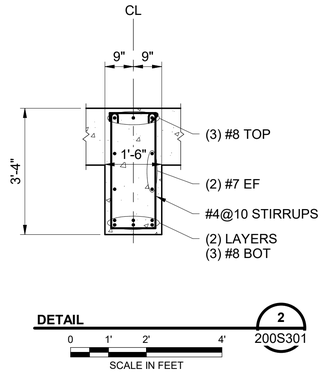


DETAIL 1

0 1' 2' 4'

SCALE IN FEET

200S301



DETAIL 2

0 1' 2' 4'

SCALE IN FEET

200S301

no.	date	by	ckd	description
0	03/20/26	JT	AMH	GMP 1/2: ISSUED FOR BID

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FIRM Reg. No. F-845

date	detailed
OCTOBER 24, 2025	R. SCOLES
designed	checked
J. TSOUFLIAS	A. HOLMES

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY

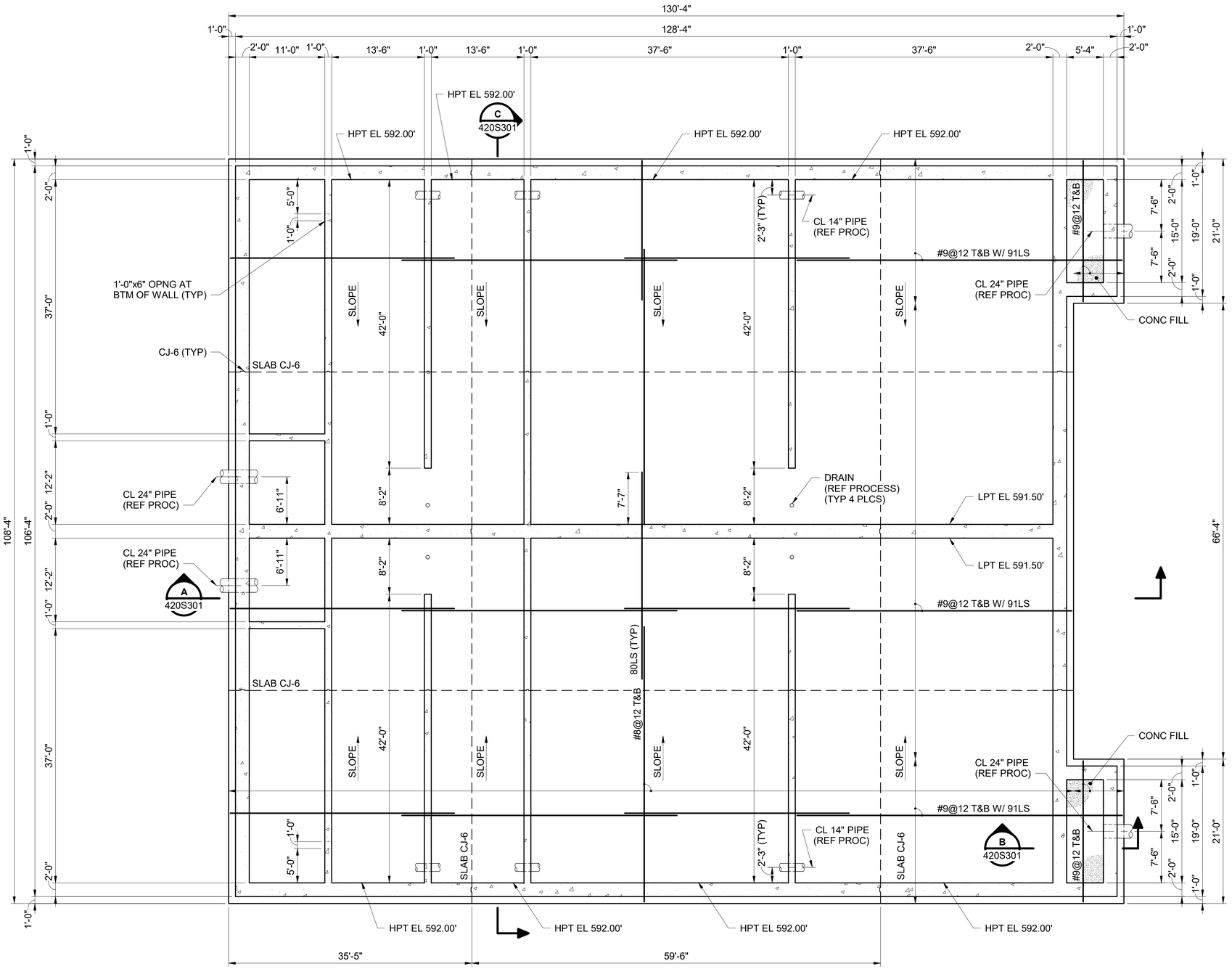
INFLUENT PUMP STATION
SECTIONS AND DETAILS SHEET 3

project	contract
187533	

drawing **200S303** — rev. **0**

sheet of sheets

file 187533_200_S_R24.rvt



DRAWING NOTES:

1. SEE DRAWINGS 002S001 AND 002S002 FOR GENERAL NOTES.
2. SEE DRAWINGS 006S501 TO 006S507 FOR STANDARD DETAILS.
3. DESIGN CRITERA: SEE DRAWING 002S001 AS MODIFIED BELOW
   A. DEAD LOADS:
      1. GRATING = 11 PSF
      2. HANDRAIL = 15 PLF
   B. WIND LOADS:
      1. PARTIALLY BURIED STRUCTURE - NOT APPLICABLE
4. REFER TO CIVIL, ELECTRICAL, MECHANICAL AND PROCESS DRAWINGS FOR EQUIPMENT, OPENINGS, PENETRATIONS, PIPE SUPPORTS AND EMBEDDED ITEMS NOT SHOWN ON STRUCTURAL DRAWINGS.
5. STRUCTURE SHALL NOT BE BACKFILLED UNTIL CONCRETE HAS ATTAINED ITS REQUIRED 28-DAY DESIGN STRENGTH.
6. REINFORCE AROUND ALL OPENINGS IN CONCRETE CONSTRUCTION IN ACCORDANCE WITH STANDARD DETAIL CO-1/ CO-2 ON DRAWING 006S504 AS APPLICABLE.
7. REINFORCEMENT SHALL BE CONTINUOUS THROUGH CONSTRUCTION JOINTS.

FOUNDATION PLAN

0 4' 8' 16'

SCALE IN FEET

NORTH

no.	date	by	ckd	description
0	03/20/26	JT	AMH	GMP 1/2: ISSUED FOR BID

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date	detailed
OCTOBER 10, 2025	R. SCOLES
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J. TSOUFLIAS	A. HOLMES

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY

BNR BASINS
FOUNDATION PLAN

project	contract
187533	

drawing **420S101** rev. **0**

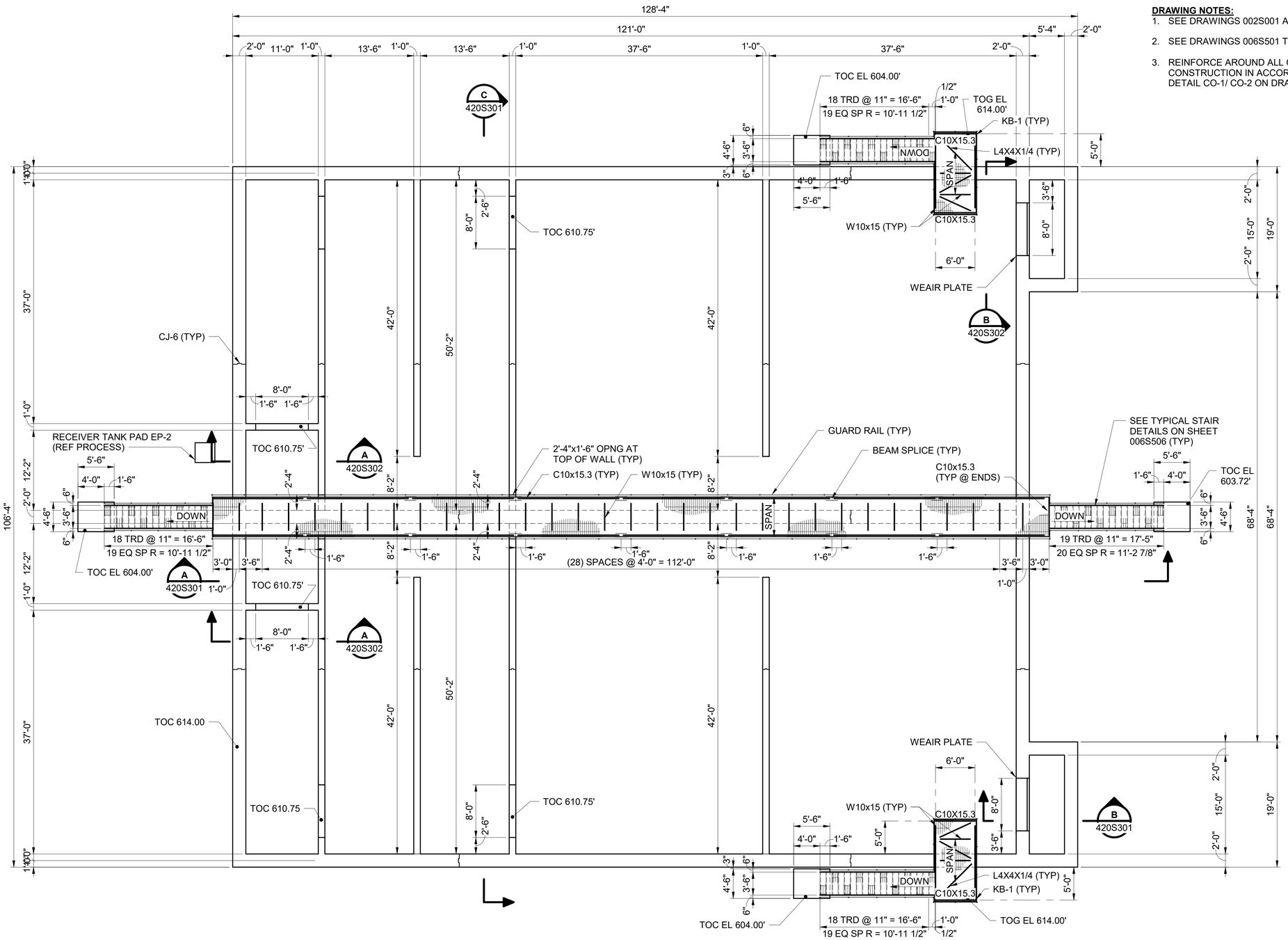
sheet of sheets

file 187533_410_S_R24.rvt

DRAWING NOTES:

1. SEE DRAWINGS 002S001 AND 002S002 FOR GENERAL NOTES.
2. SEE DRAWINGS 006S501 TO 006S507 FOR STANDARD DETAILS.
3. REINFORCE AROUND ALL OPENINGS IN CONCRETE CONSTRUCTION IN ACCORDANCE WITH STANDARD DETAIL CO-1/ CO-2 ON DRAWING 006S504 AS APPLICABLE.

no.	date	by	ckd	description
0	03/20/26	JT	AMH	GMP 1/2: ISSUED FOR BID



TOP PLAN @ EL 614.00'

0 4' 8' 16'

SCALE IN FEET

NORTH

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date	detailed
OCTOBER 10, 2025	R. SCOLES
designed	checked
J. TSOUFLIAS	A. HOLMES

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY

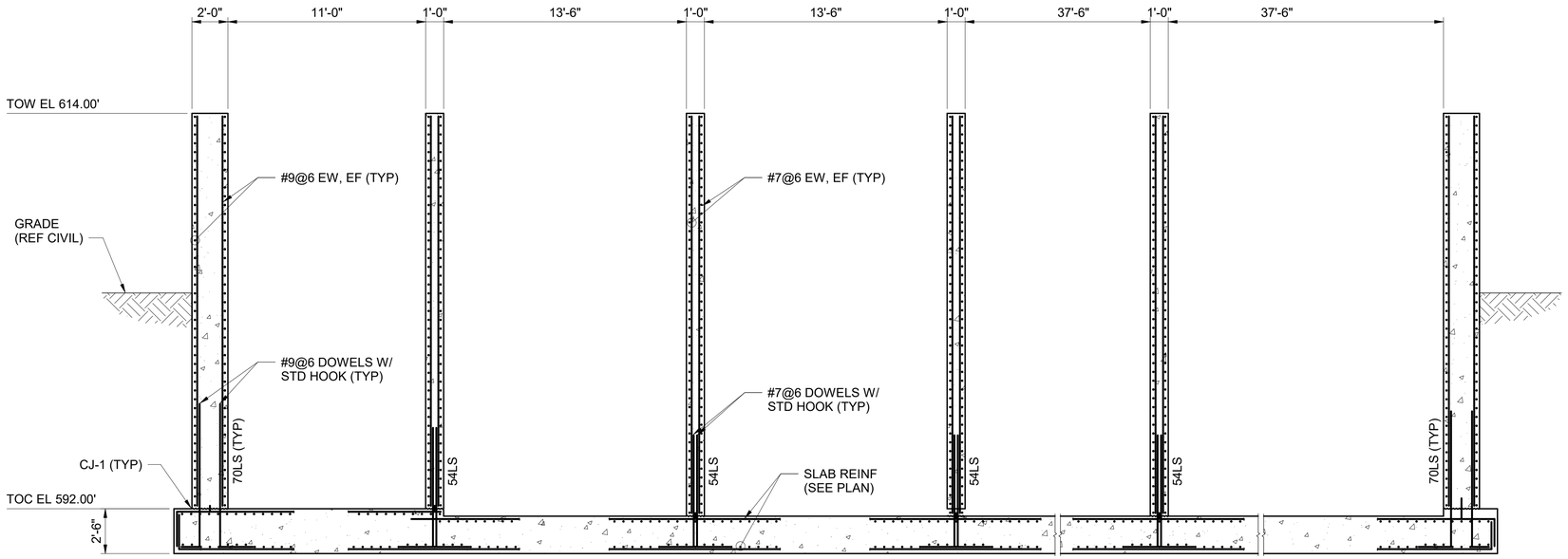
BNR BASINS
TOP PLAN @ EL 614.00'

project	contract
187533	

drawing **420S102** — rev. **0**

sheet of sheets

file 187533_410_S_R24.rvt

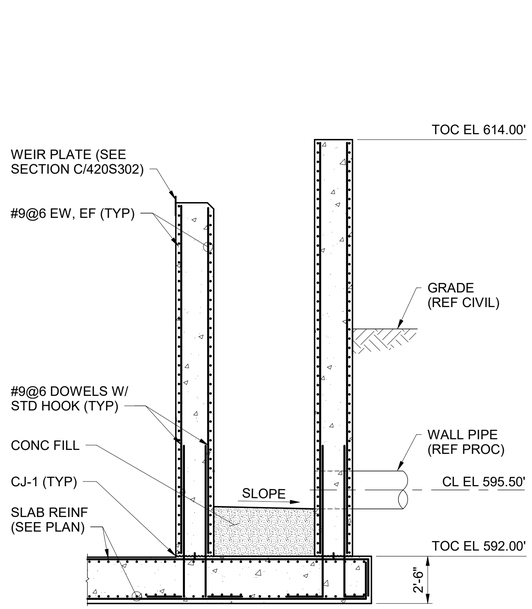


SECTION A

0 2' 4' 8'

SCALE IN FEET

420S101
420S102

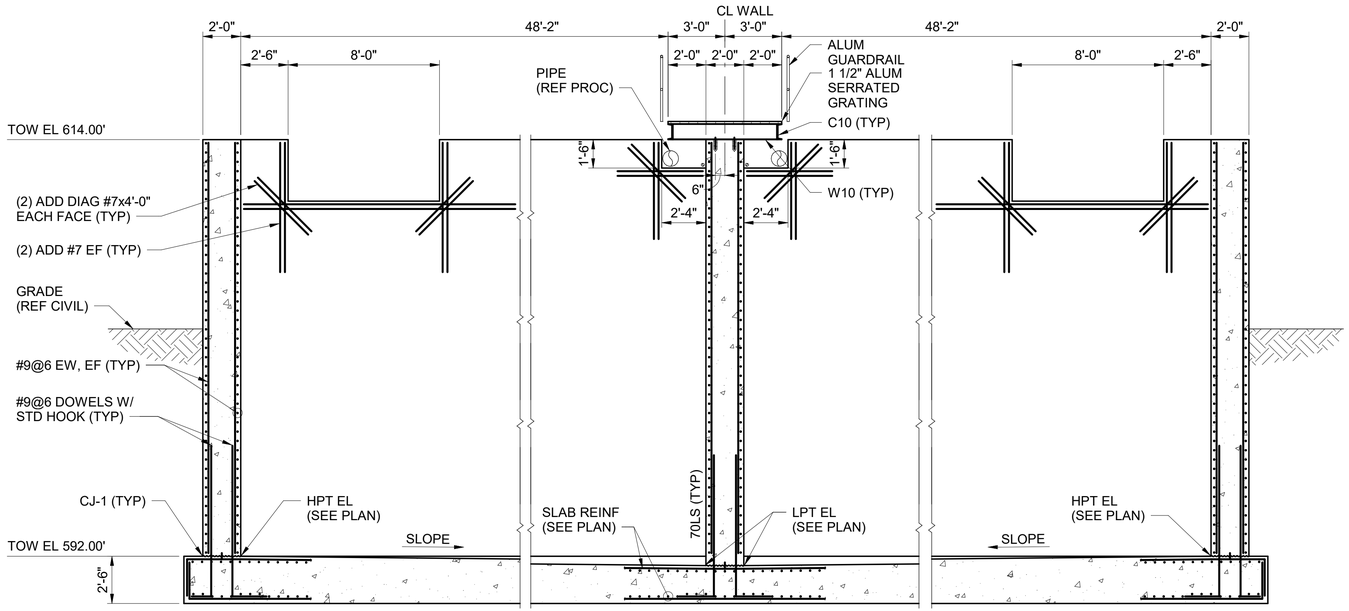


SECTION B

0 2' 4' 8'

SCALE IN FEET

420S101
420S102



SECTION C

0 2' 4' 8'

SCALE IN FEET

420S101
420S102

no.	date	by	ckd	description
0	03/20/26	JT	AMH	GMP 1/2: ISSUED FOR BID

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designed	checked
J. TSOUFLIAS	A. HOLMES

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY

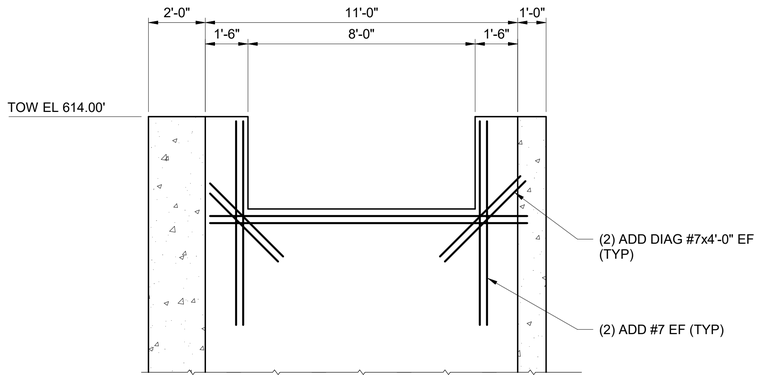
BNR BASINS
SECTIONS SHEET 1

project	contract
187533	

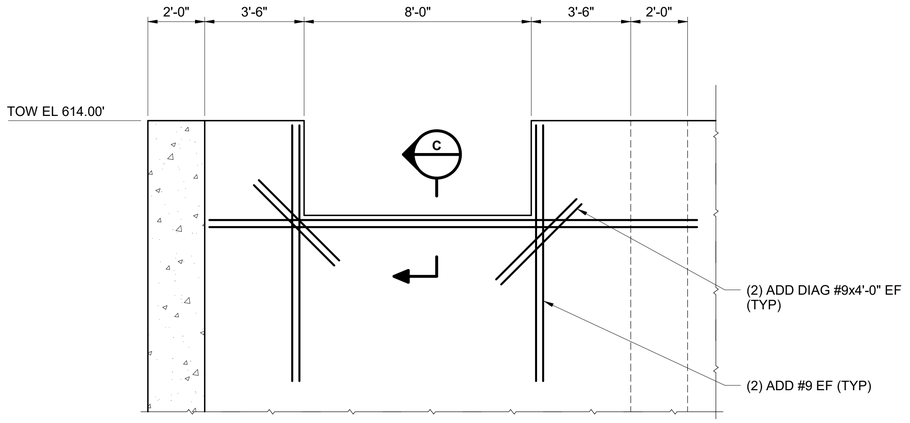
drawing **420S301** — rev. **0**

sheet of sheets

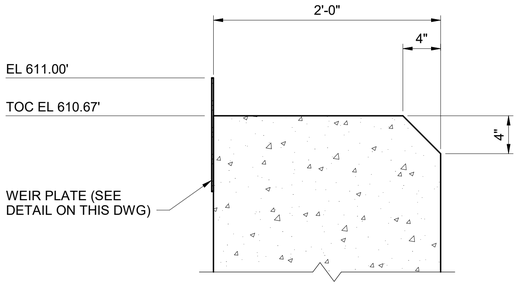
file 187533_410_S_R24.rvt



SECTION A
0 2' 4' 6'
SCALE IN FEET
420S102

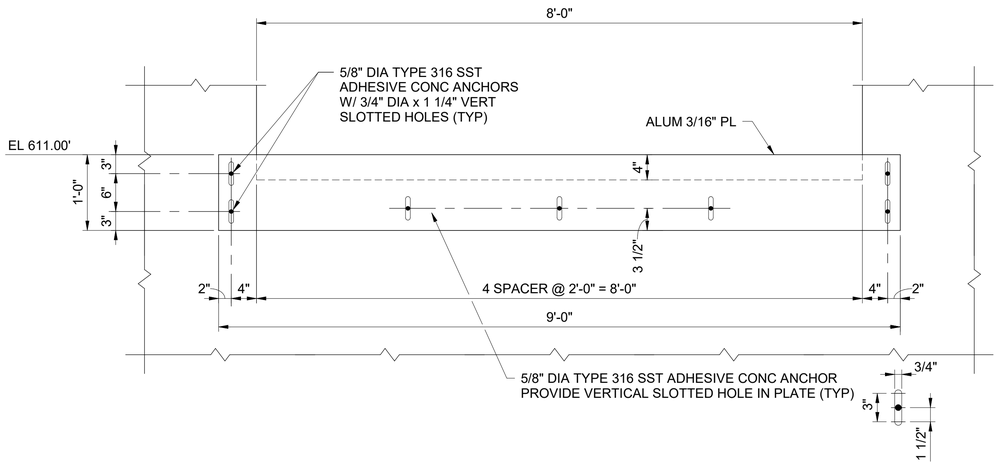


SECTION B
0 2' 4' 6'
SCALE IN FEET
420S102



NOTE:
SEE PLAN FOR LOCATION OF WEIR PLATE SIDE OF WALL.

SECTION C
0 1/2' 1' 1 1/2'
SCALE IN FEET



TYPICAL WEIR PLATE DETAIL
NOT TO SCALE

no.	date	by	ckd	description
0	03/20/26	JT	AMH	GMP 1/2: ISSUED FOR BID

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TEXAS NO: 115232 ON DATE: 3/20/26
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BURNS McDONNELL
6200 BRIDGE POINT PARKWAY,SUITE 400
AUSTIN, TX 78730
Burns & McDonnell Engineering Co, Inc.
FIRM Reg. No. F-845

date	detailed
JANUARY 23, 2025	R. SCOLES
designed	checked
J. TSOUFLIAS	A. HOLMES

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY
BNR BASINS
SECTIONS SHEET 2

project	contract
187533	

drawing **420S302** — rev. **0**

sheet of sheets
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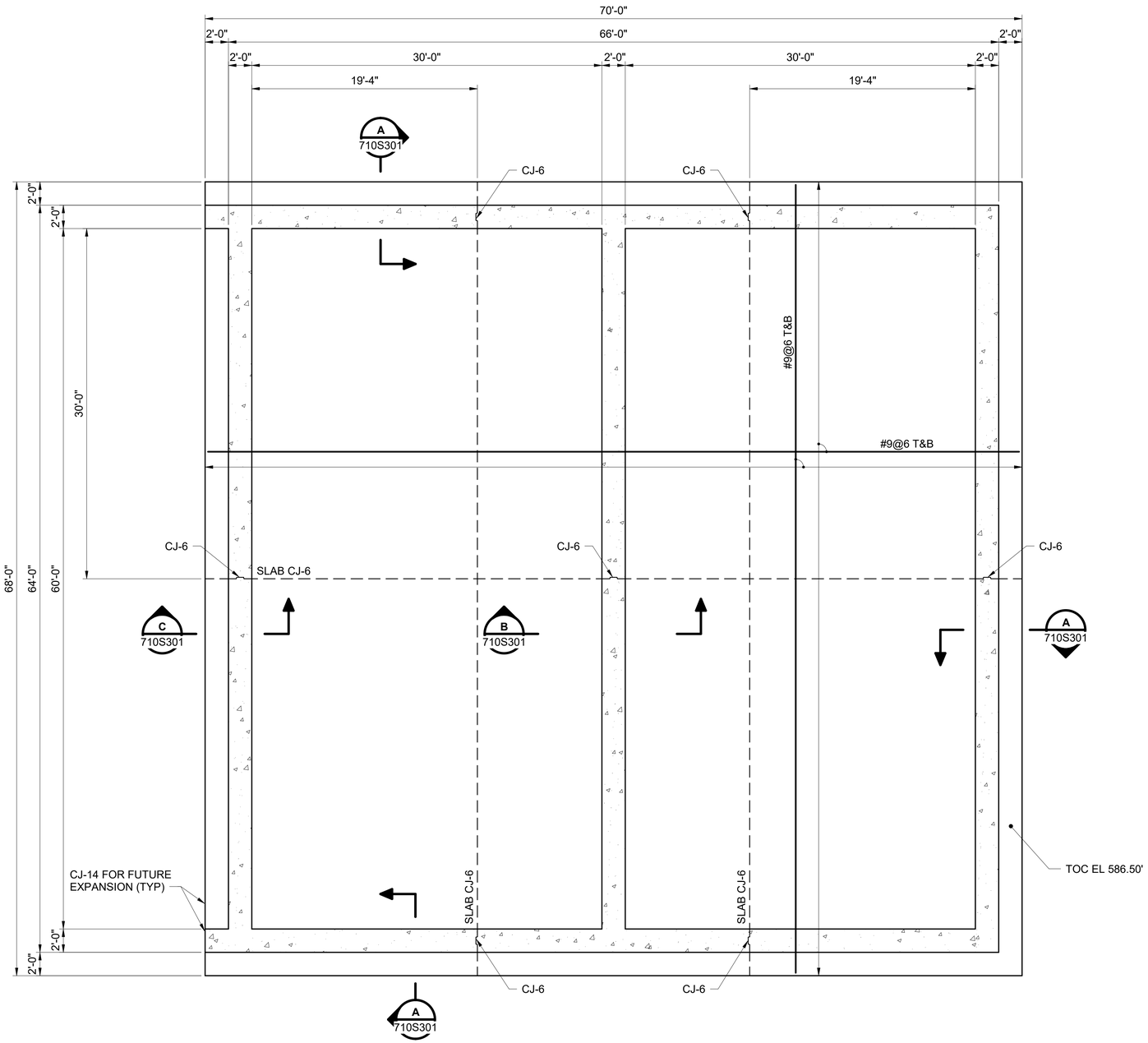

FOUNDATION PLAN

0 4' 8' 12'

SCALE IN FEET

NORTH

DRAWING NOTES:

1. SEE DRAWINGS 002S001 AND 002S002 FOR GENERAL NOTES.
2. SEE DRAWINGS 006S501 TO 006S5XX FOR STANDARD DETAILS.
3. DESIGN CRITERA: SEE DRAWING 002S001 AS MODIFIED BELOW
   A. DEAD LOADS:
      1. GRATING = 11 PSF
      2. HANDRAIL = 15 PLF
4. REFER TO CIVIL, ELECTRICAL, MECHANICAL AND PROCESS DRAWINGS FOR EQUIPMENT, OPENINGS, PENETRATIONS, PIPE SUPPORTS AND EMBEDDED ITEMS NOT SHOWN ON STRUCTURAL DRAWINGS.
5. STRUCTURE SHALL NOT BE BACKFILLED UNTIL CONCRETE HAS ATTAINED ITS REQUIRED 28-DAY DESIGN STRENGTH.
6. REINFORCE AROUND ALL OPENINGS IN CONCRETE CONSTRUCTION IN ACCORDANCE WITH STANDARD DETAIL CO-1/ CO-2 ON DRAWING 006S504 AS APPLICABLE.
7. REINFORCEMENT SHALL BE CONTINUOUS THROUGH CONSTRUCTION JOINTS.

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BURNS McDONNELL

6200 BRIDGE POINT PARKWAY,SUITE 400
AUSTIN, TX 78730
Burns & McDonnell Engineering Co, Inc.
FIRM Reg. No. F-845

date	detailed
OCTOBER 10, 2025	R. SCOLES
designed	checked
J. TSOUFLIAS	A. HOLMES

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY

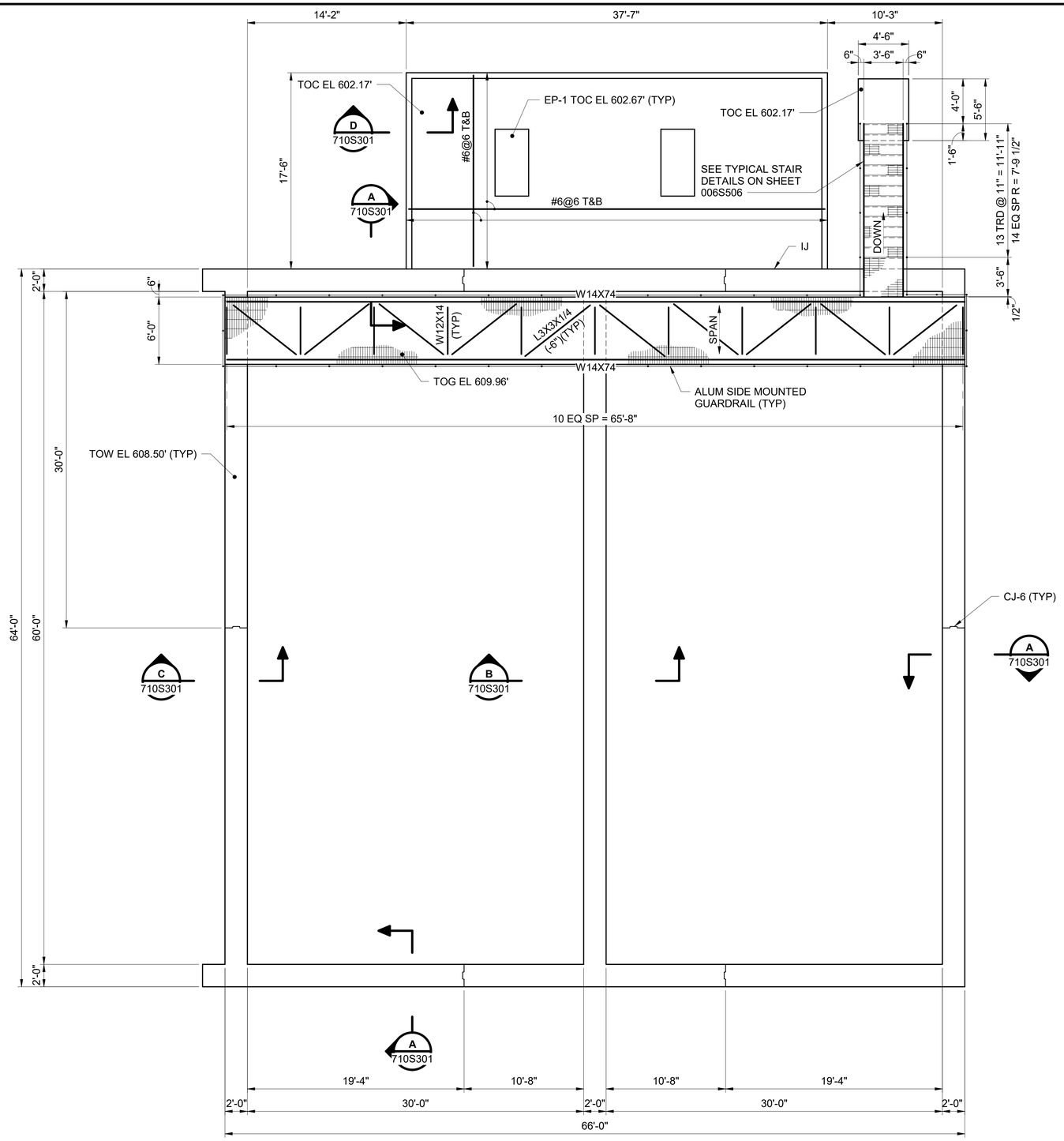
WAS HOLDING TANK
FOUNDATION PLAN

project	contract
187533	

drawing **710S101** – rev. **0**

sheet of sheets

file 187533_710_S_R24.rvt



TOP PLAN @ EL 608.50'

0 4' 8' 12'

SCALE IN FEET

NORTH

DRAWING NOTES:

1. SEE DRAWINGS 002S001 AND 002S002 FOR GENERAL NOTES
2. SEE DRAWINGS 006S501 TO 006S5XX FOR STANDARD DETAILS.
3. SEE DRAWING 710S101 FOR WALKWAY DESIGN CRITERIA.
4. REFER TO CIVIL, ELECTRICAL, MECHANICAL, AND PROCESS DRAWINGS FOR EQUIPEMENT OPENING, PENETRATIONS, PIPE SUPPORTS, AND EMBEDDED ITEMS NOT SHOWN ON STRUCTURAL DRAWINGS.

no.	date	by	ckd	description
A	12/12/25	JT	AMH	ISSUED FOR 30% REVIEW
0	03/20/26	JT	AMH	GMP 1/2: ISSUED FOR BID

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BURNS McDONNELL
6200 BRIDGE POINT PARKWAY,SUITE 400
AUSTIN, TX 78730
Burns & McDonnell Engineering Co, Inc.
FIRM Reg. No. F-845

date	detailed
OCTOBER 10, 2025	R. SCOLES
designed	checked
J. TSOUFLIAS	A. HOLMES

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY

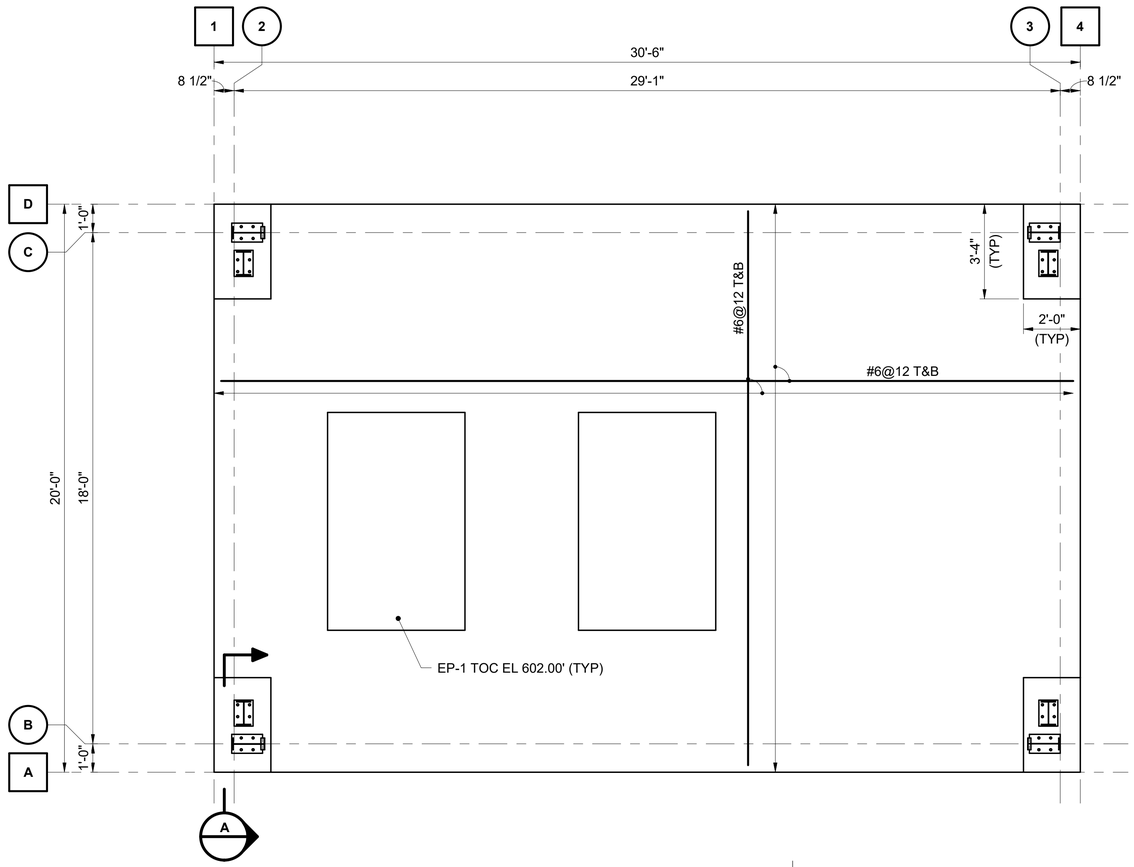
WAS HOLDING TANK
TOP PLAN @ EL 608.50'

project	contract
187533	

drawing **710S102** — rev. **0**

sheet of sheets

file 187533_710_S_R24.rvt

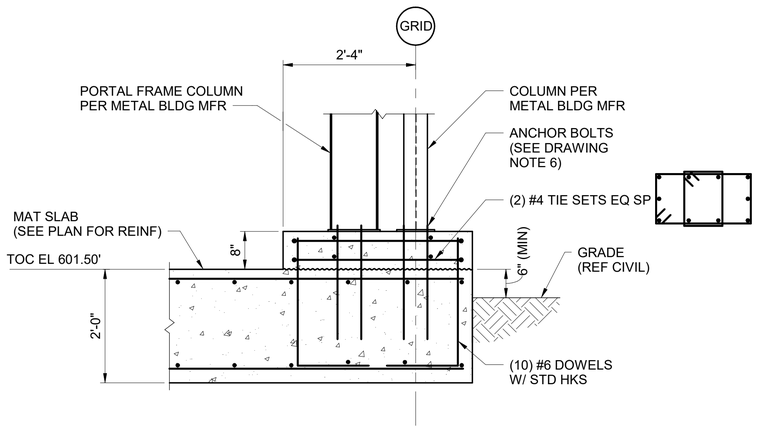


CANOPY FOUNDATION PLAN

0 2' 4' 6'

SCALE IN FEET

NORTH



ELEVATION A

0 1' 2' 3'

SCALE IN FEET

DRAWING NOTES:

1. SEE DRAWINGS 002S001 AND 002S002 FOR GENERAL NOTES.
2. SEE DRAWINGS 006S501 TO 006S5XX FOR STANDARD DETAILS.
3. DESIGN CRITERIA : SEE DRAWING 002S001 AS MODIFIED BELOW
   - A. DEAD LOADS:
     1. COLLATERAL DEAD LOAD = 10 PSF
     2. EQUIPMENT LOADS (BASIS OF DESIGN):
        a. BLOWERS = 7,850 LB.
   - B. SNOW LOADS: SEE DRAWING 002S001
     1. SNOW DESIGN LOADS PER PEMB CANOPY MANUFACTURER.
   - F. SEISMIC LOADS: SEE DRAWING 002S001
     1. SEISMIC DESIGN LOADS PER PEMB CANOPY MANUFACTURER.
4. REFER TO CIVIL, ELECTRICAL, MECHANICAL AND PROCESS DRAWINGS FOR EQUIPMENT, PENETRATIONS, PIPE SUPPORTS AND EMBEDDED ITEMS NOT SHOWN ON STRUCTURAL DRAWINGS.
5. * CONCRETE PEDESTAL PLAN DIMENSIONS AT COLUMNS ARE PRELIMINARY AND SUBJECT TO CHANGE BASED ON FINAL BASE PLATE SIZES PROVIDED BY THE PRE-ENGINEERED METAL BUILDING SUPPLIER.
6. ANCHORS FOR THE METAL BUILDING COLUMNS SHALL BE IN ACCORDANCE WITH THE STANDARD ANCHOR BOLT DETAIL. PRELIMINARY ANCHOR BOLT DIAMETER IS SHOWN WHERE FINAL ANCHOR BOLT DIAMETER SHALL BE SIZED BY THE PEMB MANUFACTURER.
   - A. ALL RIGID FRAME COLUMNS:
     1. 3/4" DIA TYPE II ANCHOR BOLTS
     2. 1/2" THICK PLATE WASHERS REQUIRED. WASHERS TO BE PROVIDED BY METAL BUILDING MANUFACTURER. WASHERS SHALL BE WELDED TO BASE PLATE WITH 3/16" FILLET WELDS ALL AROUND IN ACCORDANCE WITH AWS STANDARDS.
     3. ANCHOR BOLT LENGTH EMBEDMENT SHALL BE MEASURED FROM THE BOTTOM OF THE FLOOR SLAB. SEE TYPICAL SECTIONS.
7. PORTAL FRAMES SHALL BE ACCOMMODATED ALONG FRAME LINES B AND C.

no.	date	by	ckd	description
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BURNS McDONNELL

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date	detailed
OCTOBER 10, 2025	R. SCOLES
designed	checked
J. TSOUFLIAS	A. HOLMES

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY

WAS HOLDING TANK
BLOWER CANOPY PLAN AND SECTION

project	contract
187533	

drawing **710S103** — rev. **0**

sheet of sheets

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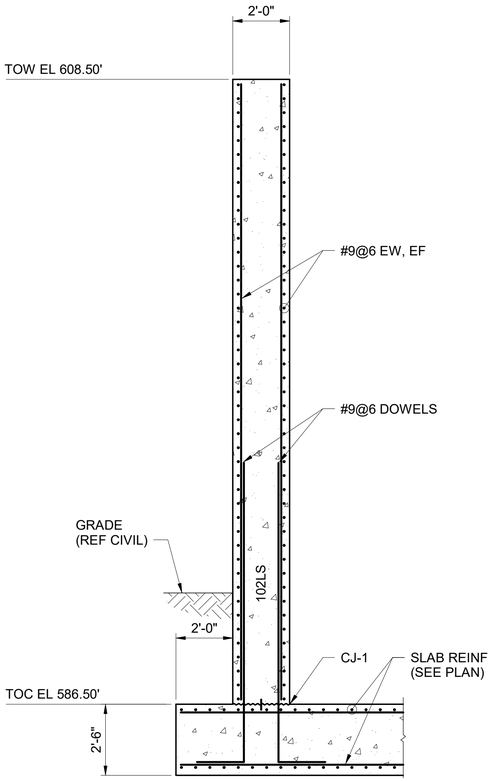

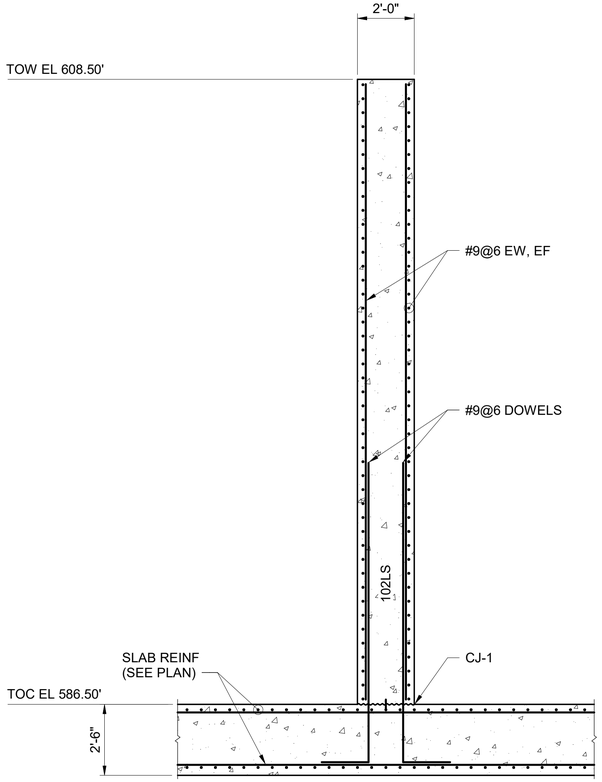

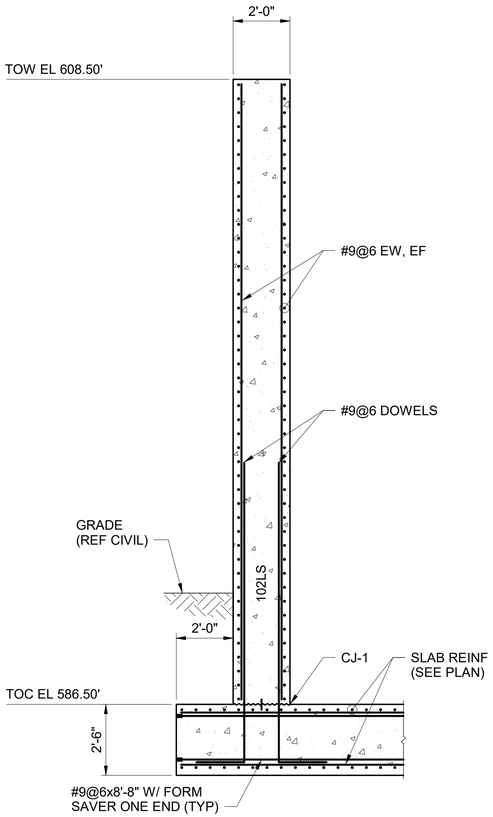

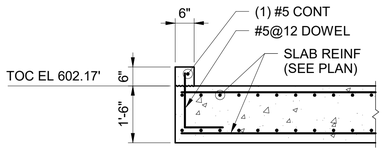

SECTION D
0 1' 2' 4'
SCALE IN FEET
710S102

SECTION A
0 2' 4' 6'
SCALE IN FEET
710S101
710S103

SECTION B
0 2' 4' 6'
SCALE IN FEET
710S101
710S103

SECTION C
0 2' 4' 6'
SCALE IN FEET
710S101
710S103

no.	date	by	ckd	description
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OCTOBER 10, 2025	R. SCOLES
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J. TSOUFLIAS	A. HOLMES

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY
WAS HOLDING TANK
SECTIONS AND DETAILS

project	contract
187533	

drawing **710S301** rev. **0**

sheet of sheets

file 187533_710_S_R24.rvt

ELECTRICAL LEGEND

ONE-LINE AND CONTROL DIAGRAMS

	POWER CIRCUIT AND EQUIPMENT INSTALLED BY THIS CONTRACT
	EXISTING CIRCUIT AND EQUIPMENT
	DEMOLITION HATCHING
	FUTURE POWER CIRCUIT AND EQUIPMENT
	EQUIPMENT ENCLOSURE
	CONTROL OR INTERLOCK CIRCUIT
(X)	"X" INDICATES NUMBER OF DEVICES WHEN MORE THAN ONE
	TERMINAL
	CONNECTION
	CIRCUIT BREAKER
	FUSE
	FUSED DISCONNECT SWITCH
	DISCONNECT SWITCH
	PLUG-IN OR DRAWOUT CONNECTION
	POWER TRANSFORMER (XFMR)
	CONTROL POWER TRANSFORMER
200:5 (2)	CURRENT TRANSFORMER, SINGLE RATIO (SHOWN WITH QUANTITY)
(2)	POTENTIAL TRANSFORMER (SHOWN WITH QUANTITY)
	DELTA WINDING CONNECTION
	GROUNDING Y WINDING CONNECTION
	DUAL THROW TRANSFER SWITCH
52-X	AC CIRCUIT BREAKER
K1	KEY INTERLOCK

	CAPACITOR
	THERMAL OVERLOADS
	SINGLE SPEED NON-REVERSING MANUAL MOTOR STARTER
	SINGLE SPEED NON-REVERSING MAGNETIC MOTOR STARTER
	TWO SPEED NON-REVERSING MAGNETIC MOTOR STARTER
EPM	POWER QUALITY METER/ ELECTRONIC POWER METER
VFD	VARIABLE FREQUENCY DRIVE
SPD	SURGE PROTECTION DEVICE
A	AMMETER
V	VOLTMETER
KWH	UTILITY METER
~	GENERATOR
HP	ELECTRIC MOTOR - APPROX. HORSEPOWER AS INDICATED
	EQUIPMENT AS NOTED ON DIAGRAM
	GROUND CONNECTION
	LIGHTNING ARRESTOR
X	ANSI DEVICE 86 = LOCKOUT RELAY 71 = OIL LEVEL SWITCH 49 = TRANSFORMER THERMAL SWITCH
TU	ELECTRONIC TRIP UNIT A = ARC FLASH REDUCTION MAINTENANCE SYSTEM L = LONG TIME S = SHORT TIME I = INSTANTANEOUS G = GROUND

SCHEMATIC DIAGRAMS

	POWER CIRCUIT AND EQUIPMENT INSTALLED BY THIS CONTRACT
	EXISTING CIRCUIT AND EQUIPMENT
	FUTURE POWER CIRCUIT AND EQUIPMENT
	EQUIPMENT ENCLOSURE
	CONTROL OR INTERLOCK CIRCUIT
	REMOTE WIRING
	COMMUNICATION CABLE (COPPER)
FOC	COMMUNICATION CABLE (FIBER OPTIC CABLE)
	SOFTWARE OR COMMUNICATION LINK
	TERMINAL
+	POSITIVE TERMINAL
−	NEGATIVE TERMINAL
A B	(A) CONDUCTOR CONNECTION (B) NO CONNECTION
A B	(A) CONTACT - NORMALLY OPEN (B) CONTACT - NORMALLY CLOSED
	CIRCUIT BREAKER
	FUSE
	POWER TRANSFORMER (XFMR)
	GROUND CONNECTION
	LIGHTNING ARRESTOR
O.L. (3)	THERMAL OVERLOAD RELAY (SHOWN WITH QUANTITY)
	SOLENOID VALVE COIL
	SWITCH (AS DESIGNATED ON DIAGRAM)
	SELECTOR SWITCH (AS DESIGNATED ON DIAGRAM)

H A	HAND-OFF-AUTO SELECTOR SWITCH
A B	(A) PUSH-BUTTON - NORMALLY OPEN MOMENTARY (B) PUSH-BUTTON - NORMALLY CLOSED MOMENTARY
A B	(A) MAINTAINED PUSH-BUTTON - NORMALLY OPEN (B) MAINTAINED PUSH-BUTTON - NORMALLY CLOSED
A B	(A) PRESSURE OR VACUUM SWITCH-CLOSES WITH INCREASING PRESSURE OR DECREASING VACUUM (B) PRESSURE OR VACUUM SWITCH-OPENS WITH INCREASING PRESSURE OR DECREASING VACUUM
A B	(A) FLOAT OR OTHER LIQUID LEVEL SWITCH - CLOSES WITH RISING LEVEL (B) FLOAT OR OTHER LIQUID LEVEL SWITCH - OPENS WITH RISING LEVEL
A B	(A) LIMIT SWITCH - NORMALLY CLOSED (B) LIMIT SWITCH - NORMALLY CLOSED-HELD OPEN
A B	(A) LIMIT SWITCH - NORMALLY OPEN (B) LIMIT SWITCH - NORMALLY OPEN-HELD CLOSED
A B	(A) TEMPERATURE SWITCH - CLOSES WITH RISING TEMPERATURE (B) TEMPERATURE SWITCH - OPENS WITH RISING TEMPERATURE
R	INDICATING LIGHT - PILOT PUSH-TO-TEST TYPE WITH COLOR INDICATED: R-RED, A-AMBER, G-GREEN, W-WHITE, BL-BLUE, I-IVORY AND Y-YELLOW.
	TIME DELAY RELAY CLOSES ON TIME DELAY AFTER ENERGIZATION
	FLOW SWITCH CLOSES ON LOSS OF FLOW

	NEW CONSTRUCTION
	EXISTING CONSTRUCTION
	CONDUIT EXPOSED
	CONDUIT CONCEALED IN WALL, CEILING OR HIDDEN FROM VIEW
	CONDUIT CONCEALED IN FLOOR OR UNDERGROUND
	DEMOLITION HATCHING
UGE	ELECTRICAL UNDERGROUND AND DUCT BANK
	FLEXIBLE CONDUIT
	HOME RUN TO PANELS, ARROWHEADS INDICATE NUMBER OF CIRCUITS
	CONDUIT TURNING UP
	CONDUIT TURNING DOWN
	CONDUIT TERMINATED AND CAPPED
	CONDUIT WITH BUSHING
	CONDUIT PASSING THRU ELEVATION
	CONDUIT CONTINUATION
	GROUND CABLE
	BOLTED GROUND CONNECTION
	WELDED GROUND CONNECTION
	GROUND ROD
	PANELBOARD
	TRANSFORMER
	DISCONNECT SWITCH
	FUSED DISCONECT SWITCH
	COMBINATION DISCONNECT/ MAGNETIC MOTOR STARTER
P	PULL BOX
M	MOTOR
J	JUNCTION BOX
T	THERMOSTAT
S	SINGLE POLE SWITCH
S_{3X}	THREE-WAY SWITCH "X" CORRESPONDS TO THE ASSOCIATED BANK OF LIGHTS (IF USED)
S_{WP}	WEATHERPROOF SWITCH
	TELEPHONE OUTLET

SCHEMATIC DIAGRAM DEVICE DESIGNATIONS

CONTACT CALLOUT

CR1
- DEVICE IDENTIFICATION
- DEVICE DESIGNATION

DEVICE CALLOUT

20-CR1
- DEVICE IDENTIFICATION
- DEVICE DESIGNATION
- DIAGRAM NUMBER (IF APPLICABLE)

CIRCUIT CALLOUT

B
- CIRCLED NUMBER IS THE SAME NUMBER THAT APPEARS AFTER THE HYPHEN IN THE "CIRCUIT NUMBER"
- WIRE COLOR DESIGNATION: B = BLACK; R = RED; ETC.

A, AUTO	AUTOMATIC
ACK	ACKNOWLEDGE
CL	CLOSE
CR	CONTROL RELAY
FWD	FORWARD
H	HAND
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
O	OFF
OP	OPEN
REV	REVERSE
RMT	REMOTE
I/I	CURRENT TO CURRENT TRANSDUCER
IL	INDICATING LIGHT
IPB	ILLUMINATED PUSHBUTTON
ISP	ILLUMINATED SELECTOR PUSHBUTTON
ISS	ILLUMINATED SELECTOR SWITCH
LLS	LIQUID LEVEL SWITCH
LR	LATCHING RELAY
LS	LIMIT SWITCH
M	MOTOR STARTER COIL
MV/I	MILLIVOLT TO CURRENT TRANSDUCER
MX	MOTOR STARTER AUXILIARY RELAY
OL	OVERLOAD RELAY
PB	PUSHBUTTON
PS	PRESSURE SWITCH
SOL	SOLENOID (OTHER THAN VALVE)
SPB	SELECTOR PUSHBUTTON
SS	SELECTOR SWITCH
SV	SOLENOID VALVE
TDR	TIME DELAY RELAY
TMR	TIMER
TS	TORQUE SWITCH
VS	VACUUM SWITCH
XF	TRANSFORMER

ABBREVIATIONS

A	AMPERES
AF	AMP FRAME
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AIC	AMPS INTERRUPTING CURRENT
ARMS	ARC REDUCTION MAINTENANCE SWITCH
AT	AMP TRIP
ATC	AUTOMATIC TRANSFER CONTROLLER
AWG	AMERICAN WIRE GAUGE
BC	BARE COPPER WIRE
BF	BELOW FLOOR
BG	BELOW GRADE
BKR	BREAKER
BP	BOOSTER PUMP
BSW	BYPASS SWITCH
C	CONDUIT
CAM	CAMERA
CB	CIRCUIT BREAKER
CP	CONTROL PANEL
CPP	COPPER PATCH PANEL
CPT	CONTROL POWER TRANSFORMER
CS	CONTROL STATION
CT	CURRENT TRANSFORMER
DRV	DRIVE / DRIVE MOTOR
DS	DISCONNECT SWITCH
EL	ELEVATION
EPM	ELECTRONIC POWER METER
EX	EXPOSED
EXT	EXTERIOR
FPP	FIBER PATCH PANEL
GDS	GENERATOR DOCKING STATION
GEN	GENERATOR
GND	GROUND
GNL	GO/NO-GO LIGHTS
HH	HANDHOLE
HJB	HEAT TRACE JUNCTION BOX
JB	JUNCTION BOX
JS	POWER CONTACTOR
LC	LIGHTING CONTACTOR
LCP	LOCAL CONTROL PANEL
M	MOTOR
MCC	MOTOR CONTROL CENTER
MCP	MAIN CONTROL PANEL
MPC	MINI-POWER CENTER
MS	MOTOR STARTER
MTS	MANUAL TRANSFER SWITCH
N.C.	NORMALLY CLOSED
N.O.	NORMALLY OPEN
NER	NETWORK EQUIPMENT RACK
NSW	NETWORK SWITCH
OIT	OPERATOR INTERFACE TERMINAL
OWS	OPERATOR WORKSTATION
P	POLE
PB	PULL BOX
PCS	PLANT CONTROL SYSTEM
PHC	PHOTOCELL
PLC	PROGRAMMABLE LOGIC CONTROLLER
PNL	PANELBOARD
PT	POTENTIAL TRANSFORMER
SKD	SKID
SP	SPARE
SPD	SURGE PROTECTIVE DEVICE
SVR	SERVER
SW	SWITCH
T	THERMOSTAT
TOC	TOP OF CONCRETE
TYP	TYPICAL
UPS	UNINTERRUPTIBLE POWER SUPPLY
VFD	VARIABLE FREQUENCY DRIVE
WP	WEATHERPROOF

PLANS

	DATA/TELEPHONE OUTLET
	SURFACE MOUNTED DUPLEX RECEPTACLE OUTLET
	SURFACE MOUNTED DUPLEX RECEPTACLE OUTLET. GROUND FAULT CIRCUIT INTERRUPTER TYPE. "WP" DENOTES WEATHERPROOF WHILE IN USE.
	SURFACE OR PENDANT FIXTURE (TYP FOR ALL LUMINIARE TYPES)
	EMERGENCY BATTERY POWERED LIGHTING UNIT.
	INTEGRAL PHOTOELECTRIC CELL AND RELAY (PHOTOCONTROL)
	SECURITY CAMERA
	GENERIC INSTRUMENT
G	GLASS BREAK DETECTOR
HC	HANDICAPPED PUSH PLATE
I	INTERCOM
IM	INTERCOM MASTER STATION
OS	CEILING MOUNTED OCCUPANCY SENSOR
CD	CONTROL DAMPER

CONDUIT, CABLE AND EQUIPMENT NUMBERING

CONDUIT TYPE: FLEX - FLEXIBLE LIQUID-TIGHT/ALUMINUM
RGS - RIGID GALVANIZED STEEL
RAL - RIGID ALUMINUM
CRGS - PVC COATED RGS
40PVC - PVC SCHEDULE 40
80PVC - PVC SCHEDULE 80

CONDUIT ROUTING: AG - ABOVE GRADE
BG - BELOW GRADE

CABLE NUMBER: M-AAA-BBBXXYZ-NNN
- NNN: SEQUENTIAL NUMBER
- XX: ASSOCIATED EQUIPMENT
- BBB: BUILDING/STRUCTURE DESIGNATOR (WHEN INDICATED)
- Y:
  - P: POWER
  - C: CONTROL
  - I: INSTRUMENTATION
  - F: FIBER
  - T: COMMUNICATIONS (COPPER)
  - R: COAX

CABLE TYPE: REFER TO CABLE SPECIFICATION SECTION.

EQUIPMENT NUMBER: AAA-BBB-CCC-XXYZ
- Z: UNIT NUMBER AND MODIFIER (OPTIONAL)
- XX: EQUIPMENT/INSTRUMENT IDENTIFIER
- BBB: BUILDING OR STRUCTURE ABBREVIATION (OPTIONAL)
- AAA: FACILITY IDENTIFIER

GENERAL NOTES:

1. NOT ALL DEVICES AND DEVICE DESIGNATIONS SHOWN ON THIS LEGEND ARE USED ON THIS PROJECT.
2. COORDINATE ALL CONDUIT TURN UP LOCATIONS AND PENETRATIONS WITH EQUIPMENT PROVIDED.
3. CONDUIT ROUTING DESIGNATED AS "AG/BG" DENOTES ABOVE-GRADE ROUTING TRANSITIONING TO BELOW-GRADE ROUTING AND VICE-VERSA.
4. REFER TO P&ID LEGEND DRAWING DI001 THROUGH DI003 FOR ADDITIONAL INSTRUMENT AND EQUIPMENT ABBREVIATIONS.
5. ALL INSTALLATIONS SHALL COMPLY WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE (NFPA 70) AND ALL APPLICABLE LOCAL CODES AND STANDARDS.

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BURNS McDONNELL
6200 BRIDGE POINT PARKWAY
SUITE 400 AUSTIN, TX 78730
816-333-9400
Burns & McDonnell Engineering Co., Inc.
TBPE FIRM No. 845

date	detailed
SEPTEMBER 15, 2025	A. LILLY
designed	checked
P. SWEARINGEN	D. STRINGER

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY
ELECTRICAL
LEGEND

project	contract
187533	

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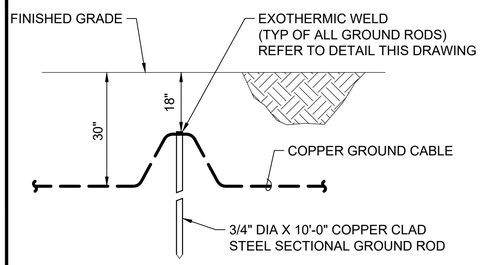
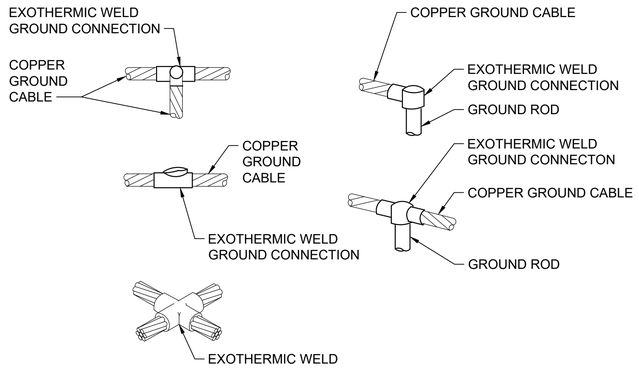


TYPICAL GROUNDING INSTALLATION DETAIL
NOT TO SCALE



TYPICAL EXOTHERMIC WELDS
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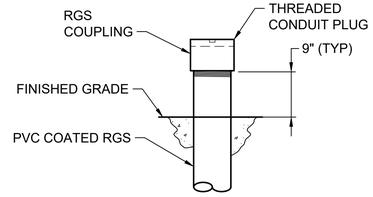
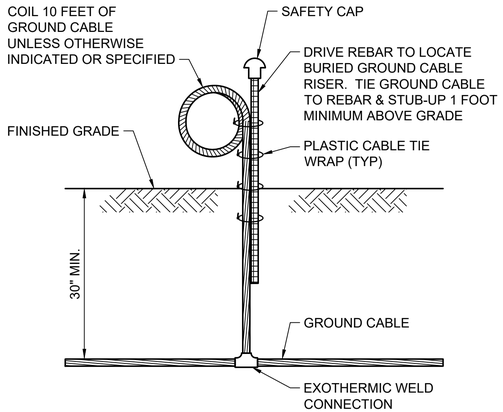


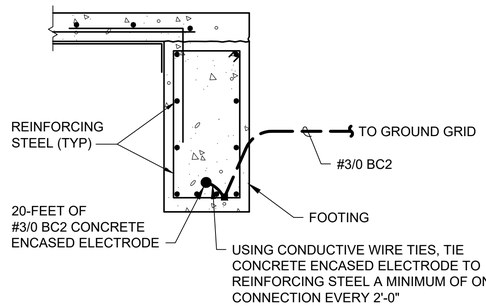
EXTERIOR CONDUIT CAP DETAIL
FOR FUTURE EQUIPMENT
NOT TO SCALE



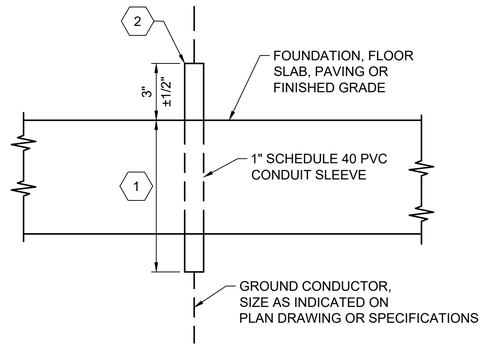
TYPICAL GROUND CABLE RISER DETAIL
NOT TO SCALE

GENERAL NOTE:

1. THIS DETAIL IS NOT INTENDED FOR GROUND CABLE RISERS THROUGH CONCRETE.



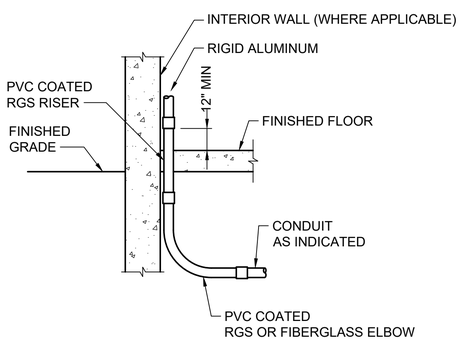
TYPICAL CONCRETE ENCASED ELECTRODE (UFER GROUND) DETAIL
NOT TO SCALE



KEYED NOTES:

1. 8" MINIMUM; FOR CONCRETE SLAB, FOUNDATION OR PAVING, EXTEND SLEEVE 2" BELOW CONCRETE OR PAVING.
2. FILL SLEEVE WITH RTV COMPOUND AND CAULK WITH TWO COMPONENT POLYSULFIDE SYSTEM SEALANT PER SPECIFICATION SECTION 03300 - CONCRETE ACCESSORIES.

GROUND CONDUCTOR PROTECTION
NOT TO SCALE



TYPICAL CONDUIT STUB-UP DETAIL
NOT TO SCALE

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6200 BRIDGE POINT PARKWAY
SUITE 400 AUSTIN, TX 78730
816-333-9400
Burns & McDonnell Engineering Co., Inc.
TBPE FIRM No. 845

date	detailed
FEBRUARY 9, 2026	A. LILLY
designed	checked
S. TAYLOR	D. STRINGER

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY
ELECTRICAL
STANDARD DETAILS
SHEET 1

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187533	

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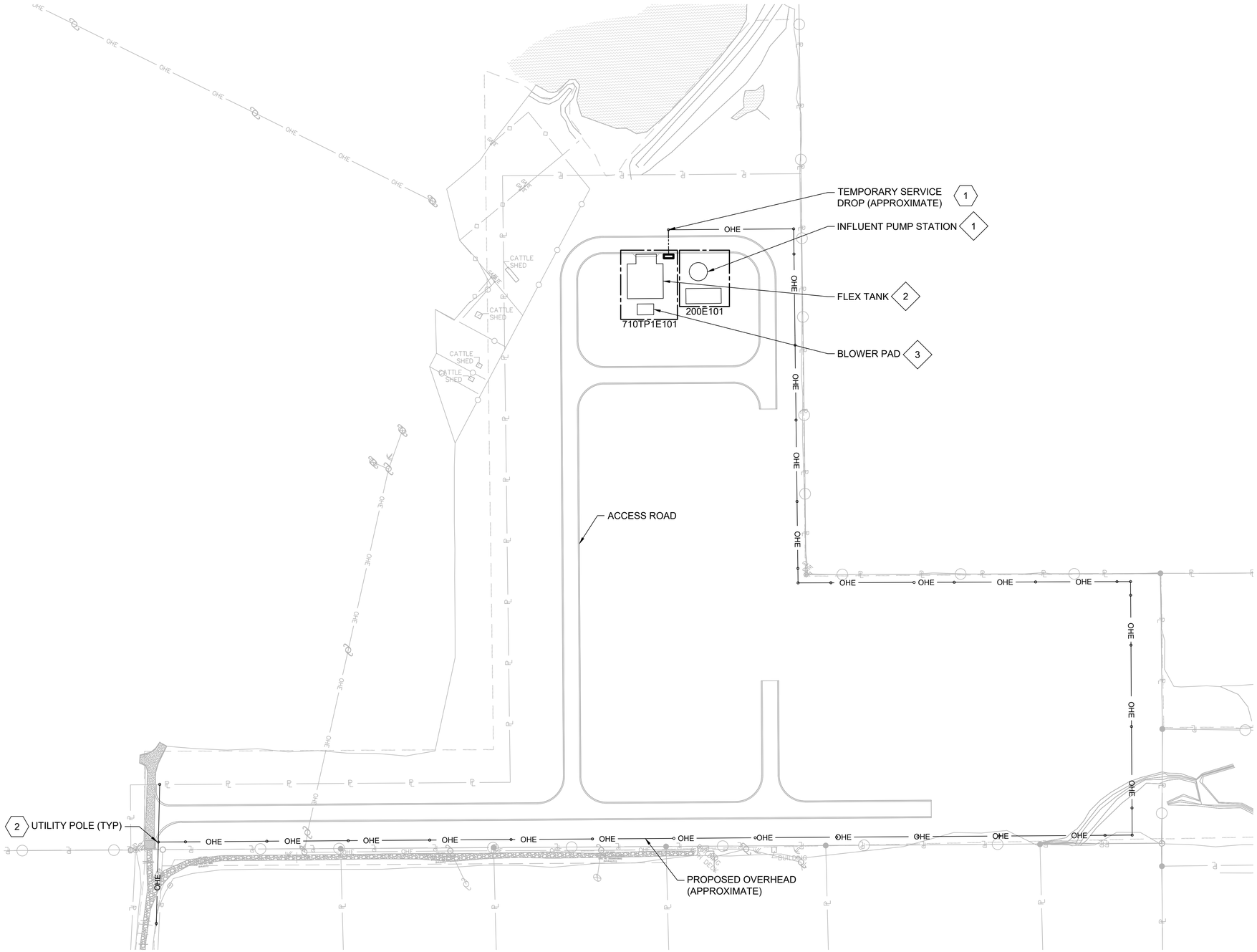

GENERAL NOTES:

1. ROUTING OF OVERHEAD ELECTRICAL LINES AND ASSOCIATED POLES AS SHOWN HEREIN IS APPROXIMATE. COORDINATE WITH UTILITY FOR FINAL ROUTING REQUIREMENTS.
2. AREA CLASSIFICATIONS ARE SHOWN IN HAZARDOUS AREA CLASSIFICATION TABLE THIS SHEET. AREAS NOT IDENTIFIED IN THE TABLE ARE CONSIDERED UNCLASSIFIED UNLESS NOTED OR SPECIFIED OTHERWISE.

KEYED NOTES: (#)

1. COORDINATE WITH UTILITY FOR FINAL LOCATION OF DROP POLE, LOCATION OF METER, AND CONNECTION TO TEMPORARY POLE-MOUNTED TRANSFORMER. PROVIDE CABLE AND UNDERGROUND RACEWAY FROM POLE TO THE TEMPORARY ELECTRICAL EQUIPMENT AS SHOWN ON SHEETS 150TP1E101 AND 710TP1E101.
2. THE INDICATED ELECTRICAL UTILITY POLE AND OVERHEAD ELECTRICAL LINES ARE THE RESPONSIBILITY OF THE ELECTRICAL UTILITY. POLE AND LINES ARE APPROXIMATE. COORDINATE WITH ELECTRICAL UTILITY FOR FINAL LOCATIONS.

HAZARDOUS AREA CLASSIFICATION TABLE

#	PROCESS LOCATION	NFPA 820-2023 REFERENCE	NEC AREA ELECTRICAL CLASSIFICATION	VENTILATION REQUIREMENT	EXTENT OF CLASSIFIED AREA PER NFPA 820-2023
1	INFLUENT PUMP STATION	TABLE 4.2.2 ROW 14a	CLASS 1, DIVISION 1 GROUP D	N/A	ENTIRE ENCLOSED SPACE. 36" RADIUS AROUND VENTS (C1, D1), 60" RADIUS AROUND VENTS (C1, D2). 18" ABOVE HATCH OPENINGS AND 36" AROUND ENTIRE OPENING.
2	FLEX TANK	TABLE 5.2.2 ROW 4c	CLASS 1, DIVISION 2 GROUP D	N/A	ENTIRE INTERIOR OF TANK. ENVELOPE 18" ABOVE TANK WALL, 18" BEYOND WALL, AND 18" ABOVE GRADE EXTENDING 10' HORIZONTALLY.
3	BLOWER PAD	N/A	N/A	N/A	UNCLASSIFIED

SITE PLAN
0 100' 200'
SCALE IN FEET

NORTH

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6200 BRIDGE POINT PARKWAY
SUITE 400 AUSTIN, TX 78730
816-333-9400
Burns & McDonnell Engineering Co., Inc.
TBPE FIRM No. 845

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SEPTEMBER 15, 2025	B.BROCHUE
designed	checked
P. SWEARINGEN	D. STRINGER

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY
ELECTRICAL
SITE PLAN
AND AREA CLASSIFICATION

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187533	

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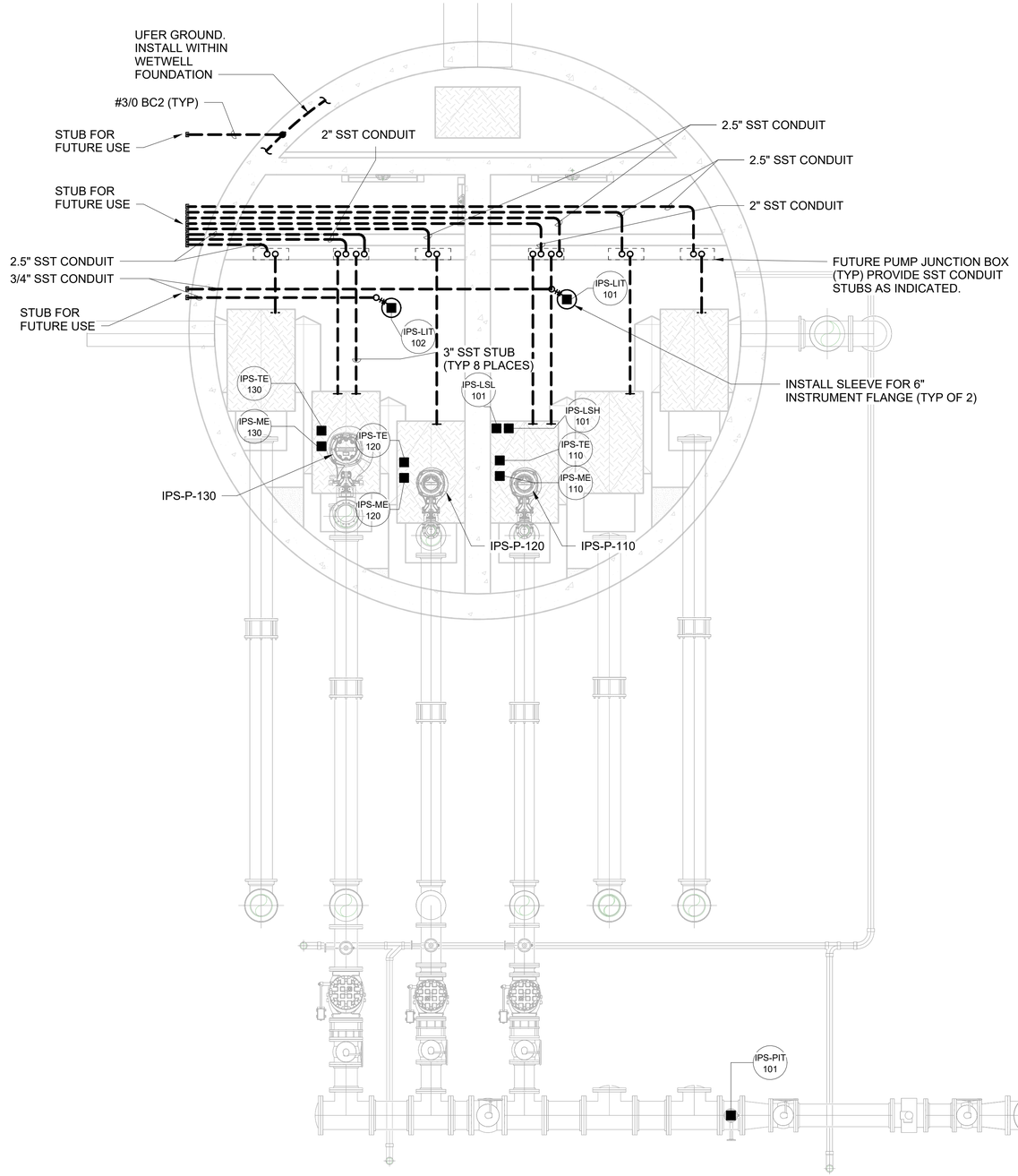

INFLUENT PUMP STATION

0 2' 4' 8'

SCALE IN FEET

NORTH

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SUITE 400 AUSTIN, TX 78730
816-333-9400
Burns & McDonnell Engineering Co, Inc.
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DECEMBER 03, 25	A. LILLY
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J. DOUDICAN	S. TAYLOR

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY

INFLUENT PUMP STATION PLAN

project	contract
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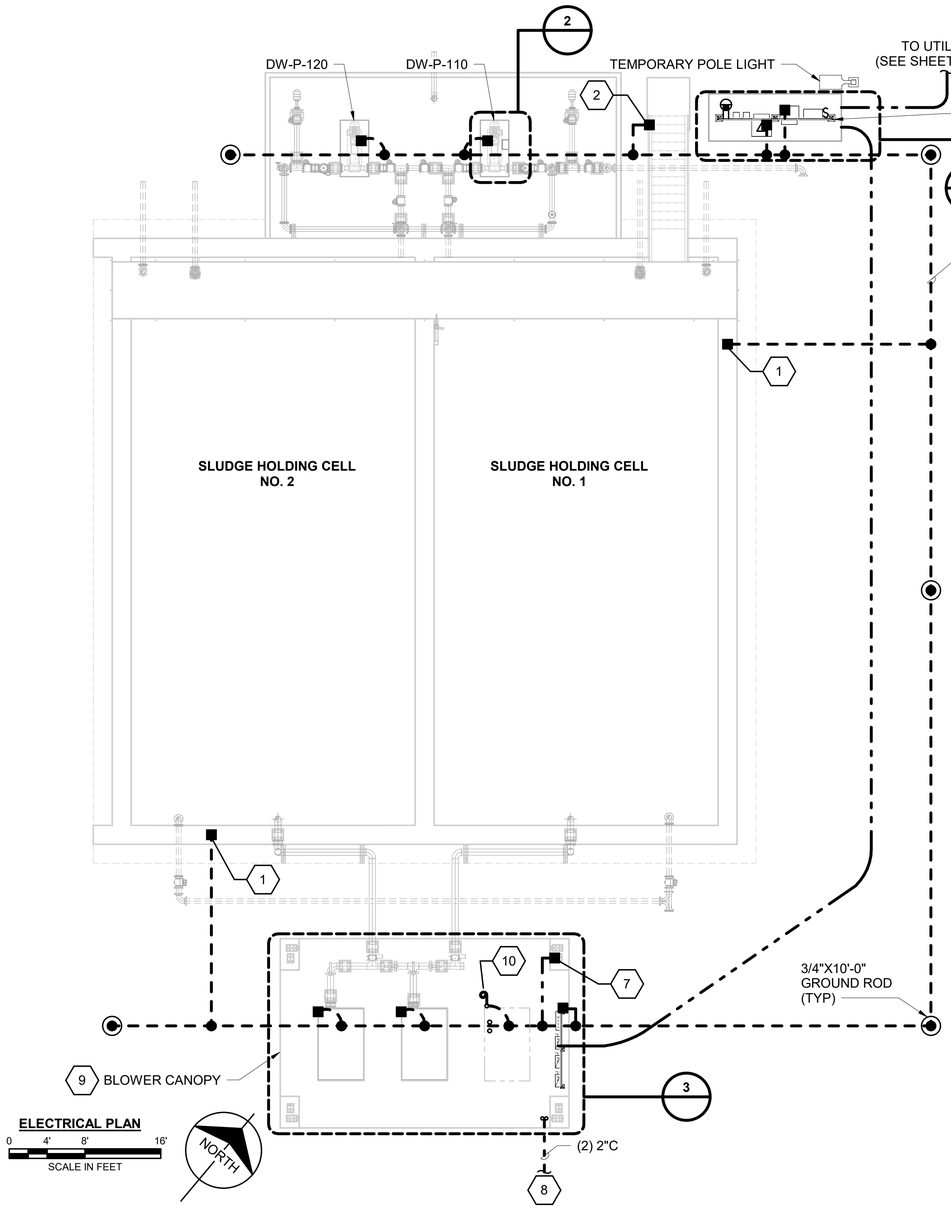

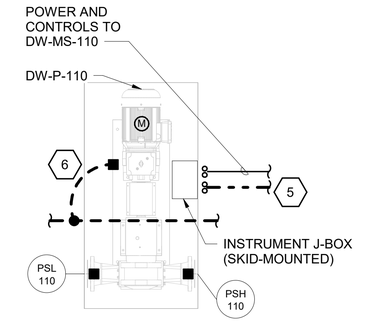

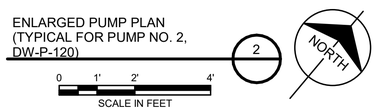

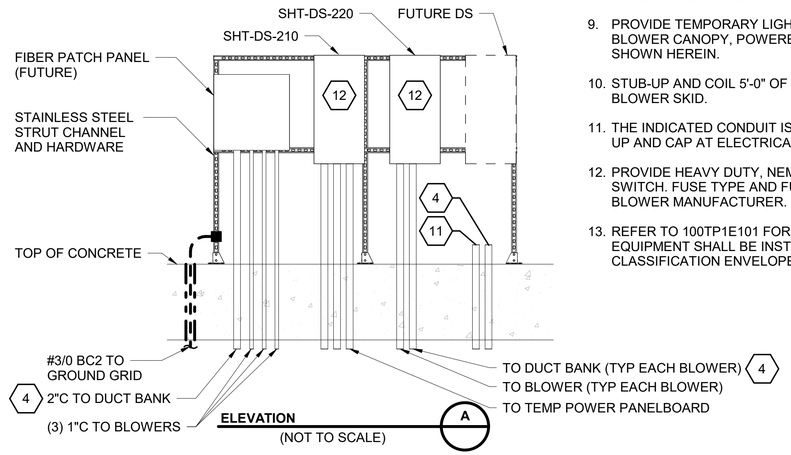

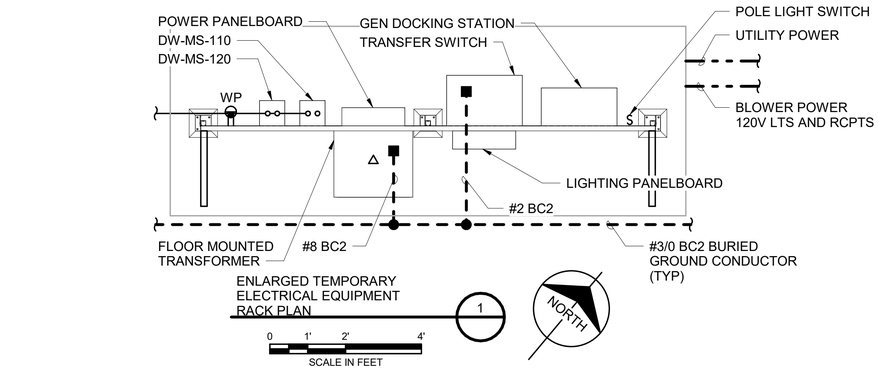

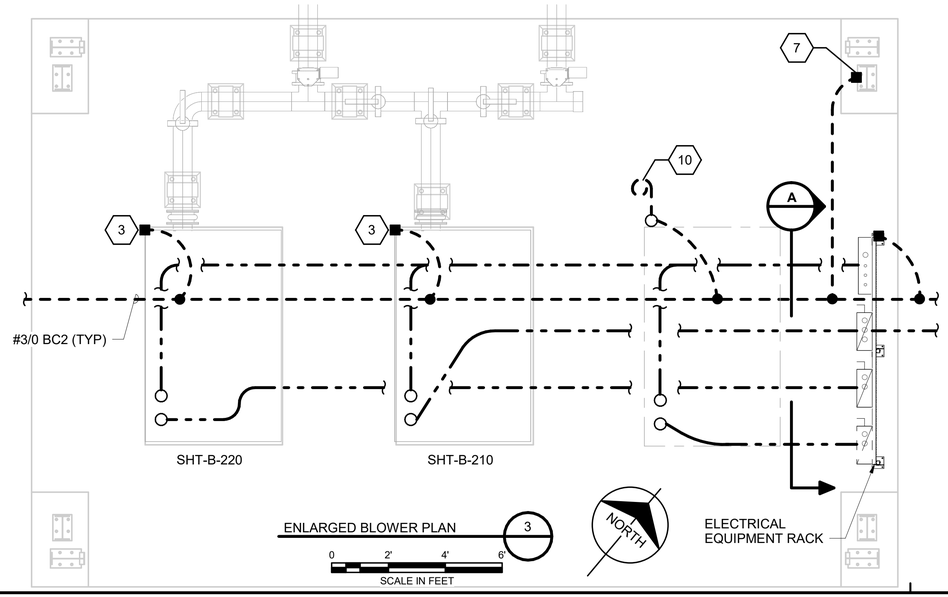

GENERAL NOTES:

1. ALL CONDUIT STUP-UPS FOR FUTURE USE SHALL BE EXTENDED 1'-0" AFF OR AFG AND CAPPED.
2. THE DEVICE AND EQUIPMENT LOCATIONS SHOWN FOR PUMPS AND BLOWERS ARE APPROXIMATE. CONFIRM FINAL DEVICE AND EQUIPMENT LOCATIONS WITH MANUFACTURER SHOP DRAWINGS BEFORE INSTALLATION.

KEYED NOTES: (#)

1. BOND #3/0 BC2 TO CONCRETE ENCASED ELECTRODE.
2. BOND #2 BC2 TO STAIRCASE. STAIRCASE SHALL BE BONDED TO TANK WALKWAY.
3. BOND #2 BC2 TO BLOWER ENCLOSURE.
4. THE INDICATED CONDUIT IS INTENDED FOR BLOWER'S FUTURE POWER CONNECTIONS TO FUTURE DUCT BANK. EXTEND 10'-0" PAST EDGE OF CANOPY PAD AND CAP.
5. THE INDICATED CONDUIT IS INTENDED FOR PUMPS' FUTURE POWER AND CONTROLS CONNECTIONS TO FUTURE DUCT BANK. EXTEND 20'-0" PAST EDGE OF FLEX TANK AND CAP.
6. BOND #2 BC2 TO PUMP SKID.
7. BOND #3/0 BC2 TO CANOPY'S STRUCTURAL STEEL.
8. THE INDICATED CONDUIT IS INTENDED FOR CANOPY'S POWER CONNECTIONS TO FUTURE CANOPY LIGHTING. STUB-UP NEAR CANOPY COLUMN AND CAP. EXTEND UNDERGROUND PORTION 10'-0" PAST EDGE OF CANOPY PAD AND CAP.
9. PROVIDE TEMPORARY LIGHTING AND CONVENIENCE RECEPTACLES AT THE BLOWER CANOPY, POWERED BY THE TEMPORARY LIGHTING PANELBOARD SHOWN HEREIN.
10. STUB-UP AND COIL 5'-0" OF #2 BC2 FOR GROUND BOND TO FUTURE BLOWER SKID.
11. THE INDICATED CONDUIT IS INTENDED FOR FUTURE BLOWER NO. 3. STUB UP AND CAP AT ELECTRICAL RACK AND FUTURE BLOWER LOCATION.
12. PROVIDE HEAVY DUTY, NEMA 4X, 200A, 200KA SCCR FUSED DISCONNECT SWITCH. FUSE TYPE AND FUSE HOLDERS SHALL BE AS REQUIRED BY BLOWER MANUFACTURER.
13. REFER TO 100TP1E101 FOR HAZARDOUS AREA EXTENTS. ALL ELECTRICAL EQUIPMENT SHALL BE INSTALLED OUTSIDE OF THE NOTED CLASSIFICATION ENVELOPES.

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SUITE 400 AUSTIN, TX 78730
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date	detailed
DECEMBER 03, 25	A. LILLY
designed	checked
J. DOUDICAN	D. STRINGER

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY
FLEX TANK
ELECTRICAL PLAN

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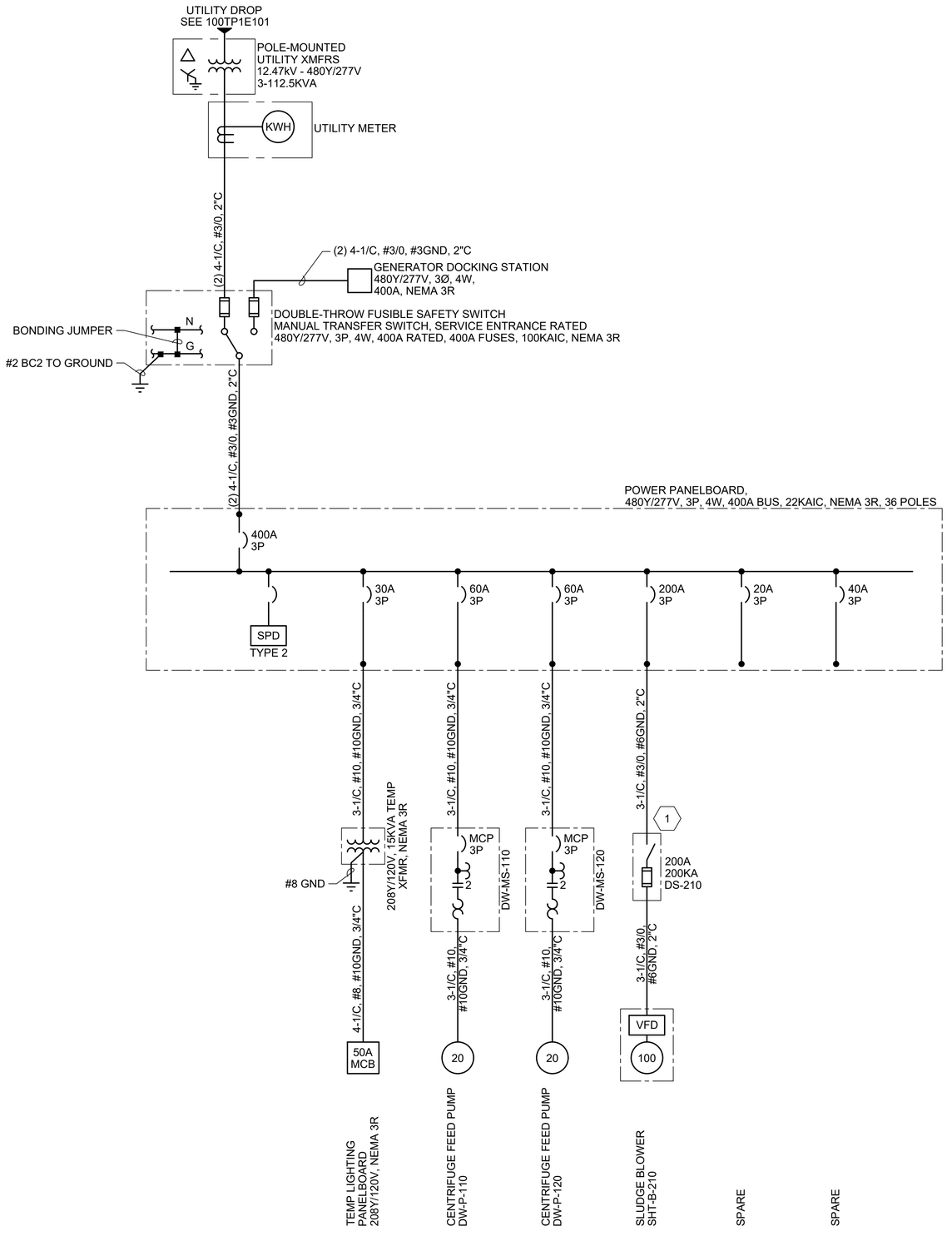

ELECTRICAL ONE-LINE DIAGRAM

GENERAL NOTES:

1. ALL UNDERGROUND RACEWAY SHALL BE SCHEDULE 40 PVC UNLESS OTHERWISE NOTED. PERMANENT AND FUTURE UNDERGROUND RACEWAY SHALL BE ENCASED IN CLSM (UTILITY FILL).
2. TEMPORARY ABOVE-GROUND RACEWAY SHALL BE SCHEDULE 40 PVC.
3. PERMANENT AND FUTURE ABOVE-GROUND RACEWAY SHALL BE RIGID ALUMINUM.
4. CABLES FOR TEMPORARY EQUIPMENT SHALL BE SINGLE CONDUCTOR THHN/THWN.
5. CABLES FOR PERMANENT EQUIPMENT SHALL BE SINGLE CONDUCTOR XHHW-2.

KEYED NOTES: (#)

1. PROVIDE HEAVY DUTY, NEMA 4X FUSED DISCONNECT SWITCH AS INDICATED. FUSE TYPE AND FUSE HOLDERS SHALL BE AS REQUIRED BY BLOWER MANUFACTURER.

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THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY

ELECTRICAL
FLEX TANK
ONE-LINE DIAGRAM

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PIPING

- GATE VALVE
- GLOBE VALVE
- BUTTERFLY VALVE
- CHECK VALVE
- STOP CHECK VALVE
- AUTOMATIC RECIRCULATION CHECK VALVE
- PLUG VALVE
- 3-WAY PLUG VALVE (2-PORT)
- 3-WAY PLUG VALVE (3-PORT)
- 4-WAY PLUG VALVE (4-PORT)
- 3-WAY VALVE
- ANGLE VALVE
- RELIEF OR SAFETY VALVE
- HOSE GATE DRAIN VALVE
- PINCH VALVE
- NEEDLE VALVE
- DIAPHRAGM VALVE
- BALL VALVE
- (P) SELF-CONTAINED PRESSURE REDUCING (REGULATING VALVE)
- (SR) SURGE RELIEF VALVE
- KNIFE GATE VALVE
- CORPORATION STOP
- (A) AIR RELEASE VALVE
- (AV) VACUUM VALVE
- (AV) AIR AND VACUUM VALVE
- LOCKED OPEN
- LOCKED CLOSED

- BP BACKFLOW PREVENTER
- VB VACUUM BREAKER
- MS MOISTURE SEPARATOR
- M IN-LINE FLOW METER
- SIGHT FLOW INDICATOR
- FLEXIBLE HOSE
- EXPANSION ELEMENT (JOINT)
- FLEXIBLE BALL JOINT
- BASKET TYPE STRAINER
- TEE TYPE STRAINER
- Y-TYPE STRAINER
- CONICAL STRAINER
- DUPLEX STRAINER
- STEAM TRAP ASSEMBLY
- SLEEVE COUPLING (SC) HARNESSED SLEEVE COUPLING (HSC) INSULATED SLEEVE COUPLING (ISC)
- FLANGED COUPLING ADAPTER (FCA)
- DRAINER ASSEMBLY
- SAMPLE COOLER
- INSULATING FLANGE (IF)
- RESTRICTING ORIFICE
- STRAIGHTENING VANE
- RUPTURE DISK
- PIPE GUIDE
- PIPE WITH HEATING CABLE
- DRIP POCKET ASSEMBLY
- UNION
- PIPE ANCHOR
- REDUCER
- DISCHARGE ELBOW ASSEMBLY
- REMOVABLE PLUG
- REMOVABLE CAP
- WELDED CAP
- BF BLIND FLANGE
- CO CLEANOUT
- YH YARD HYDRANT
- AC AIR COCK
- HB HOSE BIBB
- WH WALL HYDRANT
- QUICK DISCONNECT COUPLING
- EXHAUST TO ATMOSPHERE (INSIDE)
- EXHAUST TO ATMOSPHERE (OUTSIDE)

VALVE OPERATORS

- (C) CYLINDER
- (D) DIAPHRAGM
- (M) MOTOR
- (S) SOLENOID
- (D) DIAPHRAGM WITH HANDWHEEL
- CHAINWHEEL
- (F) FLOAT

ABBREVIATIONS

ARV	AIR RELEASE VALVE
ATM	ATMOSPHERE
AVRV	AIR VACUUM RELEASE VALVE
BIS	SODIUM BISULFITE
BxS	BELL AND SPIGOT
CL	CENTERLINE
CV	CHECK VALVE
DIA	DIAMETER
DIP	DUCTILE IRON PIPE
DJ	DISMANTLING JOINT
DN	DOWN
EL	ELEVATION
EX	EXISTING
FCA	FLANGED COUPLING ADAPTOR
FM	MAGNETIC IN-LINE FLOW METER
HP	HORSEPOWER
HYPO	SODIUM HYPOCHLORITE
INV	INVERT
MBR	MEMBRANE BIOREACTOR
MBR ES	MEMBRANE BIOREACTOR EQUIPMENT SUPPLIER
MFR	MANUFACTURER
MGD	MILLION GALLONS PER DAY
MJ	MECHANICAL JOINT
MLSS	MIXED LIQUOR SUSPENDED SOLIDS
MV	MIXING VALVE
NPW	NON-POTABLE WATER
OH	OVERHEAD
PE	PLAIN END
PS	PIPE SUPPORT
PVC	POLYVINYL CHLORIDE
RAS	RETURN ACTIVATED SLUDGE
RAS PS	RETURN ACTIVATED SLUDGE PUMP STATION
SCH	SCHEDULE
SST	STAINLESS STEEL
TOC	TOP OF CONCRETE
TS	TOTAL SOLIDS
TYP	TYPICAL
WAS	WASTE ACTIVATED SLUDGE
WP	WALL PIPE
WSE	WATER SURFACE ELEVATION

LINETYPES

- EXISTING
- NEW CONSTRUCTION
- FUTURE CONSTRUCTION

NOTE:

THIS LEGEND IS TAKEN FROM A STANDARD LEGEND AND NOT ALL ITEMS OR EQUIPMENT AS DESIGNATED HEREON ARE USED ON THIS PROJECT.

GENERAL NOTES

1. SUBCONTRACTOR SHALL COORDINATE MATING FLANGES BETWEEN ADJACENT PIPES, FITTINGS, VALVES, EQUIPMENT, ETC TO CONFIRM ALL DRILLING PATTERNS AND FLANGE TYPES MATCH.
2. SUBCONTRACTOR MAY PROVIDE ADDITIONAL RESTRAINED TYPE COUPLINGS AND/OR DISMANTLING JOINTS AS ALLOWED IN SPECIFICATIONS TO EASE INSTALLATION.
3. PROVIDE ONE FLANGED PIPE SPOOL FOR EACH SIZE OF FLOW METER (MAG METER) PROVIDED EQUAL IN LAY LENGTH TO THE FLOW METER. PIPE SPOOL TO BE PROVIDED TO OWNER WITH SPARE PARTS.
4. FURNISH AND INSTALL 1/2-INCH NIBCO TYPE T585-70 BALL VALVE OR APPROVED EQUAL AT ALL DRAIN LOCATIONS AND INSTRUMENT SAMPLE CONNECTIONS UNLESS OTHERWISE SPECIFIED OR INDICATED. PIPE SHALL HAVE 1/2-INCH FEMALE THREADED NPT OUTLET AND SUBCONTRACTOR SHALL COORDINATE VALVE CONNECTION TYPE TO MATCH OUTLET.
5. CONCRETE ENCASE BURIED PIPE UNDER STRUCTURES, EXTENDING 4 FT BEYOND THE EDGE OF BUILDING FOOTINGS. SEE STRUCTURAL AND PROCESS DRAWINGS FOR LOCATIONS AND DETAILS.
6. FOR CLARITY, ALL TAPS, DRAIN VALVES, ARVS, SUPPORTS, FITTINGS, ACCESSORIES, ETC. MAY NOT BE INDICATED. SEE SPECIFICATIONS AND DRAWINGS FOR ADDITIONAL DETAILS, NOTES AND REQUIREMENTS. SUBCONTRACTOR SHALL FURNISH AND INSTALL ALL FITTINGS, NIPPLES, ACCESSORIES, ETC. AS REQUIRED FOR CONNECTION OF ACCESSORIES, ARVS, VALVES, ETC. TO PIPING. ALL TAPS REQUIRED FOR AIR RELEASE VALVES, SAMPLE TAPS, CORP STOPS, ETC., SHALL BE PROVIDED WITH THE PIPING AS SPECIFIED.
7. REFERENCE SPECIFICATIONS FOR EQUIPMENT, MATERIALS, PIPING, VALVES, ACTUATORS, ETC. VERIFY ALL PIPE CONNECTIONS, CENTERLINES, LOCATIONS, DIMENSIONS, END TYPES AND MATING FLANGES TO CONFIRM ALL PIPE CONNECTIONS, DRILLING PATTERNS, AND FLANGE TYPES MATCH.
8. ALL CONNECTIONS BETWEEN DISSIMILAR METALS SHALL INCLUDE FLANGE INSULATING KITS, DIELECTRIC UNIONS OR APPROVED-EQUAL.
9. PIPING FOR ARV, PUMP SEAL WATER, DRAIN CONNECTIONS, AND VENT PORTS TO DRAIN OR TRENCH SHALL BE SCH 80 PVC UNLESS OTHERWISE SPECIFIED. PROVIDE AIR-GAP OF TWO-TIMES PIPE DIAMETER (⌀) OR 6 IN, WHICHEVER IS GREATER.
10. PIPE ROUTING SHOWN FOR PIPING LESS THAN 4-INCHES IN DIAMETER IS APPROXIMATE. ACTUAL ROUTING, ELEVATIONS AND PIPE SUPPORTS TO BE ROUTED IN THE FIELD TO PROVIDE THE SHORTEST RUNS WHILE COORDINATING WITH EXISTING FEATURES, AVOIDING TRIP HAZARDS, AND KEEPING PIPE ACCESSIBLE.
11. PROVIDE PIPE SUPPORTS AS INDICATED AND REQUIRED ACCORDING TO MSS-SP-58 AND PIPE MANUFACTURER REQUIREMENTS.
12. PIPE SUPPORT LOCATIONS SHOWN ( ) SHALL BE PROVIDED. ADDITIONAL SUPPORTS SHALL BE PROVIDED AS REQUIRED BY MSS-SP-58 AND PIPE MANUFACTURER. AT A MINIMUM SUPPORTS ARE REQUIRED AT INTERVALS PER TABLES 1 AND 2 AND ARE NOT SHOWN FOR CLARITY.

DIP/STEEL

NOMINAL PIPE DIAMETER (INCHES)	MINIMUM PIPE SUPPORT SPACING (FT)
6	15
8	15
10	20
12	20
16	25
20	30
24	30

PVC

NOMINAL PIPE DIAMETER (INCHES)	MINIMUM PIPE SUPPORT SPACING (FT)
1" AND SMALLER	4
2 AND 3	6
4	8
6	8
8	10
12	12
16	12

13. EXPOSED INTERIOR AND EXTERIOR PIPING SHALL BE ROUTED AT RIGHT ANGLES OR PARALLEL TO BUILDING WALLS. GRAVITY DRAINS SHALL SLOPE CONTINUOUSLY UNLESS OTHERWISE SHOWN.
14. REFER TO CIVIL DRAWINGS FOR ADDITIONAL YARD PIPING REQUIREMENTS.
15. PIPE COATING SHALL BE PER SECTION 09 09 00.

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6200 BRIDGE POINT PARKWAY
SUITE 400 AUSTIN, TX 78730
816-333-9400
Burns & McDonnell Engineering Co, Inc.
TBPE FIRM No. 845

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SEPTEMBER 11, 2025	R. SCOLES
designed	checked
A. HUMMEL	A. BOGUSCH

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY

PROCESS LEGEND, ABBREVIATIONS, AND GENERAL NOTES

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TP-P-110/120
TEMPORARY PUMPS
300 GPM

SHT-B-210/220
SLUDGE BLOWERS
75 HP EACH

SHT-TNK-110
WAS HOLDING TANK
~540,000 GAL

DW-P-110/120
CENTRIFUGE FEED
PUMPS
60-300 GPM

GENERAL NOTES:

1. TEMPORARY PUMPING SYSTEM

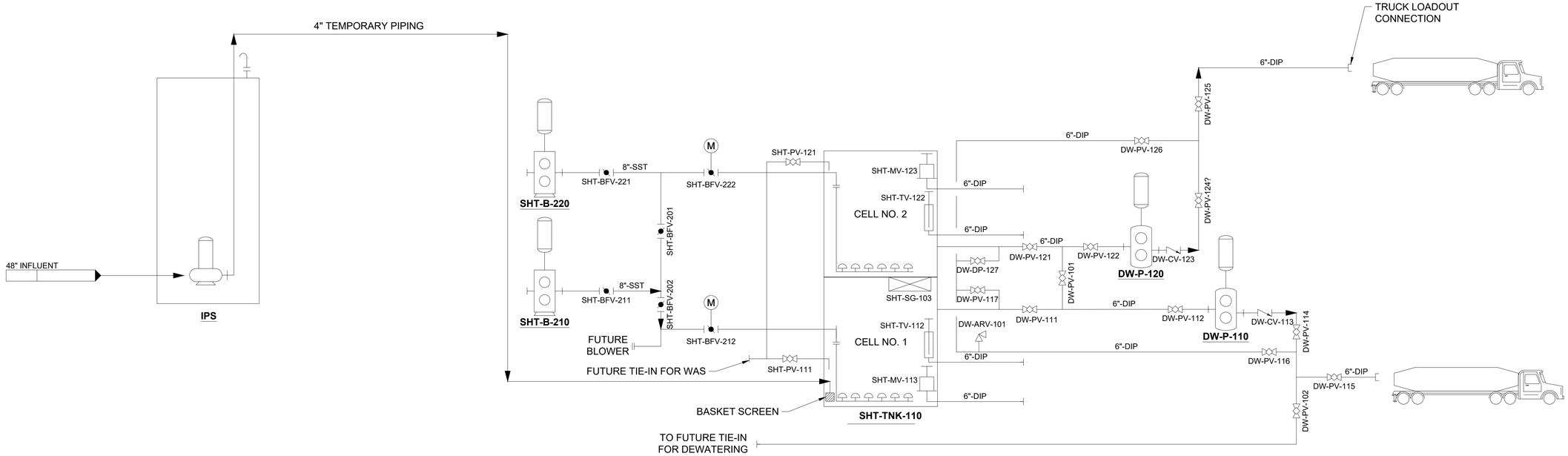
   A. PUMP INSTALLATION/PROCUREMENT TO BE COORDINATED WITH SUBCONTRACTOR VIA RENTAL OR DIRECT PURCHASE. SYSTEM SHALL INCLUDE PUMP AND CONTROL PANEL WITH LEVEL CONTROLS. DISCHARGE CHECK AND PLUG VALVE TO BE BY CONTRACTOR.

   B. AT MINIMUM, SYSTEM SHALL INCLUDE ONE INSTALLED SUBMERSIBLE PUMP WITH A SHELF SPARE. TEMPORARY POWER IS AVAILABLE.

   C. PUMP SHALL BE SIZED FOR A MINIMUM OF 300 GPM @ 40 FT TDH. ALTERNATIVELY, A SMALLER PUMP CAN BE USED INITIALLY UPON APPROVAL OF ENGINEER.

   D. DISCHARGE TO FLEX TANK SHALL BE PROVIDED FROM 4" FLEXIBLE HOSE OR HDPE, OR A COMBINATION THEREOF. ANY HOSE SHALL BE INSTALLED AND SUPPORTED TO PREVENT KINKING IN THE LINE. ALTERNATIVELY, THE NEW PUMP RISE PIPING IN THE IPS CAN BE CONSIDERED FOR USE DURING TEMPORARY PUMPING SHOULD BASE ELBOW ADAPTOR OR CONNECTION BE AVAILABLE FOR THE SELECTED SUBMERSIBLE UNITS.

   E. PUMP OPERATION SHALL BE FROM FLOATS OR LEVEL CONTROLLER FROM VENDOR SUPPLIED PANEL. SYSTEM SHALL BE CAPABLE OF DIALING OUT VIA CELLULAR CONNECTION IN THE EVENT OF A PUMP OR CONTROLS ALARM.



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6200 BRIDGE POINT PARKWAY
SUITE 400 AUSTIN, TX 78730
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Burns & McDonnell Engineering Co., Inc.
TBPE FIRM No. 845

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FEBRUARY 13, 2026	C. GLEASON
designed	checked
A. ACOSTA	P. WARD

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY
PROCESS FLOW DIAGRAM
PUMP AND HAUL

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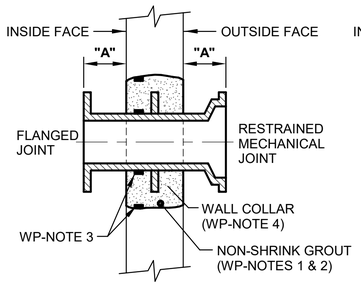
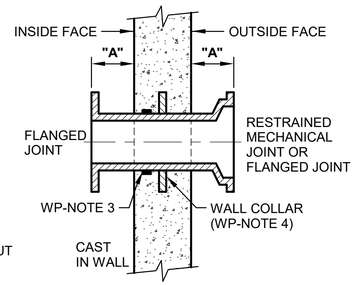
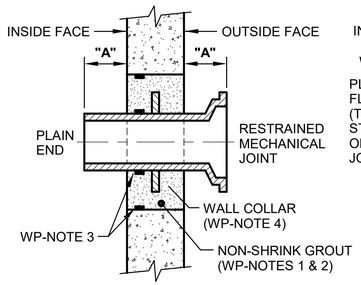


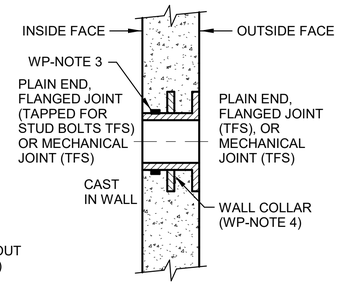
WP-1
EXISTING OR PRECAST



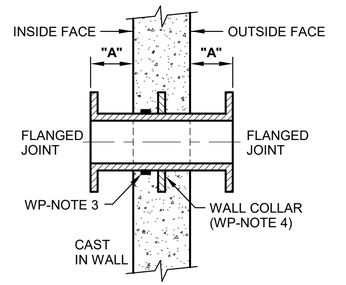
WP-2
NEW WALL



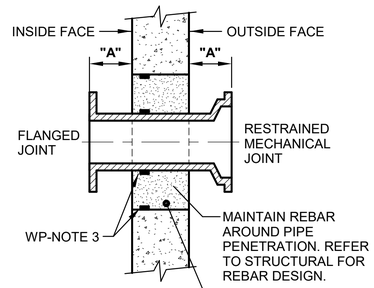
WP-3
NEW WALL



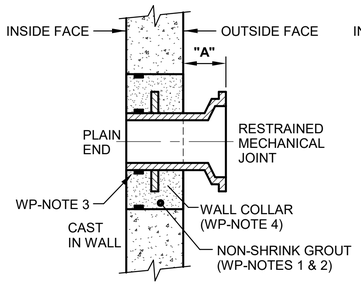
WP-10
NEW WALL
(WP-NOTE 5)



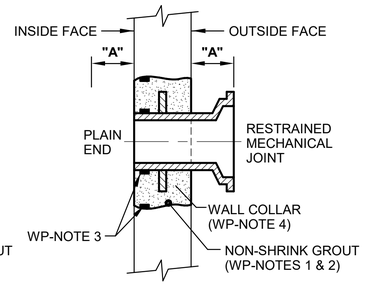
WP-9
NEW WALL



WP-11
NEW WALL



WP-6
NEW WALL



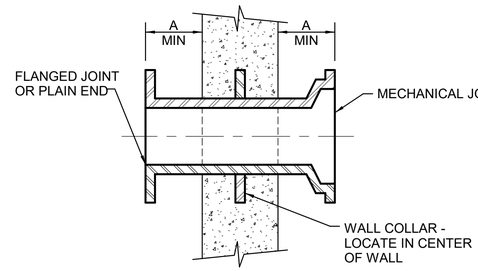
WP-7
EXISTING OR PRECAST

WP-NOTES:

1. BREAK OUT, OR CORE DRILL WALL, A MINIMUM OF TWO (2) INCHES LARGER THAN WALL COLLAR, OR SYNKO-FLEX PLASTIC WATER STOP; THEN, INSTALL WALL PIPE AND/OR SYNKO-FLEX PLASTIC WATER STOP AND GROUT IN PLACE.
2. EPOXY BONDING AGENT SHALL BE APPLIED TO ALL CONCRETE SURFACES TO BE GROUTED.
3. SYNKO-FLEX PLASTIC WATER STOP. LOCATE ON THE INSIDE FACE "SIDE" OF THE PIPE PENETRATION WITH MINIMUM 2" CLEAR TO FACE OF CONCRETE. LOCATE BETWEEN OUTSIDE DIAMETER OF PIPE AND INSIDE EDGE OF WALL SURFACE. APPLICABLE AT ALL WATER AND WASTEWATER CONTAINING STRUCTURES.
4. WALL COLLAR SHALL BE LOCATED IN CENTER OF THE WALL.
5. WP-10 MAY BE SUBSTITUTED AT CONTRACTOR'S DISCRETION. ADDITIONAL FITTINGS SHALL BE PROVIDED AS REQUIRED. FLANGE TO BE SHOWN, BUT OTHER COMBINATIONS CAN BE USED AS REQUIRED.

WALL PIPE SCHEDULE	
PIPE DIAMETER	"A" *
2"	4"
4" THRU 12"	6"
14" THRU 20"	8"
24" THRU 30"	10"
36" THRU 48"	12"

* UNLESS NOTED OTHERWISE



NEW STRUCTURES

TYPICAL WALL PIPE

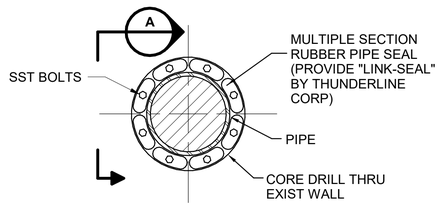
WP-8
(PIPE FLOOR SLEEVE)
NOT TO SCALE

NOTES:

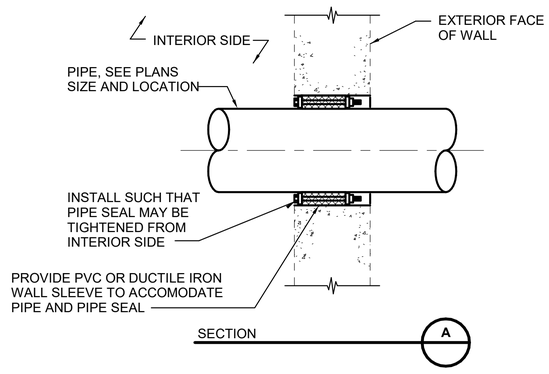
1. SEE STRUCTURAL SHEETS FOR DETAILS ON PIPE SLEEVE.

GENERAL NOTES:

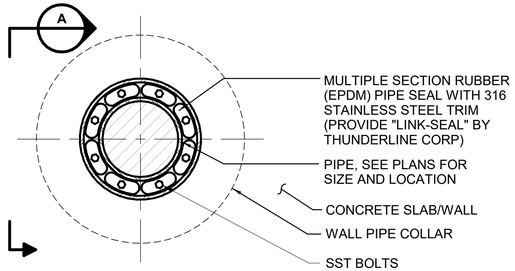
1. THIS SHEET IS TAKEN FROM A STANDARD SHEET AND NOT ALL ITEMS OR EQUIPMENT AS DESIGNATED HEREON ARE USED ON THIS PROJECT.



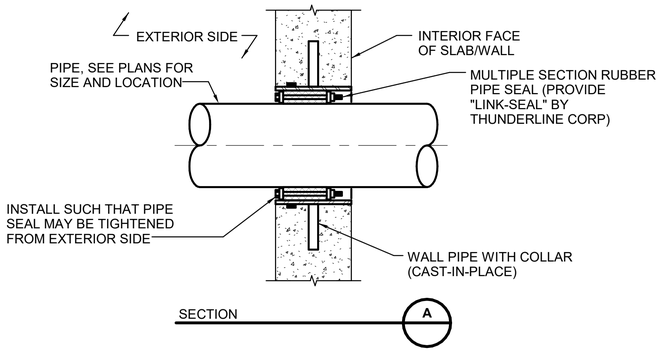
ELEVATION



WP-5 - PIPE PENETRATION - THRU EXISTING WALL



FRONT ELEVATION



WP-4 - PIPE PENETRATION - WALL PIPE AND LINK-SEAL

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6200 BRIDGE POINT PARKWAY
SUITE 400 AUSTIN, TX 78730
816-333-9400
Burns & McDonnell Engineering Co, Inc.
TBPE FIRM No. 845

date	detailed
FEBRUARY 10, 2025	C. GLEASON
designed	checked
A. HUMMEL	P. WARD

THE CITY OF SAN MARCOS

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PROCESS STANDARD DETAILS SHEET 1

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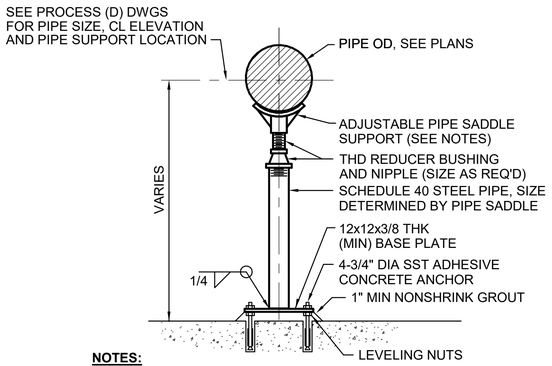
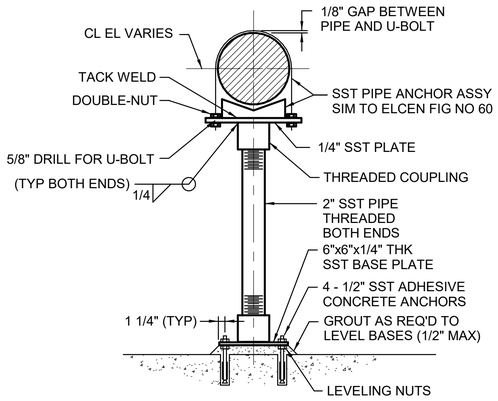


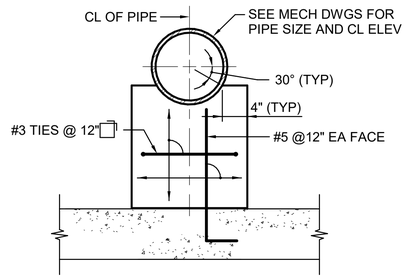
NOTES:

1. WHERE PIPE SUPPORT IS INDICATED TO BE LOCATED UNDER VALVE, PROVIDE ADJUSTABLE PLATE SUPPORT IN LIEU OF SADDLE SUPPORT.
2. COAT PIPE SYSTEM USING SYSTEM E-3 AS SPECIFIED IN SECTION 09900.

PS-01 PIPE SUPPORT
NOT TO SCALE



PS-02 BASE MOUNTED PIPE SUPPORT
NOT TO SCALE



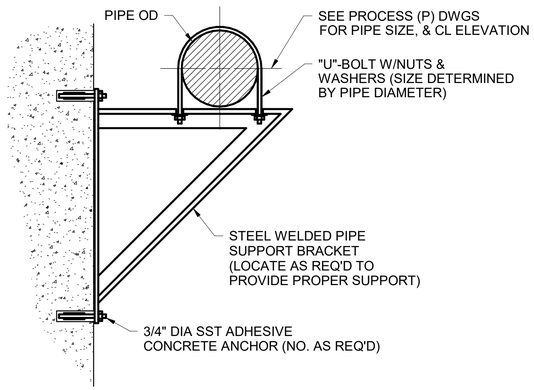
PS-06 CONCRETE PIPE SUPPORT

MINIMUM ROD DIAMETER FOR SINGLE ROD HANGERS		
NOMINAL PIPE OR TUBING DIA	NOMINAL ROD DIAMETER	
	A	B
IN.	IN.	IN.
1/4 THROUGH 2	3/8	3/8
2 1/2 , 3, 3 1/2	1/2	1/2
4, 5	5/8	1/2
6	3/4	5/8
8, 10, 12	7/8	3/4
14	1	7/8
16, 18	1	
20, 24	1 1/4	

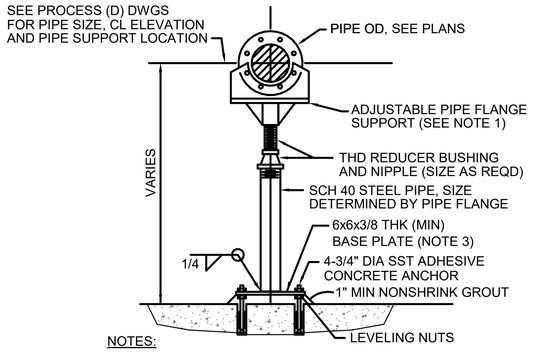
NOTES:

1. COLUMN A FOR USE WITH STD. WT. STEEL PIPE, CAST IRON PRESS. PIPE, CAST IRON SOIL PIPE AND GLASS PIPE.
2. COLUMN B FOR USE WITH COPPER TUBE, PLASTIC PIPE AND FIBERGLASS REINFORCED PIPE.
3. EXTRACTED FROM MSS SP-69, 1983, WITH PERMISSION OF THE PUBLISHER, THE MANUFACTURERS STANDARDIZATION SOCIETY.
4. THIS TABLE PROVIDED FOR REFERENCE ONLY. PROVIDE HANGER RODS IN ACCORDANCE WITH MSS SP-58, SP-69 AND SPECIFICATIONS.

MIN ROD DIAMETER FOR SINGLE ROD HANGERS SCHEDULE



PS-05 - PIPE SUPPORT



NOTES:

1. FLANGE DRILLING SHALL CONFORM TO ANSI B16.1 CLASS 125 AND ANSI B16.5 CLASS 150.
2. COAT PIPE SYSTEM USING SYSTEM E-1 AS SPECIFIED IN SECTION 09900.
3. BASE PLATE DIMENSIONS SHALL BE AS RECOMMENDED BY PIPE SUPPORT MANUFACTURER BASED ON PIPE SIZE.

PS-07

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SUITE 400 AUSTIN, TX 78730
816-333-9400
Burns & McDonnell Engineering Co, Inc.
TBPE FIRM No. 845

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designed	checked
A. HUMMEL	P. WARD

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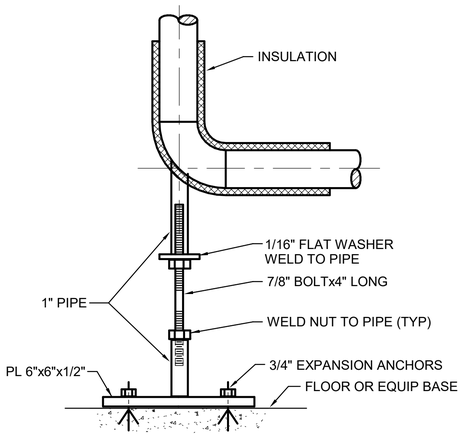
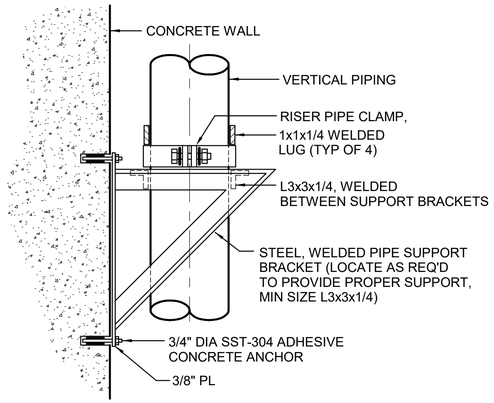
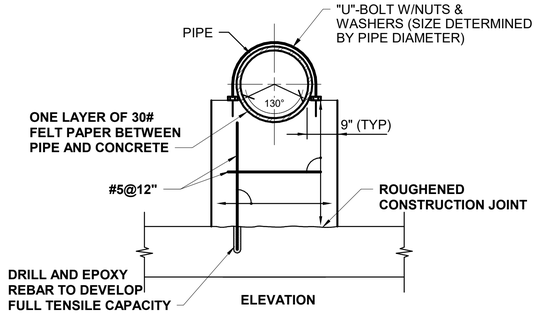


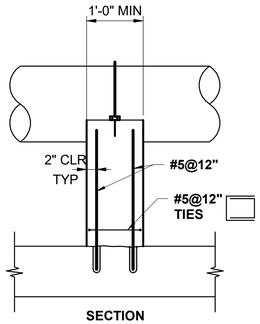
PS-08 - ELBOW HEEL PIPE SUPPORT



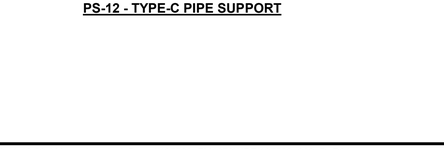
PS-09 - WALL MOUNTED PIPE SUPPORT

NOTES:
1. WALL-MOUNTED PIPE SUPPORT CAN BE INSTALLED IN THE SHOWN CONFIGURATION, OR IN AN INVERTED ORIENTATION AS SHOWN IN DRAWINGS.



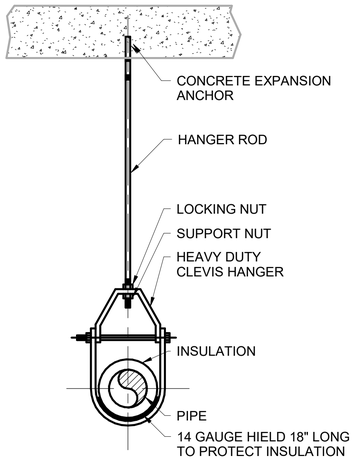


PS-10 - CONCRETE PIPE SADDLE

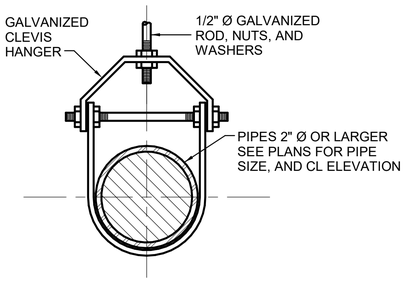


NOTE:
PIPE SUPPORT SPACING 6'-0" OC MAXIMUM

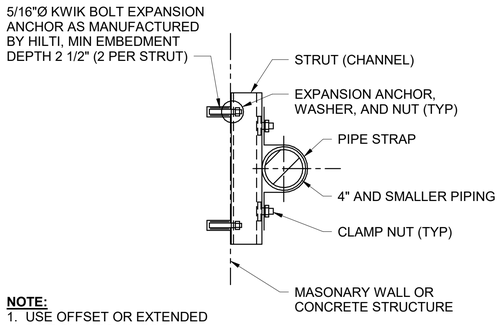
PS-11 - TYPE-A PIPE SUPPORT



PS-13 - CLEVIS HANGER - INSULATED PIPE



PS-12 - TYPE-C PIPE SUPPORT



NOTE:
1. USE OFFSET OR EXTENDED PIPE CLAMPS WHERE REQUIRED TO ADJUST PIPE OFFSET FROM WALL OR STRUCTURE.

PS-14 PIPE SUPPORT DETAIL
(4" AND SMALLER PIPING)
NOT TO SCALE

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SUITE 400 AUSTIN, TX 78730
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Burns & McDonnell Engineering Co, Inc.
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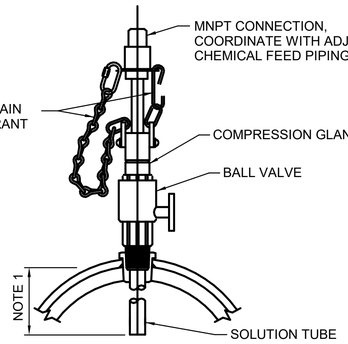
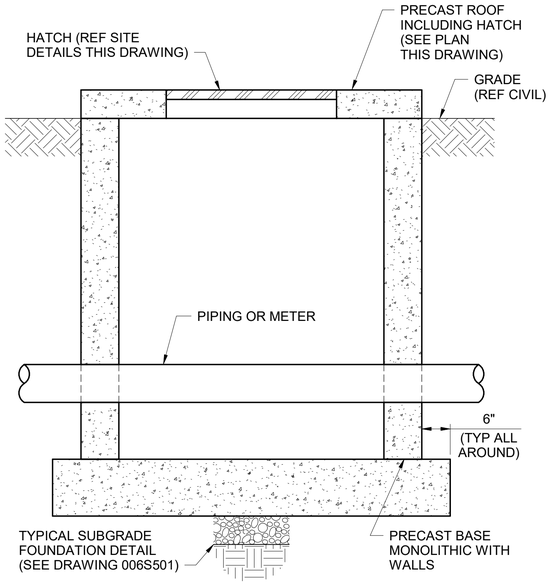


FEED INJECTION ASSEMBLY

NOT TO SCALE

NOTES:

1. INJECTION ASSEMBLY SHALL BE SAF-T-FLO MODEL (AS INDICATED IN INJECTION ASSEMBLY TABLE) OR ENGINEER APPROVED EQUAL, RATED TO 150 PSI WORKING PRESSURE.
2. SOLUTION TUBE SHALL EXTEND A MINIMUM OF 1/3 OF THE PIPE DIAMETER INTO THE PIPE. REFER TO INJECTION ASSEMBLY TABLE FOR SOLUTION TUBE LENGTHS.
3. DESIGN-BUILDER SHALL VERIFY NPT OUTLET SIZE WITH MANUFACTURER AND ADJUST AS REQUIRED.
4. MATERIALS SHALL BE SUITABLE FOR CHEMICAL AND COMPATIBLE WITH POTABLE WATER SUPPLY APPLICATIONS. WETTED MATERIALS TO BE NSF 61 CERTIFIED.
5. ORIENTATION OF INJECTION ASSEMBLY AND PIPE TAP AS INDICATED ON PLAN DRAWINGS AT CHEMICAL INJECTION LOCATION. ADDITIONAL VALVES OR ACCESSORIES IDENTIFIED ON P&IDS.



TYPICAL MANHOLE THIS SHEET

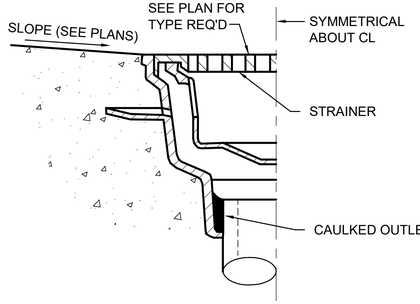
MAXIMUM HORIZONTAL PIPE HANGER AND SUPPORT SPACING

NOMINAL PIPE OR TUBE DIA	STANDARD WEIGHT STEEL PIPE		COPPER TUBE	
	WATER SERVICE	VAPOR SERVICE	WATER SERVICE	VAPOR SERVICE
IN.	FT.	FT.	FT.	FT.
1/4	7	8	5	5
3/8	7	8	5	6
1/2	7	8	5	6
3/4	7	9	5	7
1	7	9	6	8
1 1/4	7	9	7	9
1 1/2	9	12	8	10
2	10	13	8	11
2 1/2	11	14	9	13
3	12	15	10	14
3 1/2	13	16	11	15
4	14	17	12	16
5	16	19	13	18
6	17	21	14	20
8	19	24	16	23
10	20	26	18	25
12	23	30	19	28
14	25	32		
16	27	35		
18	28	37		
20	30	39		
24	32	42		
30	33	44		

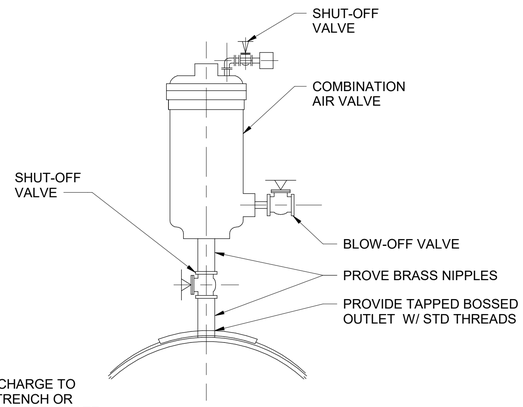
NOTES:

1. FOR SPACING SUPPORTS INCORPORATING TYPE 40 SHIELDS, SEE TABLE 5, MSS SP-69.
2. DOES NOT APPLY WHERE SPAN CALCULATIONS ARE MADE OR WHERE THERE ARE CONCENTRATED LOADS BETWEEN SUPPORTS SUC AS FLANGES, VALVES, SPECIALTIES, TEC, OR CHANGES IN DIRECTION REQUIRING ADDITIONAL SUPPORTS.
3. FIRE PROTECTION PIPING: FOLLOW REQUIREMENTS OF THE NATIONAL FIRE PROTECTION ASSOCIATION.
4. CAST IRON AND DUCTILE IRON PIPE: MIN. OF ONE (1) HANGER PER PIPE SECTION CLOSE TO JOINT ON THE BARREL. ALSO AT CHANGE OF DIRECTION AND BRANCH CONNECTIONS. CAST IRON PRESSURE PIPE: 12 FT. MAX. SPACING. CAST IRON SOIL PIPE: 10 FT. MAX SPACING.
5. PLASTIC AND FIBERGLASS REINFORCED PIPE: FOLLOW PIPE MANUFACTURER'S RECOMMENDATIONS FOR SPACING AND SERVICE CONDITIONS.
6. EXTRACTED FROM MSS SP-69, 1983, WITH PERMISSION OF THE PUBLISHER, THE MANUFACTURERS STANDARDIZATION SOCIETY.
7. THIS TABLE PROVIDED FOR REFERENCE ONLY. PROVIDE HANGER AND SUPPORT SPACING IN ACCORDANCE WITH MSS SP-58, SP-69 AND SPECIFICATIONS.

MAX HORIZONTAL PIPE HANGER & SUPPORT SPACING



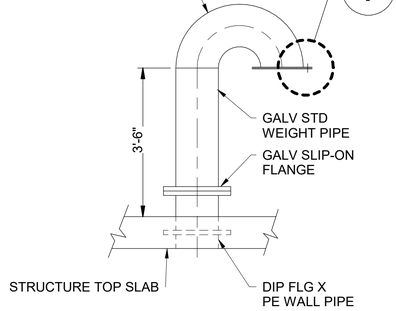
FD-01 - FLOOR DRAIN INSTALLATION GROUND FLOOR



NOTE:
ROUTE ALL DISCHARGE TO THE NEAREST TRENCH OR FLOOR DRAIN AND TERMINATE 6 INCHES ABOVE.

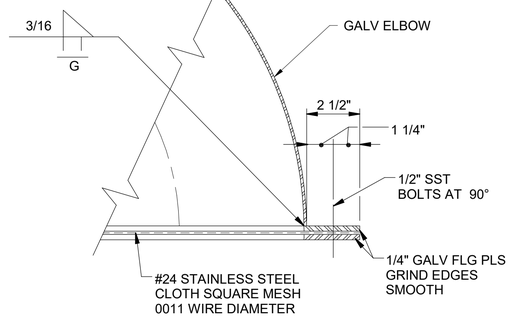
CAV-01 - COMBINATION AIR VALVE

NOT TO SCALE



TOP MOUNT VENT PIPE DETAIL

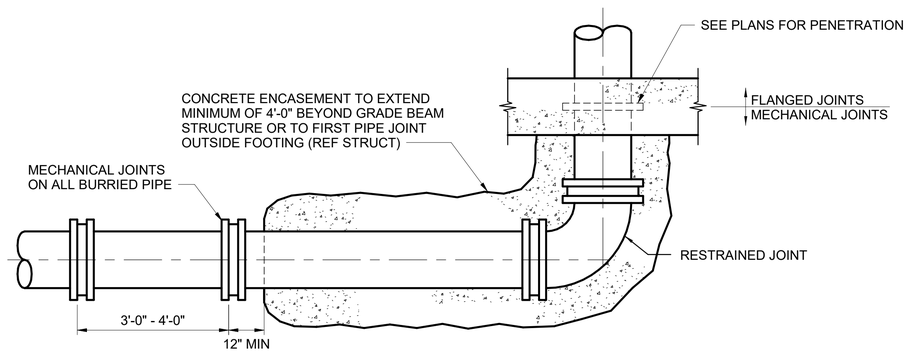
NOT TO SCALE



DETAIL 1

NOT TO SCALE

VP-01 - VENT PIPE



ENCASEMENT DETAIL

NOT TO SCALE

NOTE:
REFER TO STRUCTURAL DWGS FOR ADDITIONAL PIPE ENCASEMENT DETAILS

GENERAL NOTES:

1. THIS SHEET IS TAKEN FROM A STANDARD SHEET AND NOT ALL ITEMS OR EQUIPMENT AS DESIGNATED HEREON ARE USED ON THIS PROJECT.

no.	date	by	ckd	description
0	3/20/26	CAP	PEW	GMP 1/2: ISSUED FOR BID

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6200 BRIDGE POINT PARKWAY
SUITE 400 AUSTIN, TX 78730
816-333-9400
Burns & McDonnell Engineering Co, Inc.
TBPE FIRM No. 845

date	detailed
FEBRUARY 10, 2025	C. GLEASON
designed	checked
A. HUMMEL	P. WARD

THE CITY OF SAN MARCOS

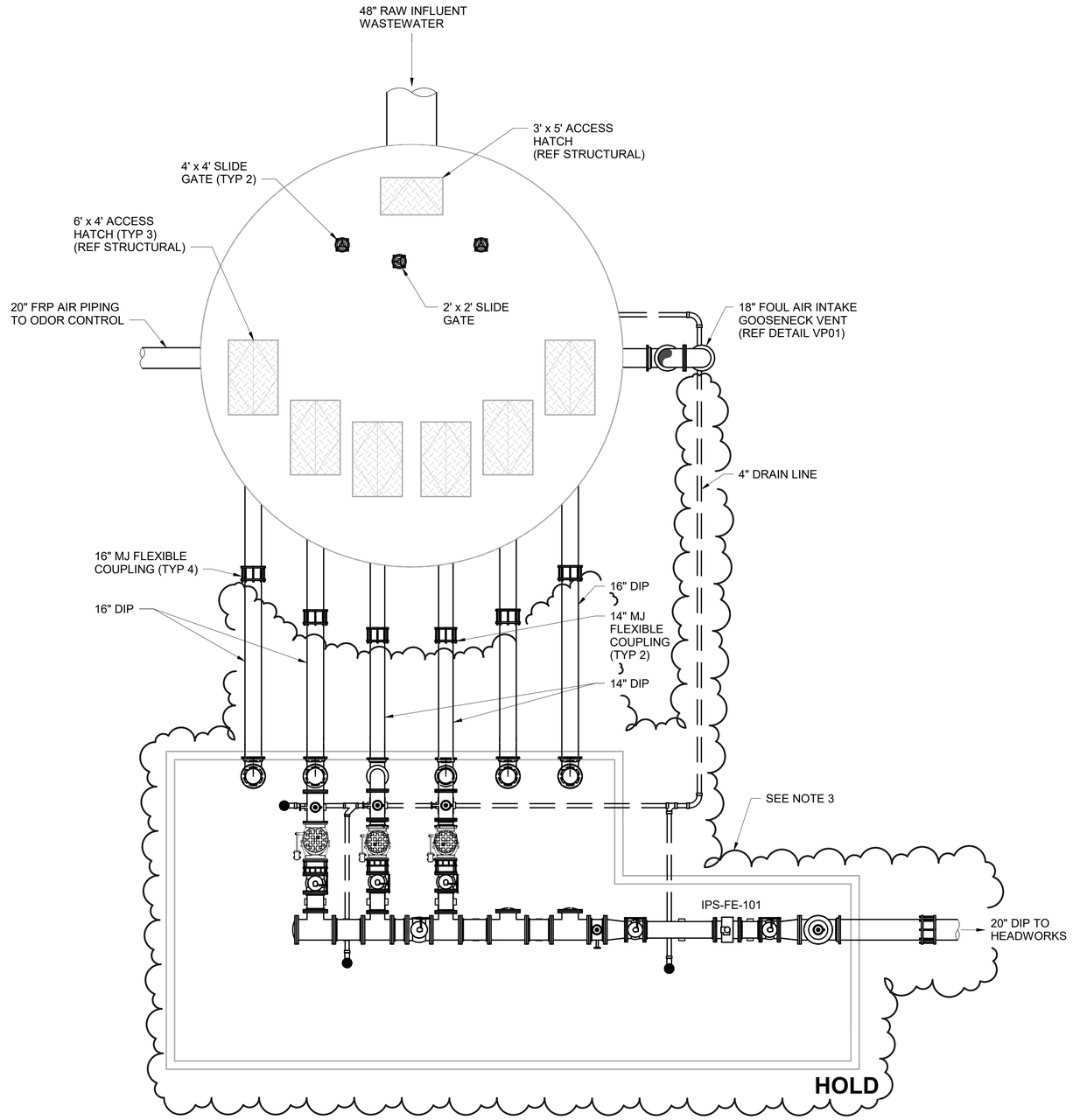
FM 1978 WATER RECLAMATION FACILITY
PROCESS STANDARD DETAILS SHEET 4

project	contract
187533	

drawing **006D504** — rev. **0**

sheet of sheets

file



INFLUENT PUMP STATION OVERALL PLAN

0 4' 8' 12'
SCALE IN FEET

NORTH

GENERAL NOTES:

1. COAT INSIDE OF WET WELL PER SPECIFICATION 09 90 00
2. BURIED COUPLINGS TO BE PROVIDED WITH 316 STAINLESS STEEL HARDWARE.
3. VALVE PAD AND PIPING TO BE CONSTRUCTED AS PART OF GMP-3. CONSTRUCT ONLY PIPING TO 5-FT OUTSIDE THE WET WELL AS PART OF THIS PROCUREMENT PACKAGE.
4. PERMANENT PUMPS TO BE PROCURED AS PART OF THIS PACKAGE BUT NOT INSTALLED UNTIL PLANT START-UP AND COMMISSIONING. INSTALL BASE ELBOWS, RISER PIPING AND OTHER LIST STATION APPURTENANCES AS SHOWN AS PART OF THIS PROCUREMENT PACKAGE.

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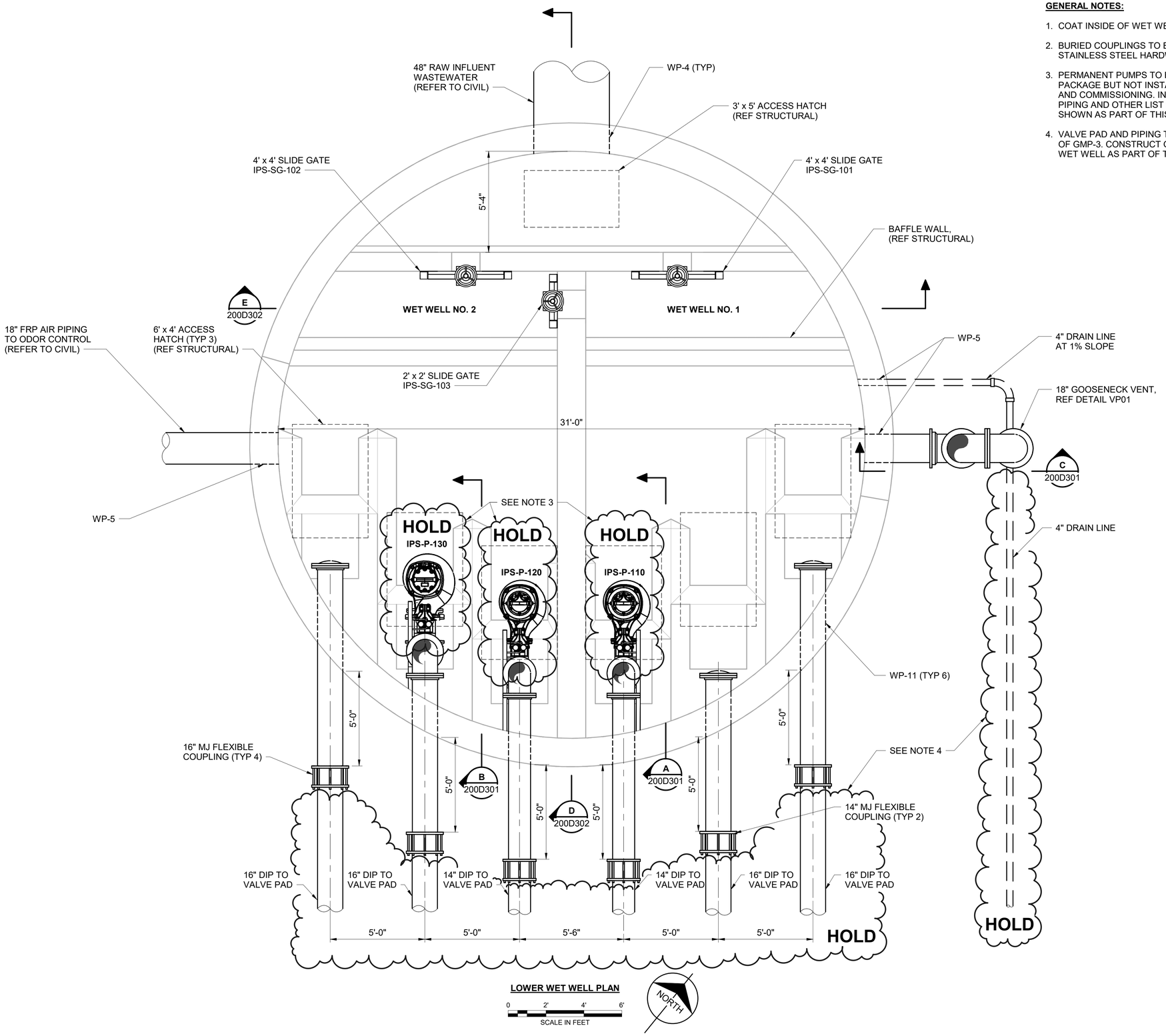
SUITE 400 AUSTIN, TX 78730
816-333-9400
Burns & McDonnell Engineering Co, Inc.
TBPE FIRM No. 845

date NOVEMBER 28, 2025	detailed C. GLEASON
designed M. BENTZ	checked P. WARD

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY
INFLUENT PUMP STATION
OVERALL PLAN

project 187533	contract
drawing 200D101	rev. 0
sheet	of sheets
file	



LOWER WET WELL PLAN

0 2' 4' 6'

SCALE IN FEET

NORTH

GENERAL NOTES:

1. COAT INSIDE OF WET WELL PER SPECIFICATION 09 90 00
2. BURIED COUPLINGS TO BE PROVIDED WITH 316 STAINLESS STEEL HARDWARE.
3. PERMANENT PUMPS TO BE PROCURED AS PART OF THIS PACKAGE BUT NOT INSTALLED UNTIL PLANT START-UP AND COMMISSIONING. INSTALL BASE ELBOWS, RISER PIPING AND OTHER LIST STATION APPURTENANCES AS SHOWN AS PART OF THIS PROCUREMENT PACKAGE.
4. VALVE PAD AND PIPING TO BE CONSTRUCTED AS PART OF GMP-3. CONSTRUCT ONLY PIPING TO 5-FT OUTSIDE OF WET WELL AS PART OF THIS PROCUREMENT PACKAGE.

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816-333-9400
Burns & McDonnell Engineering Co, Inc.
TBPE FIRM No. 845

date	detailed
NOVEMBER 28, 2025	C. GLEASON
designed	checked
M. BENTZ	P. WARD

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY

INFLUENT PUMP STATION
ENLARGED WET WELL PLAN

project	contract
187533	

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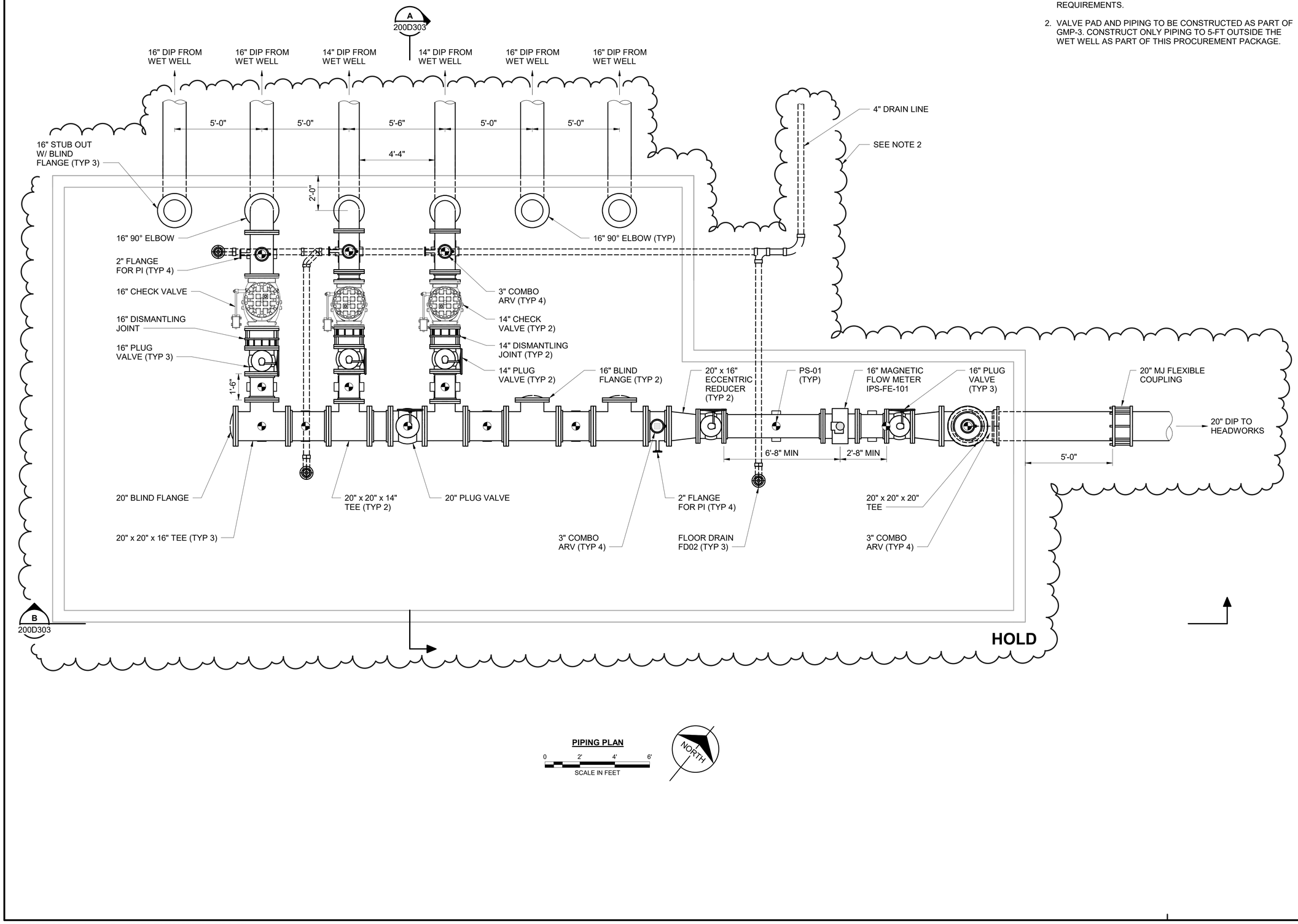

PIPING PLAN

0 2' 4' 6'

SCALE IN FEET

NORTH

GENERAL NOTES:

1. PROVIDE ADEQUATE STRAIGHT PIPE LENGTH UP AND DOWNSTREAM OF FLOW METER. REFER TO FLOW METER MANUFACTURER FOR STRAIGHT PIPE LENGTH REQUIREMENTS.
2. VALVE PAD AND PIPING TO BE CONSTRUCTED AS PART OF GMP-3. CONSTRUCT ONLY PIPING TO 5-FT OUTSIDE THE WET WELL AS PART OF THIS PROCUREMENT PACKAGE.

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816-333-9400
Burns & McDonnell Engineering Co, Inc.
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NOVEMBER 18, 2025	C. GLEASON
designed	checked
M. BENTZ	P. WARD

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY

INFLUENT PUMP STATION
ENLARGED PIPING PLAN

project	contract
187533	

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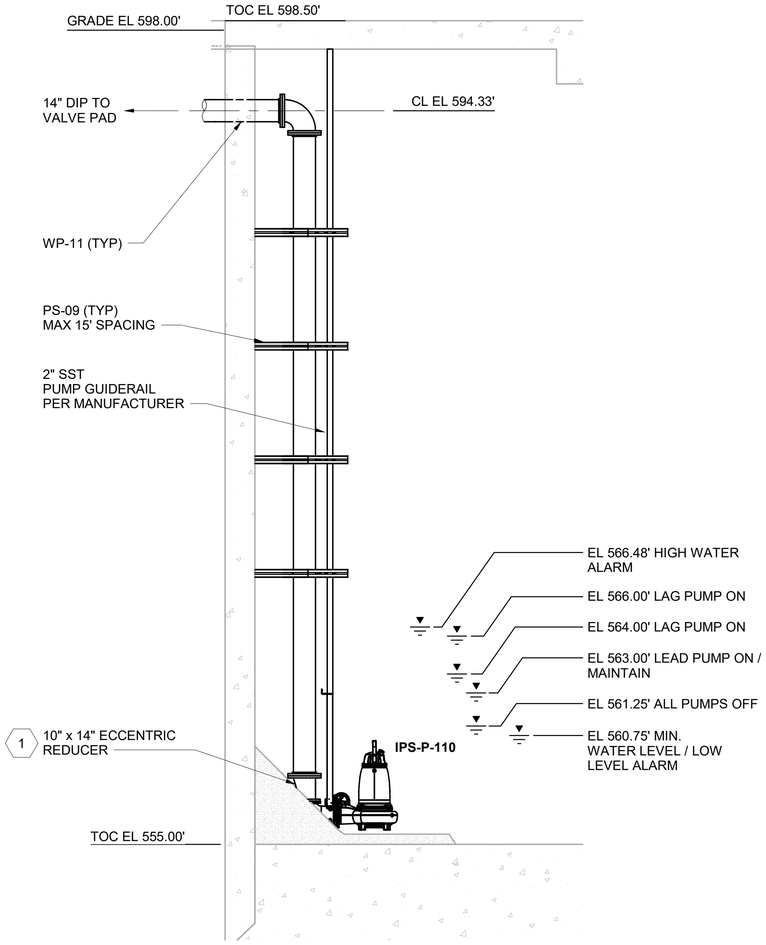
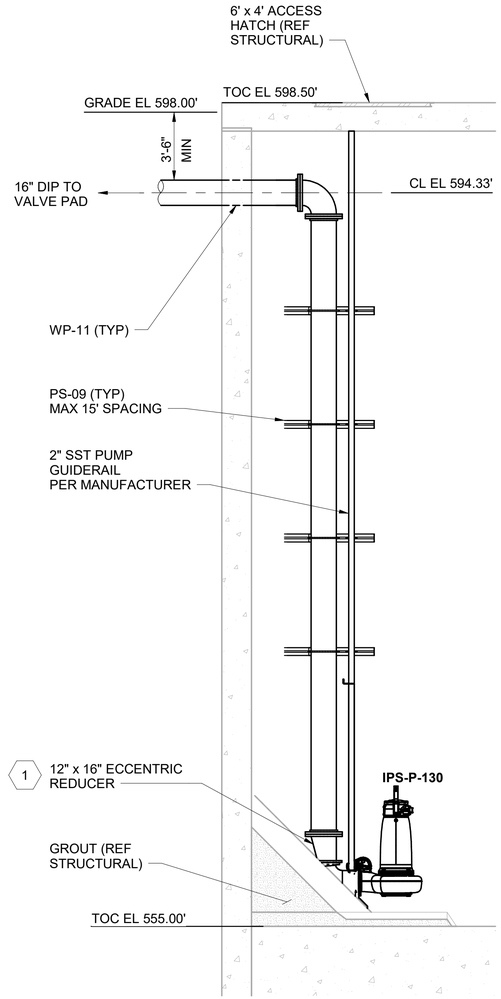


ELEVATION A 200D102

0 2' 4' 8'

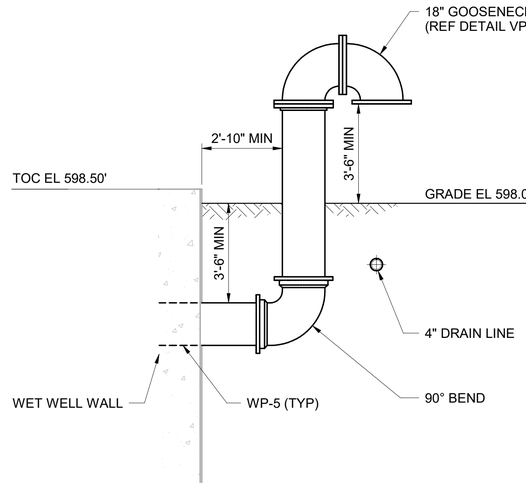
SCALE IN FEET



SECTION B 200D102

0 2' 4' 8'

SCALE IN FEET



SECTION C 200D102

0 2' 4' 6'

SCALE IN FEET

GENERAL NOTES:

1. PERMANENT PUMPS TO BE PROCURED AS PART OF THIS PACKAGE BUT NOT INSTALLED UNTIL PLANT START-UP AND COMMISSIONING. INSTALL BASE ELBOWS, RISER PIPING AND OTHER LIST STATION APPURTENANCES AS SHOWN AS PART OF THIS PROCUREMENT PACKAGE.

KEYED NOTES:

1 SIZE OF CONNECTION TO PUMP MAY VARY BASED UPON PUMP MANUFACTURER. COORDINATE REDUCER SIZE WITH PUMP MANUFACTURER.

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0	03/31/26	MMB	PEW	GMP 1/2: ISSUED FOR BID

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816-333-9400
Burns & McDonnell Engineering Co, Inc.
TBPE FIRM No. 845

date	detailed
NOVEMBER 18, 2025	C. GLEASON
designed	checked
M. BENTZ	P. WARD

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY

INFLUENT PUMP STATION
WET WELL SECTIONS I

project	contract
187533	

drawing **200D301** — rev. **0**

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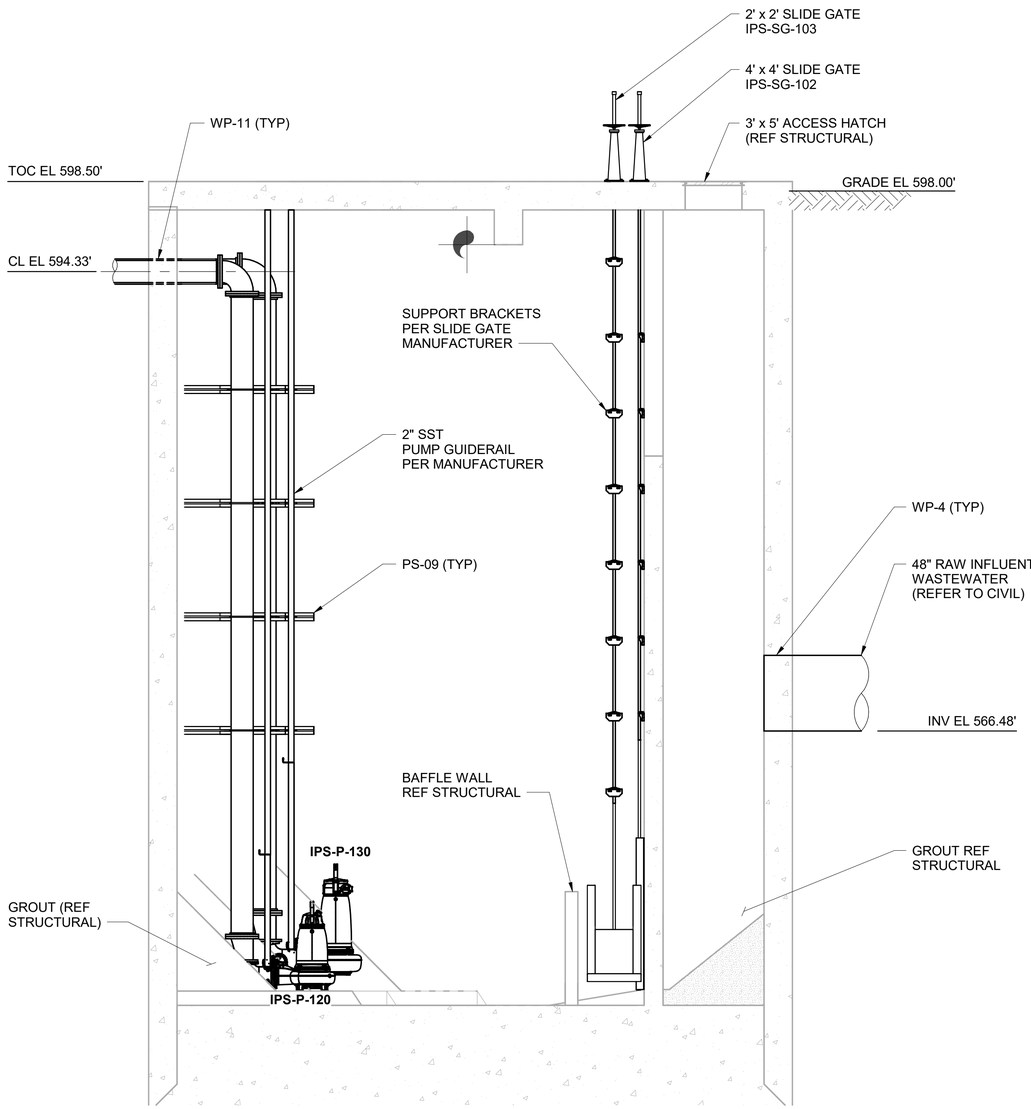
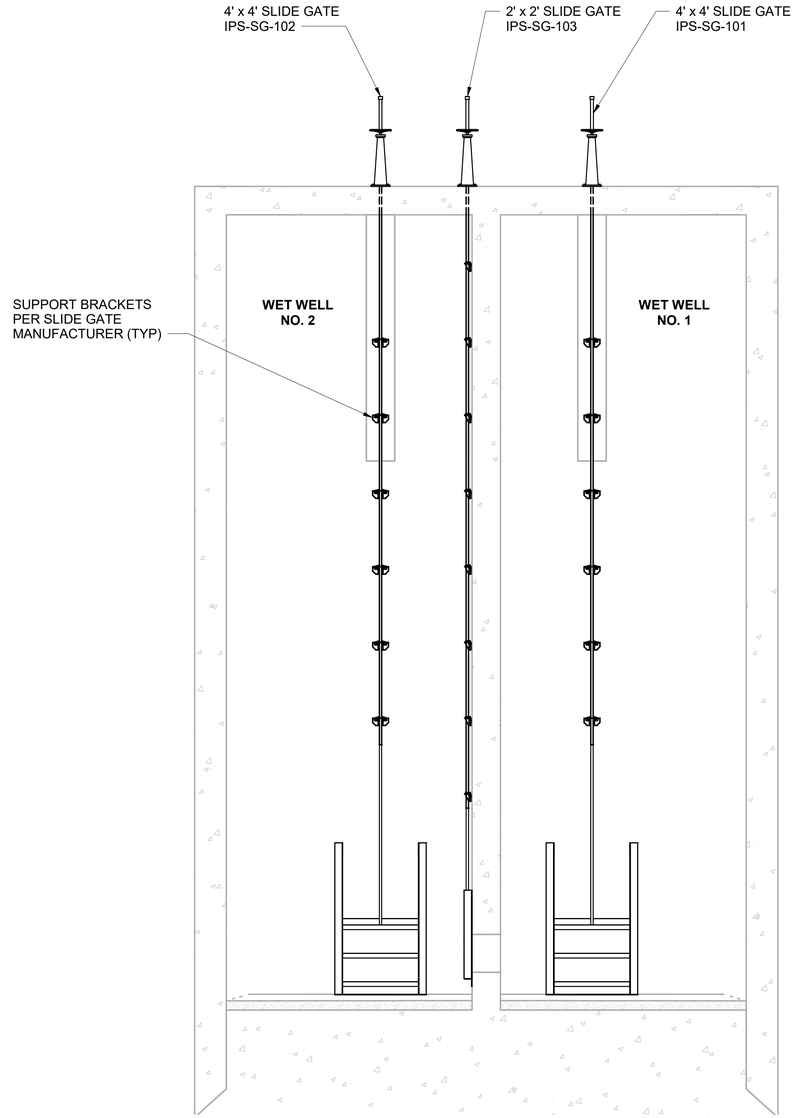


SECTION D 200D102

0 2' 4' 8'

SCALE IN FEET



SECTION E 200D102

0 2' 4' 8'

SCALE IN FEET

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0	03/31/26	MMB	PEW	GMP 1/2: ISSUED FOR BID

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SUITE 400 AUSTIN, TX 78730
816-333-9400
Burns & McDonnell Engineering Co, Inc.
TBPE FIRM No. 845

date	detailed
NOVEMBER 18, 2025	C. GLEASON
designed	checked
M. BENTZ	P. WARD

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY
INFLUENT PUMP STATION
WET WELL SECTIONS II

project	contract
187533	

drawing **200D302** rev. **0**

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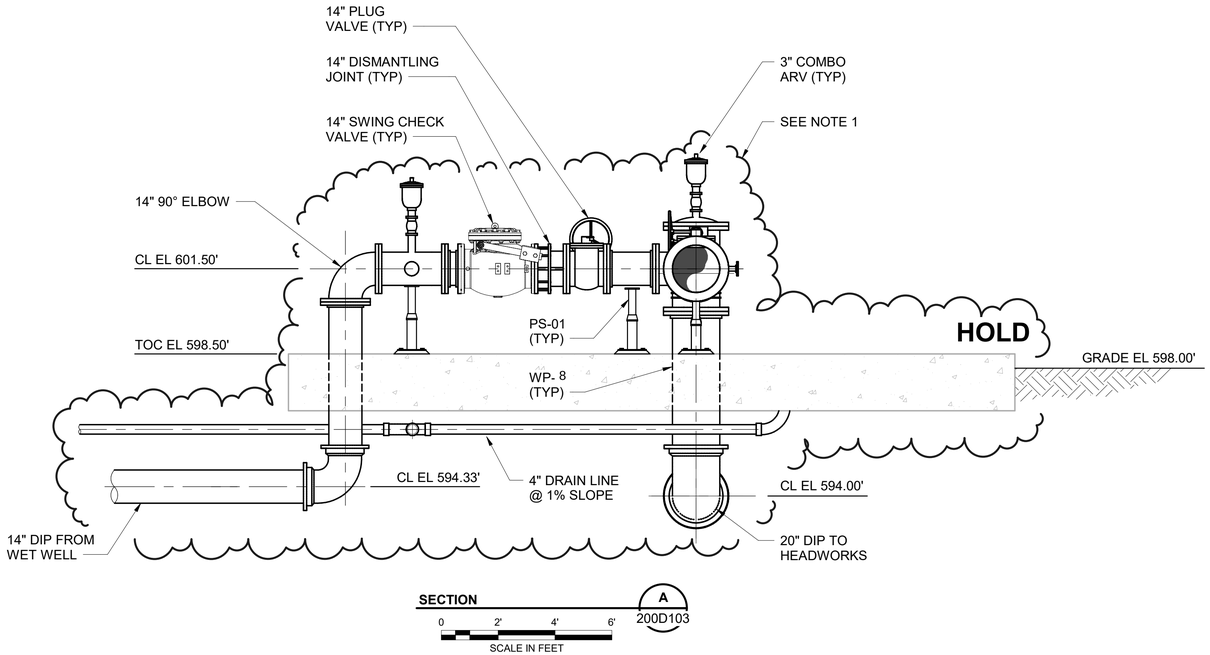
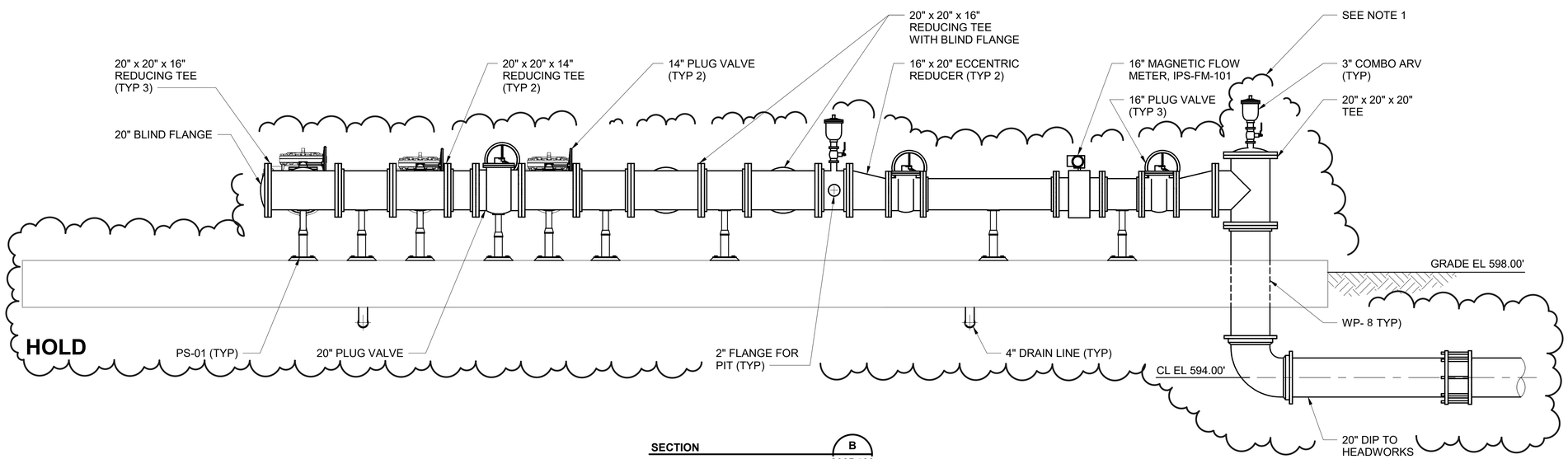


SECTION A
200D103

0 2' 4' 6'
SCALE IN FEET



SECTION B
200D103

0 2' 4' 6'
SCALE IN FEET

GENERAL NOTES:

1. VALVE PAD AND PIPING TO BE CONSTRUCTED AS PART OF GMP-3. CONSTRUCT ONLY PIPING TO 5-FT OUTSIDE OF WET WELL AS PART OF THIS PROCUREMENT PACKAGE.

no.	date	by	ckd	description
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816-333-9400
Burns & McDonnell Engineering Co, Inc.
TBPE FIRM No. 845

date	detailed
NOVEMBER 18, 2025	C. GLEASON
designed	checked
M. BENTZ	P. WARD

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY
INFLUENT PUMP STATION
PIPING SECTIONS

project	contract
187533	

drawing **200D303** rev. **0**

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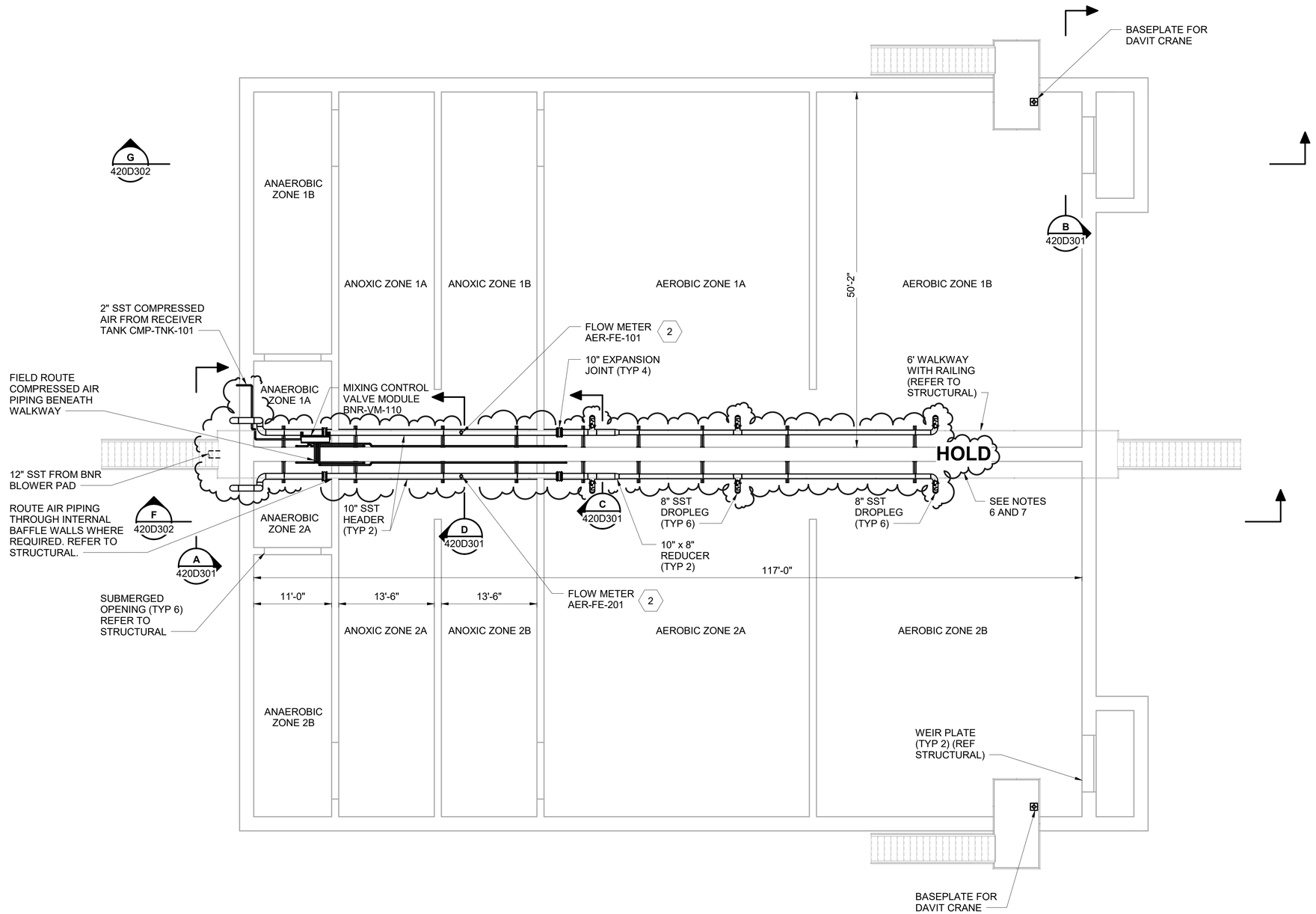

UPPER BNR BASINS PLAN

0 4' 8' 16'

SCALE IN FEET

NORTH

GENERAL NOTES:

1. FIELD ROUTE COMPRESSED AIR PIPING FROM RECEIVER TANK TO MIXING VALVE MODULE TO DROPLEGS IN EACH ZONE. CONTRACTOR TO SUPPORT PIPE AS REQUIRED.
2. INSTALL LARGE BUBBLE MIXING GRIDS PER MANUFACTURER REQUIREMENTS.
3. INSTALL FINE BUBBLE DIFFUSER GRIDS PER MANUFACTURER REQUIREMENTS.
4. CONCRETE ENCASE ALL PIPING BELOW THE SLAB PER DETAIL ENC-01. REFER TO STRUCTURAL.
5. ORP, DO, AND PH PROBES NOT SHOWN. REFER TO ELECTRICAL.
6. INTERNAL RECYCLE PUMPS, LARGE BUBBLE AND FINE BUBBLE DIFFUSER GRIDS, AND AERATION PIPING TO BE PROCURED AND CONSTRUCTED AS PART OF GMP-3
7. CONSTRUCT ONLY INTERNAL RECYCLE PIPING WALL PIPES AND PIPING TO 5-FT OUTSIDE THE BASINS AS PART OF THIS PROCUREMENT PACKAGE.

KEYED NOTES:

1. SIZE OF CONNECTION TO IR PUMP MAY VARY BASED UPON PUMP MANUFACTURER. COORDINATE REDUCER SIZE WITH IR PUMP MANUFACTURER.
2. PROVIDE ADEQUATE STRAIGHT PIPE LENGTH UP AND DOWNSTREAM OF FLOW METER. REFER TO FLOW METER MANUFACTURER FOR STRAIGHT PIPE LENGTH REQUIREMENTS.

no.	date	by	ckd	description
0	03/31/26	CAP	PEW	GMP 1/2: ISSUED FOR BID

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9400 WARD PARKWAY
KANSAS CITY, MO 64114
816-333-9400
Burns & McDonnell Engineering Co, Inc.
Firm Reg. No. F-845

date	detailed
NOVEMBER 18, 2025	C. GLEASON
designed	checked
C. PRIM	P. WARD

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY

UPPER BNR BASINS PLAN

project	contract
187533	

drawing **420D101** — rev. **0**

sheet of sheets

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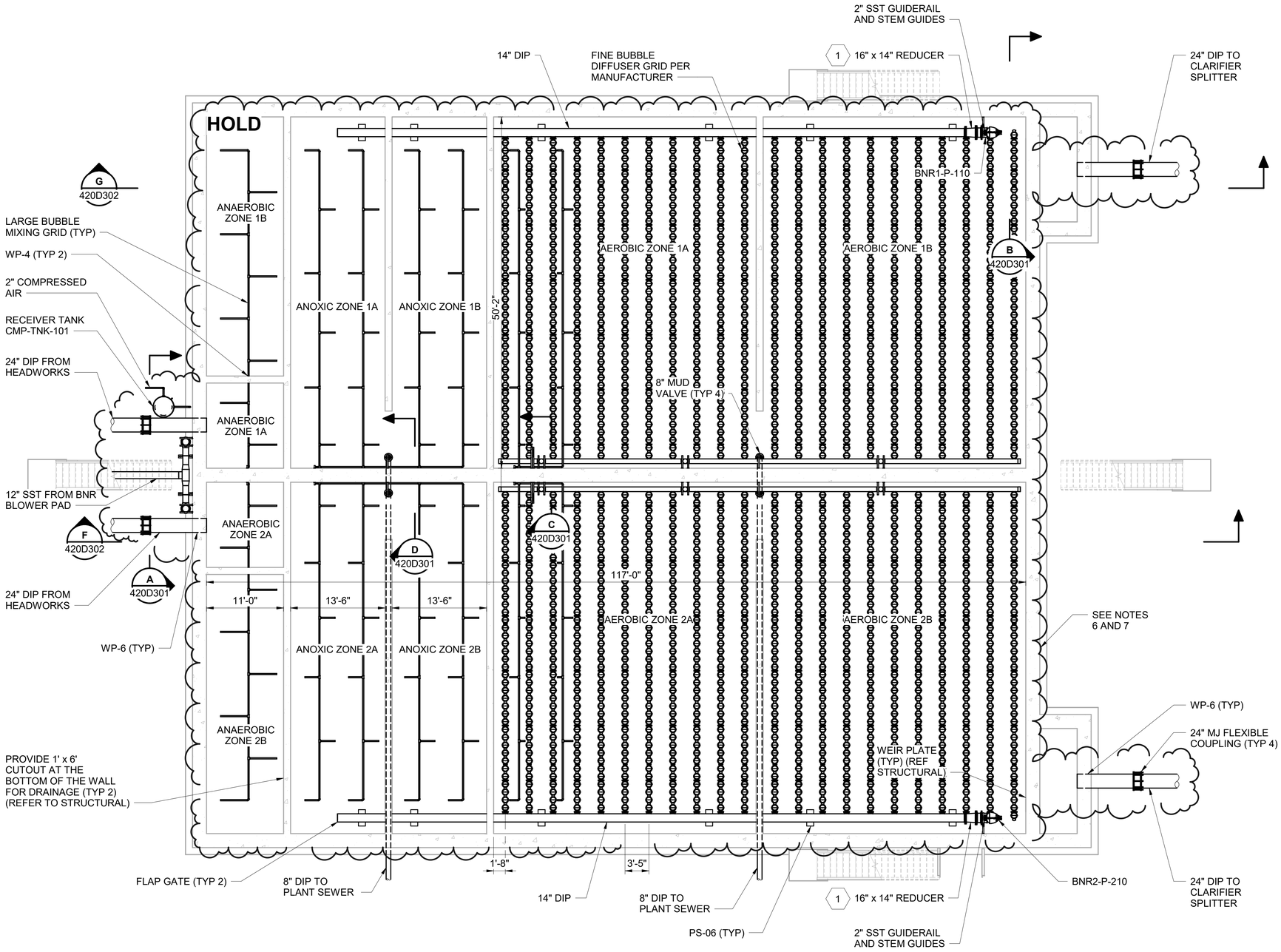

LOWER BNR BASINS PLAN

0 4' 8' 16'
SCALE IN FEET

NORTH

GENERAL NOTES:

1. FIELD ROUTE COMPRESSED AIR PIPING FROM RECEIVER TANK TO MIXING VALVE MODULE TO DROPLEGS IN EACH ZONE. CONTRACTOR TO SUPPORT PIPE AS REQUIRED.
2. INSTALL LARGE BUBBLE MIXING GRIDS PER MANUFACTURER REQUIREMENTS.
3. INSTALL FINE BUBBLE DIFFUSER GRIDS PER MANUFACTURER REQUIREMENTS.
4. CONCRETE ENCASE ALL PIPING BELOW THE SLAB PER DETAIL ENC-01. REFER TO STRUCTURAL.
5. ORP, DO, AND PH PROBES NOT SHOWN. REFER TO ELECTRICAL.
6. INTERNAL RECYCLE PUMPS, LARGE BUBBLE AND FINE BUBBLE DIFFUSER GRIDS, AND AERATION PIPING TO BE PROCURED AND CONSTRUCTED AS PART OF GMP-3
7. CONSTRUCT ONLY INTERNAL RECYCLE PIPING, WALL PIPES, AND PIPING TO 5-FT OUTSIDE THE BASINS AS PART OF THIS PROCUREMENT PACKAGE.

KEYED NOTES:

1. SIZE OF CONNECTION TO IR PUMP MAY VARY BASED UPON PUMP MANUFACTURER. COORDINATE REDUCER SIZE WITH IR PUMP MANUFACTURER.
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Burns & McDonnell Engineering Co, Inc.
Firm Reg. No. F-845

date	detailed
NOVEMBER 18, 2025	C. GLEASON
designed	checked
C. PRIM	P. WARD

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY
LOWER BNR BASINS PLAN

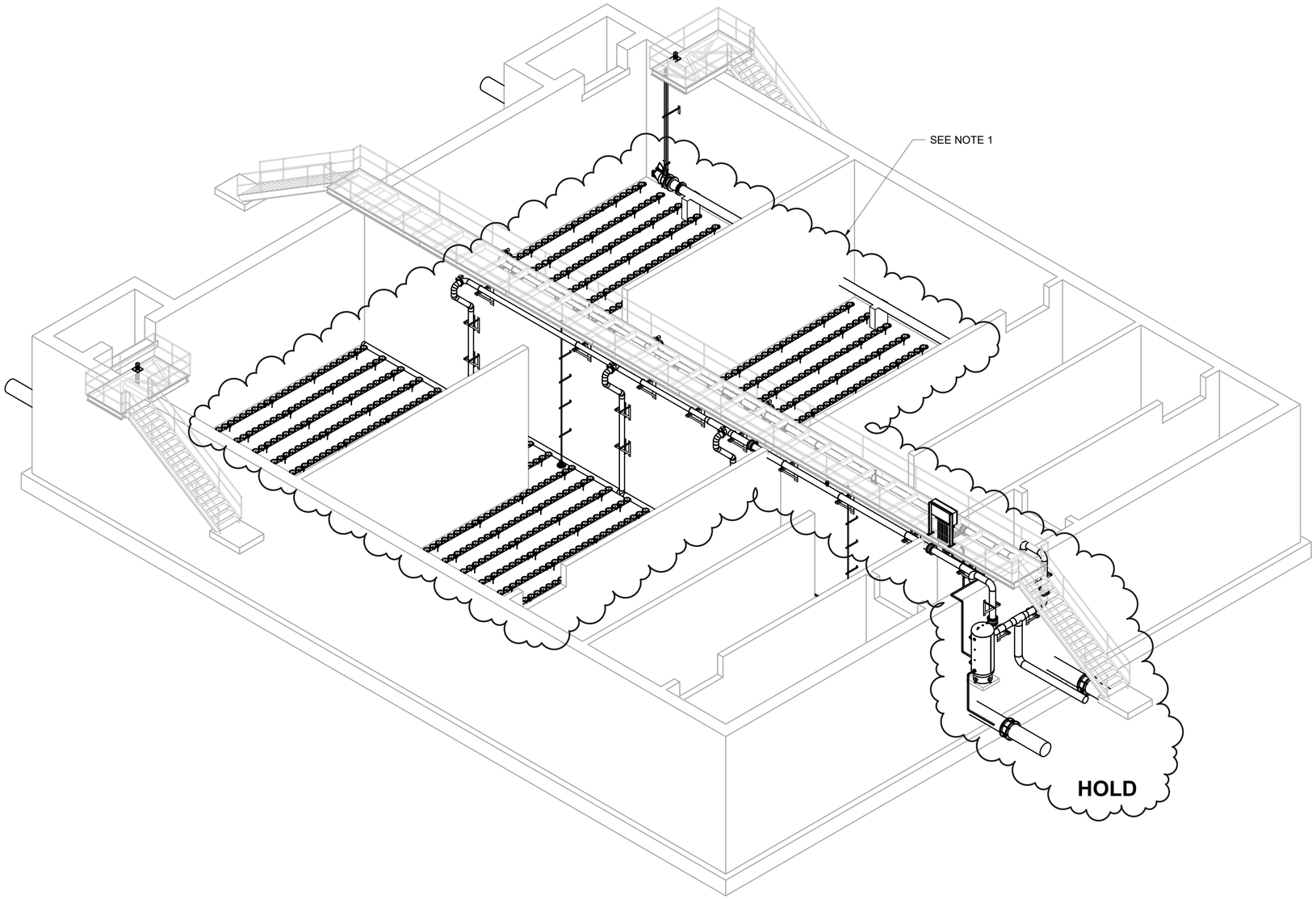
project	contract
187533	

drawing **420D102** – **rev. 0**

sheet of sheets
file

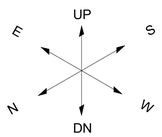
GENERAL NOTE:

1. INTERNAL PIPING AND EQUIPMENT TO BE PROCURED AND INSTALLED AS PART OF GMP-3. INSTALL ONLY WALL PIPES AND UNDER SLAB PIPING AS PART OFTHIS PROCUREMENT PACKAGE. NOTE ALSO THAT MISCELLANEOUS METALS, I.E., STAIRS AND WALKWAYS, TO BE INSTALLED AS PART OF GMP-3.



BNR BASINS ISO

0 4' 8' 16'
SCALE IN FEET



no.	date	by	ckd	description
0	03/31/26	CAP	PEW	GMP 1/2: ISSUED FOR BID

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BURNS McDONNELL
9400 WARD PARKWAY
KANSAS CITY, MO 64114
816-333-9400
Burns & McDonnell Engineering Co, Inc.
Firm Reg. No. F-845

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NOVEMBER 18, 2025	C. GLEASON
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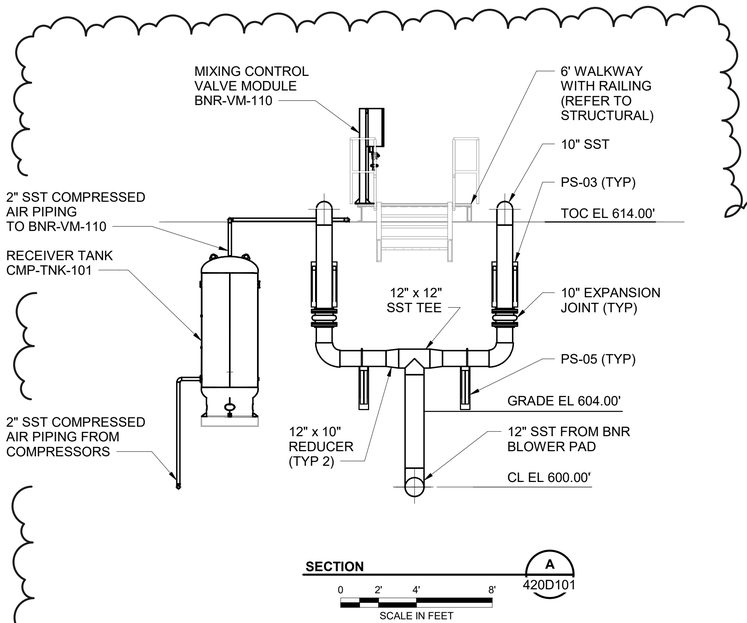
THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY
BNR BASINS ISOMETRIC

project	contract
187533	

drawing **420D103** — **rev. 0**

sheet of sheets
file



SECTION A
420D101

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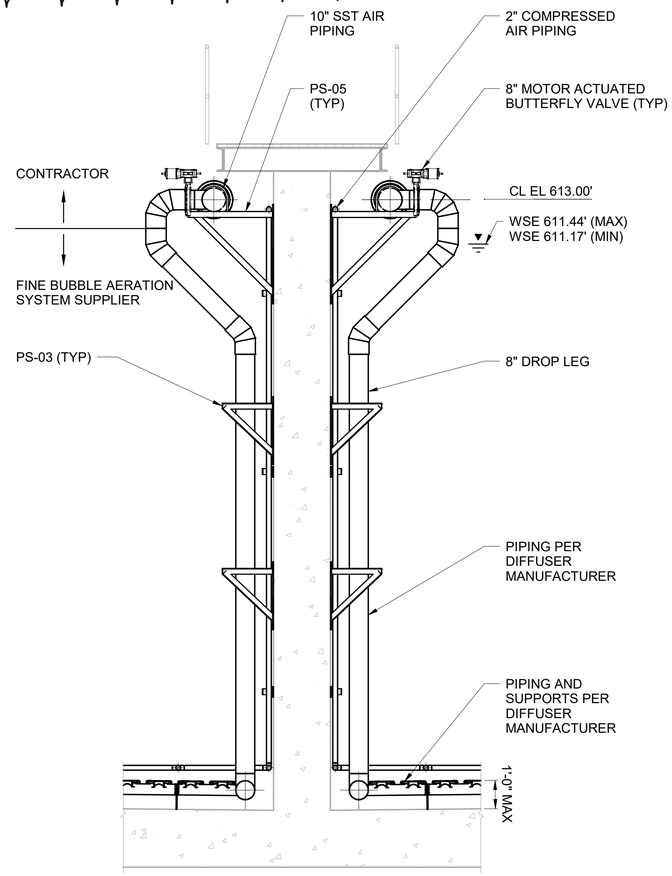

SECTION C
420D101

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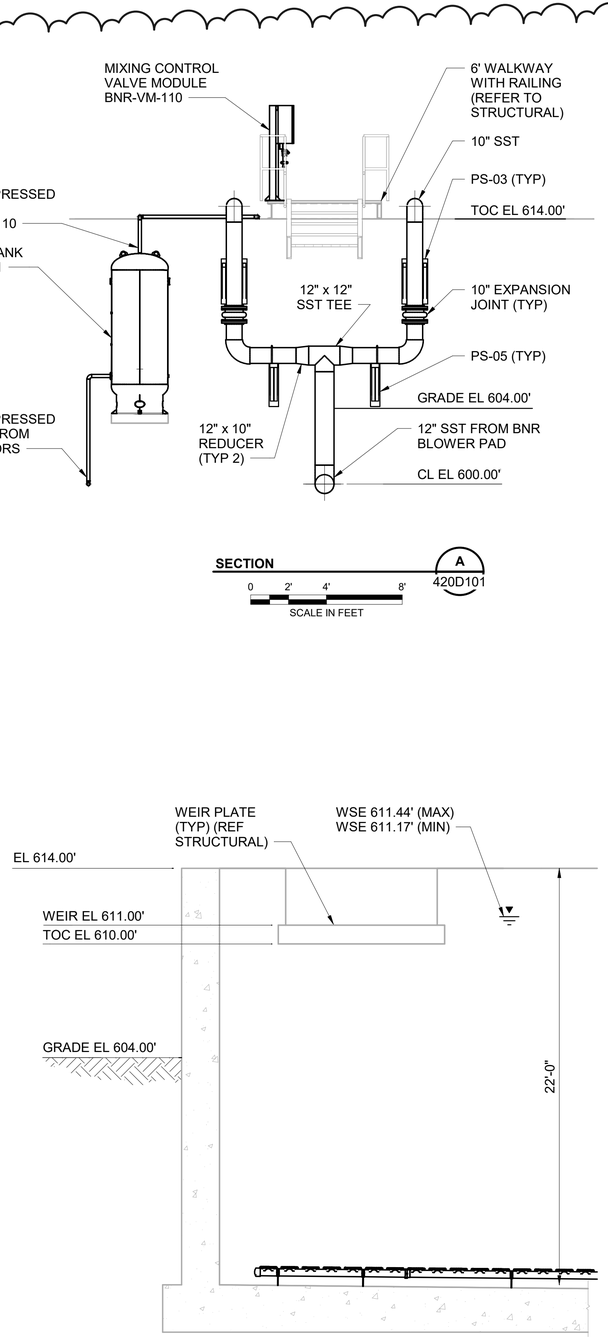
SCALE IN FEET



SECTION B
420D101

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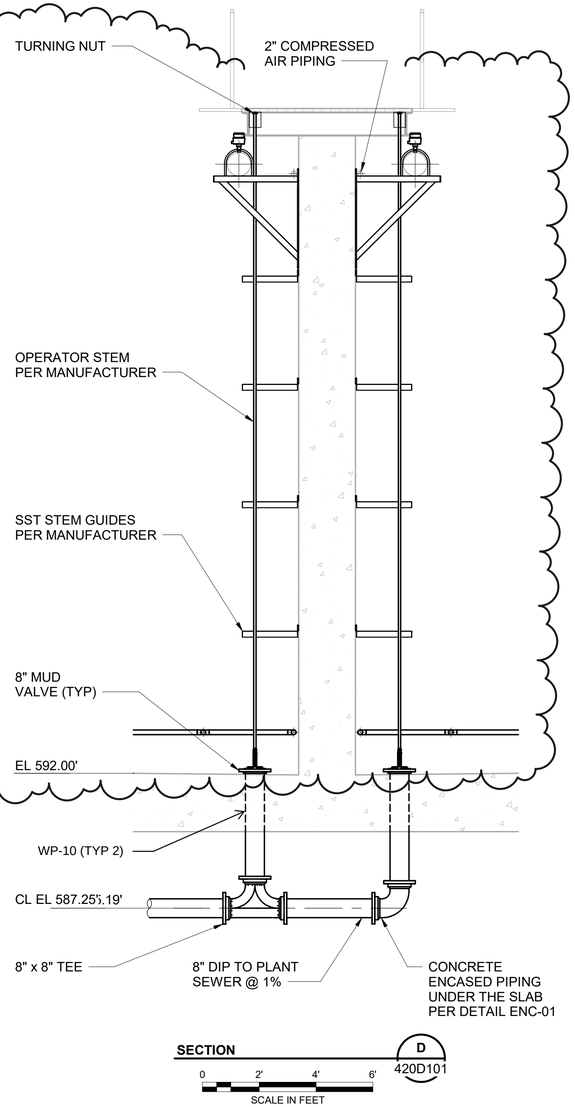
SCALE IN FEET



SECTION D
420D101

0 2' 4' 6'
SCALE IN FEET

HOLD

GENERAL NOTES:

1. DELINEATION OF CONTRACTOR AND MANUFACTURER SHOWN IS FOR SCOPE OF SUPPLY ONLY. CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLATION.
2. INTERNAL PIPING AND EQUIPMENT TO BE PROCURED AND INSTALLED AS PART OF GMP-3. INSTALL ONLY WALL PIPES AND UNDER SLAB PIPING AS PART OFTHIS PROCUREMENT PACKAGE. NOTE ALSO THAT MISCELLANEOUS METALS, I.E., STAIRS AND WALKWAYS, TO BE INSTALLED AS PART OF GMP-3.

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BURNS McDONNELL
9400 WARD PARKWAY
KANSAS CITY, MO 64114
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Firm Reg. No. F-845

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NOVEMBER 18, 2025	C. GLEASON
designed	checked
C. PRIM	P. WARD

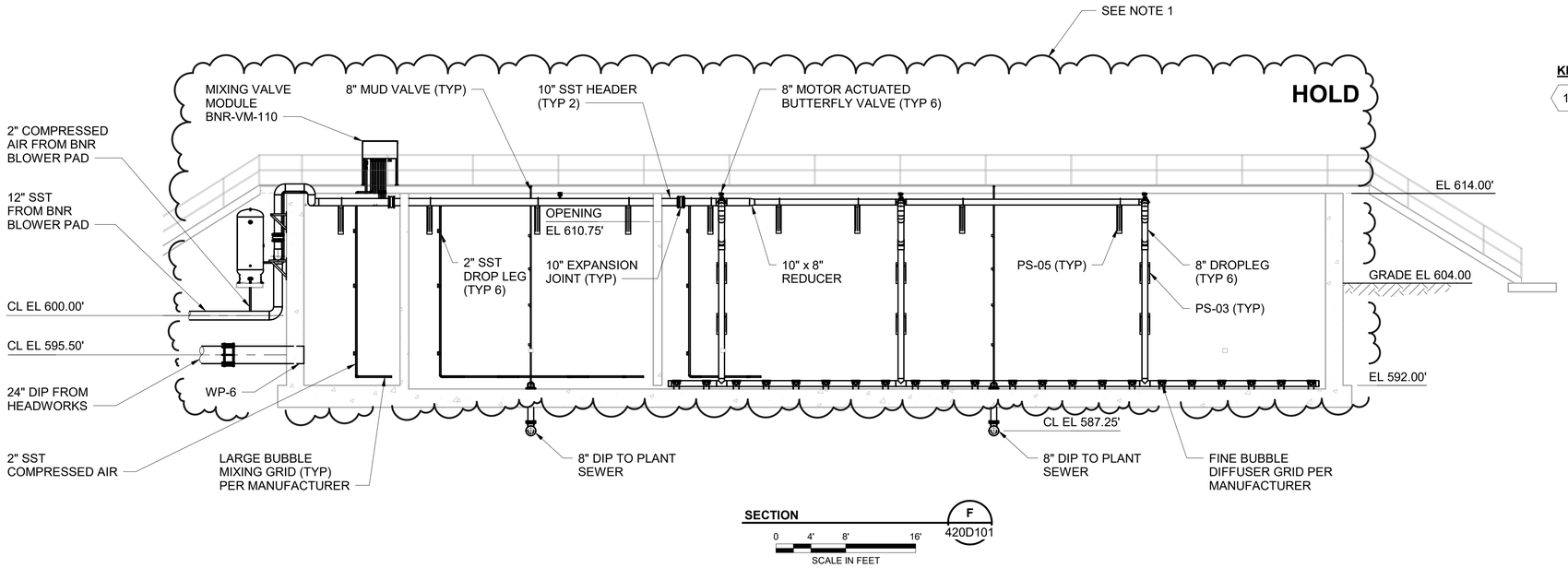
THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY
BNR BASINS SECTIONS I

project	contract
187533	

drawing **420D301** — rev. **0**

sheet of sheets
file



SECTION F
420D101

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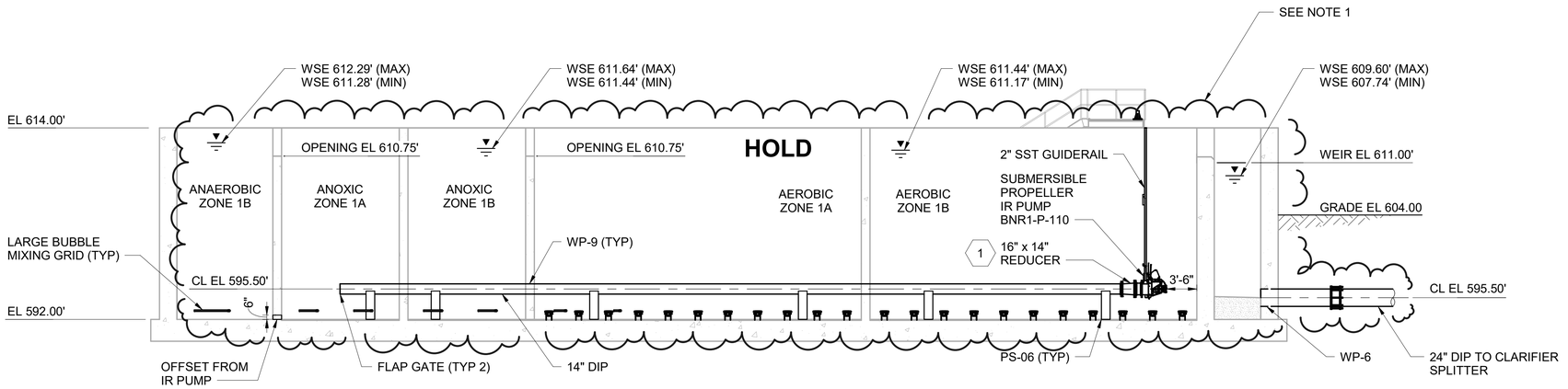
SCALE IN FEET



SECTION G
420D101

0 4' 8' 16'
SCALE IN FEET

GENERAL NOTE:

1. INTERNAL PIPING AND EQUIPMENT TO BE PROCURED AND INSTALLED AS PART OF GMP-3. INSTALL ONLY WALL PIPES AND UNDER SLAB PIPING AS PART OFTHIS PROCUREMENT PACKAGE. NOTE ALSO THAT MISCELLANEOUS METALS, I.E., STAIRS AND WALKWAYS, TO BE INSTALLED AS PART OF GMP-3.

KEYED NOTES:

1. SIZE OF CONNECTION TO IR PUMP MAY VARY BASED UPON PUMP MANUFACTURER. COORDINATE REDUCER SIZE WITH IR PUMP MANUFACTURER.

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designed	checked
C. PRIM	P. WARD

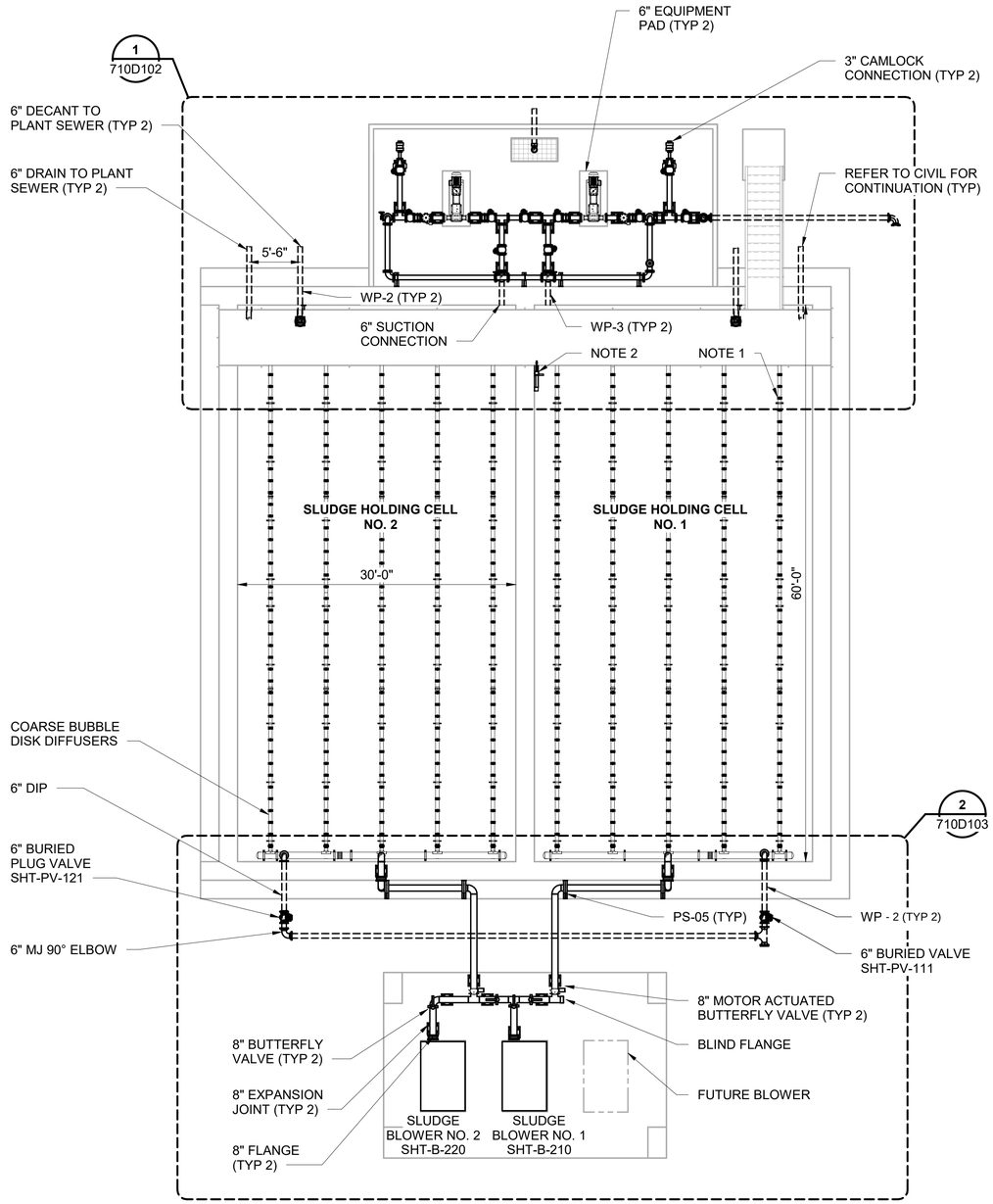
THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY
BNR BASINS SECTIONS II

project	contract
187533	

drawing **420D302** rev. **0**

sheet of sheets
file



HOLDING TANK PLAN

0 4' 8' 16'

SCALE IN FEET

NORTH

GENERAL NOTES:

1. MEDIUM BUBBLE DIFFUSER SYSTEM PROVIIDED THROUGHOUT EACH THIN SLUDGE HOLDING TANK. REFERENCE SECTION 46 51 21 AND SUPPLIER PROVIDED DRAWINGS.
2. PROVIDE A MANUAL, PEDESTAL-MOUNTED GEARED GATE OPERATOR FOR SHT-SG-101. THE OPERATOR SHALL BE CRANK OR HANDWHEEL OPERATED AND DESIGNED TO PERMIT OPERATION FROM THE WALKWAY. THE GATE STEM WILL BE OFFSET FROM THE WALKWAY AT A MAXIMUM DISTANCE OF 12 INCHES. THE GATE SUPPLIER SHALL FURNISH AN EXTENSION SHAFT, COUPLINGS, AND ALL NECESSARY SUPPORTS TO LOCATE THE CRANK OR HANDWHEEL IN A READILY ACCESSIBLE POSITION AT THE WALKWAY. THE OPERATOR ASSEMBLY SHALL BE FURNISHED COMPLETE WITH ALL COMPONENTS NECESSARY FOR A FULLY FUNCTIONAL INSTALLATION.

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BURNS McDONNELL
6200 BRIDGE POINT PARKWAY,SUITE 400
AUSTIN, TX 78730
Burns & McDonnell Engineering Co, Inc.
FIRM Reg. No. F-845

date	detailed
FEBRUARY 13, 2026	C. GLEASON
designed	checked
A. HUMMEL	P. WARD

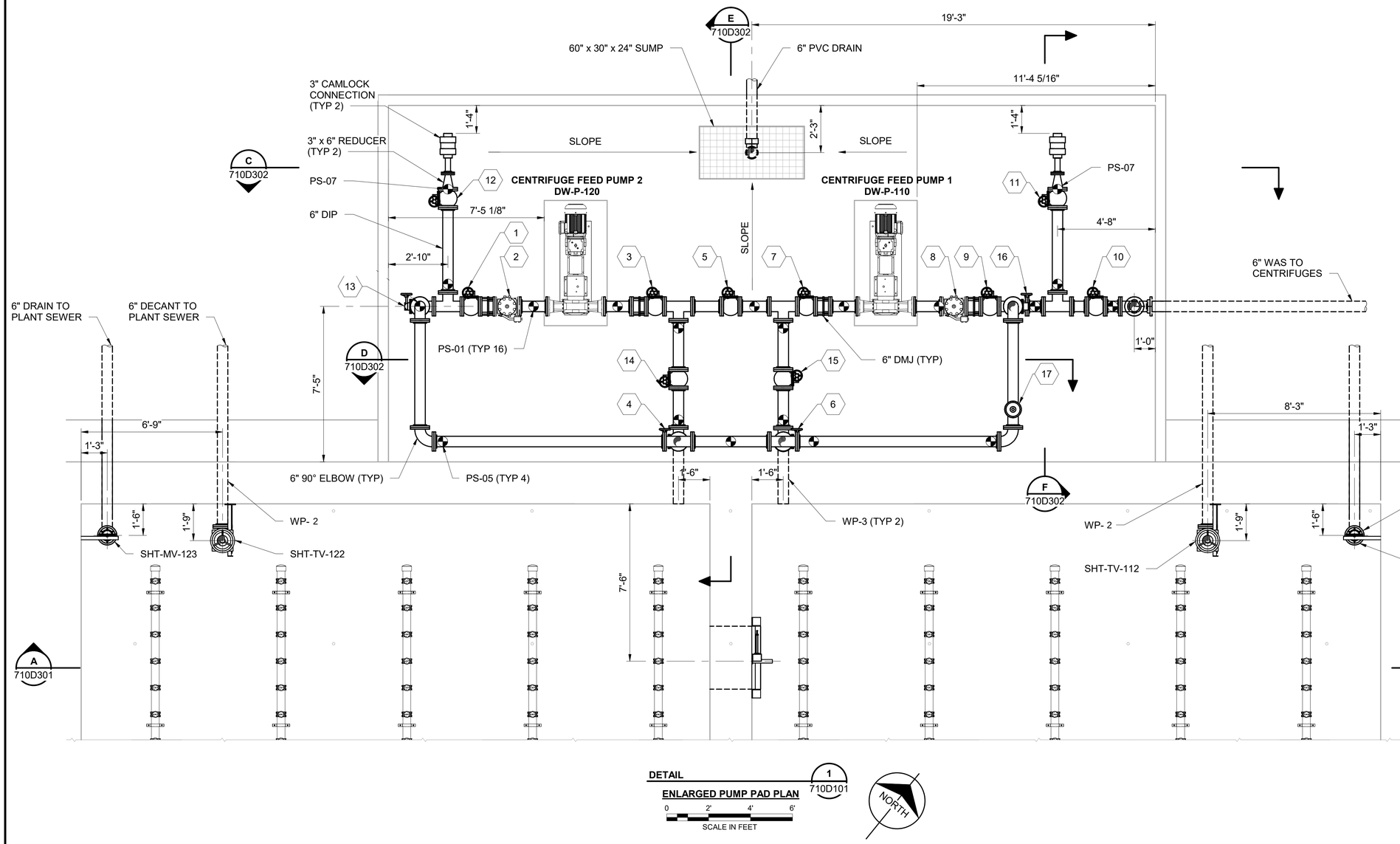
THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY
WAS HOLDING TANK PLAN

project	contract
187533	

drawing **710D101** – rev. **0**

sheet of sheets
file



VALVE KEY:

1. 6" PLUG VALVE DW-PV-124
2. 6" CHECK VALVE DW-CV-123
3. 6" PLUG VALVE DW-PV-122
4. 6" PLUG VALVE DW-PV-127
5. 6" PLUG VALVE DW-PV-101
6. 6" PLUG VALVE DW-PV-117
7. 6" PLUG VALVE DW-PV-112
8. 6" CHECK VALVE DW-CV-113
9. 6" PLUG VALVE DW-PV-114
10. 6" PLUG VALVE DW-PV-102
11. 6" PLUG VALVE DW-PV-115
12. 6" PLUG VALVE DW-PV-125
13. 6" PLUG VALVE DW-PV-126
14. 6" PLUG VALVE DW-PV-121
15. 6" PLUG VALVE DW-PV-111
16. 6" PLUG VALVE DW-PV-116
17. 2" COMBO AIR/VACUUM RELIEF VALVE DW-ARV-101

DETAIL 1 / 710D101

ENLARGED PUMP PAD PLAN

0 2' 4' 6'

SCALE IN FEET

NORTH

no.	date	by	ckd	description
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BURNS McDONNELL
6200 BRIDGE POINT PARKWAY,SUITE 400
AUSTIN, TX 78730
Burns & McDonnell Engineering Co, Inc.
FIRM Reg. No. F-845

date	detailed
FEBRUARY 13, 2026	C. GLEASON
designed	checked
A. HUMMEL	P. WARD

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY
ENLARGED PUMP PAD PLAN

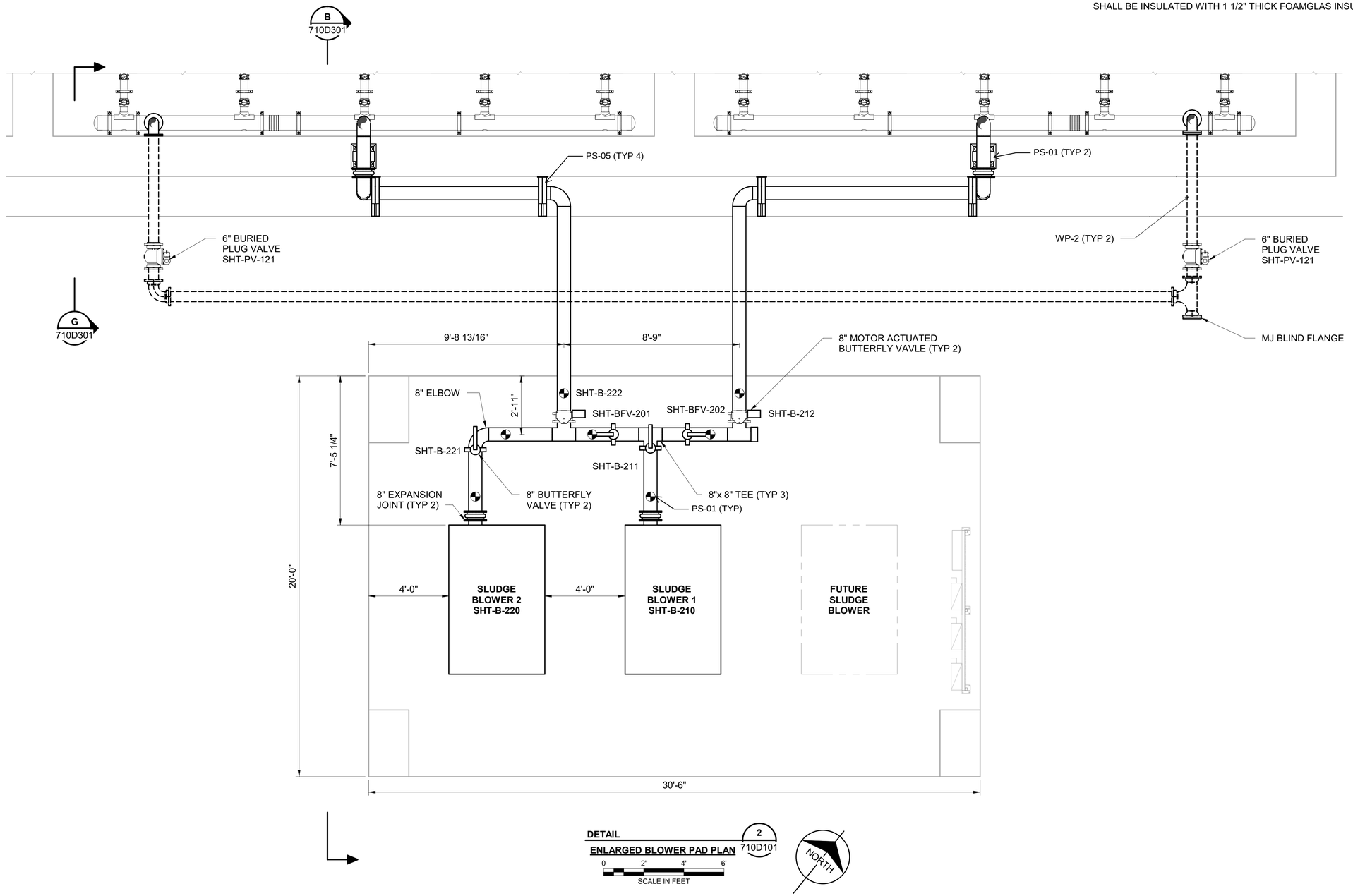
project	contract
187533	

drawing **710D102** rev. **0**

sheet of sheets

file

NOTES:
1. AIR PIPING FROM BLOWER PAD UNTIL TOP OF THE FLEX TANK WALL SHALL BE INSULATED WITH 1 1/2" THICK FOAMGLAS INSULATION.



DETAIL 2 / 710D101
ENLARGED BLOWER PAD PLAN

0 2' 4' 6'
SCALE IN FEET

NORTH

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6200 BRIDGE POINT PARKWAY,SUITE 400
AUSTIN, TX 78730
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A. HUMMEL	P. WARD

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY
ENLARGED BLOWER PAD PLAN

project	contract
187533	

drawing **710D103** – rev. **0**

sheet of sheets
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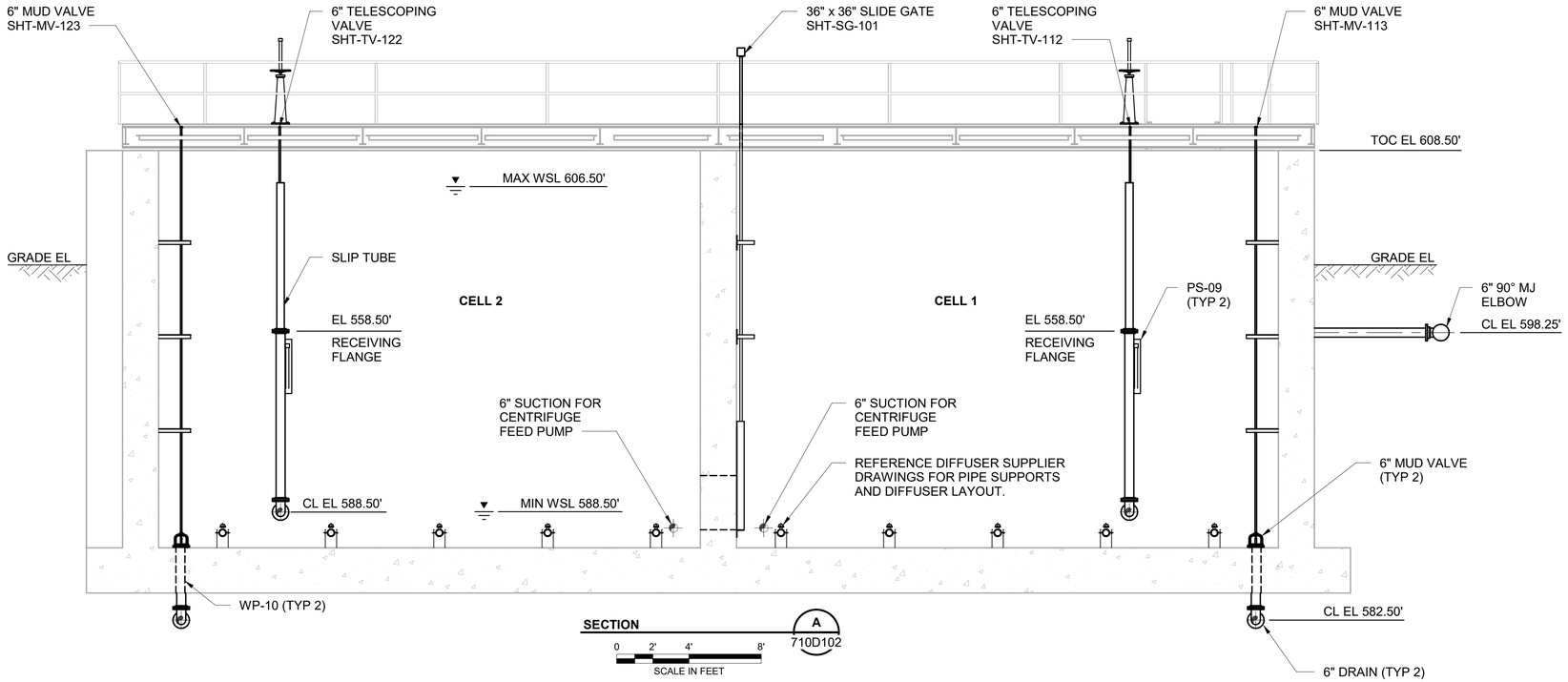
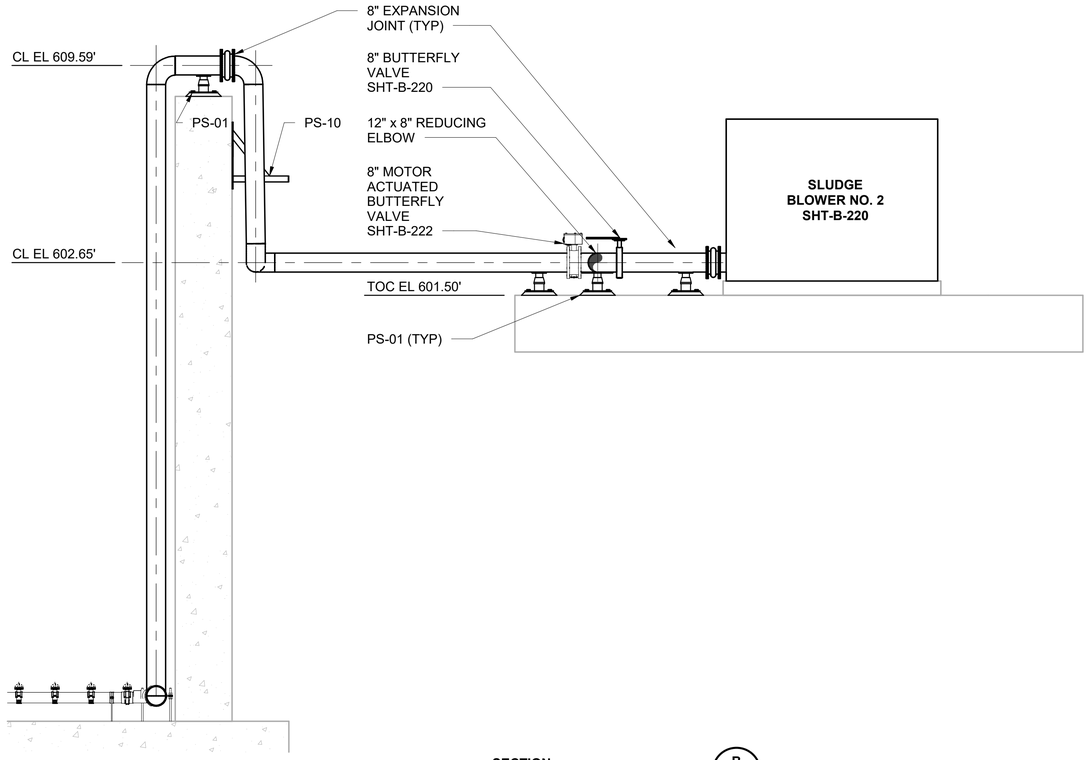


SECTION A 710D102

0 2' 4' 8'

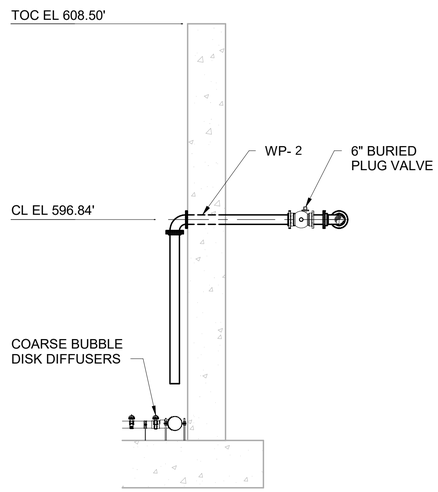
SCALE IN FEET



SECTION B 710D103

0 2' 4' 6'

SCALE IN FEET



SECTION G 710D103

0 2' 4' 8'

SCALE IN FEET

GENERAL NOTES:

1. A MANUAL ACTUATOR WITH CRANK-OPERATED GEAR BOX AND AN EXTENDED PINION SHAFT TO THE CRANK SHALL BE PROVED FOR SHT-SG-101. CRANK SHALL BE ACCESSIBLE FROM WALKWAY.
2. INTERMEDIATE STEM GUIDE SUPPORTS FOR THE SLIDE GATES, TELESCOPING VALVES, AND MUD VALVES SHALL BE DESIGNED AND PROVIDED BY SUPPLIER. INTERMEDIATE SUPPORTS SHALL BE PROVIDED AT MAXIMUM SPACING DISTANCE OF 5-FT.

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6200 BRIDGE POINT PARKWAY,SUITE 400
AUSTIN, TX 78730
Burns & McDonnell Engineering Co, Inc.
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date	detailed
FEBRUARY 13, 2026	C. GLEASON
designed	checked
A. HUMMEL	P. WARD

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY
WAS HOLDING TANK SECTIONS
SHEET 1

project	contract
187533	

drawing **710D301** – rev. **0**

sheet of sheets

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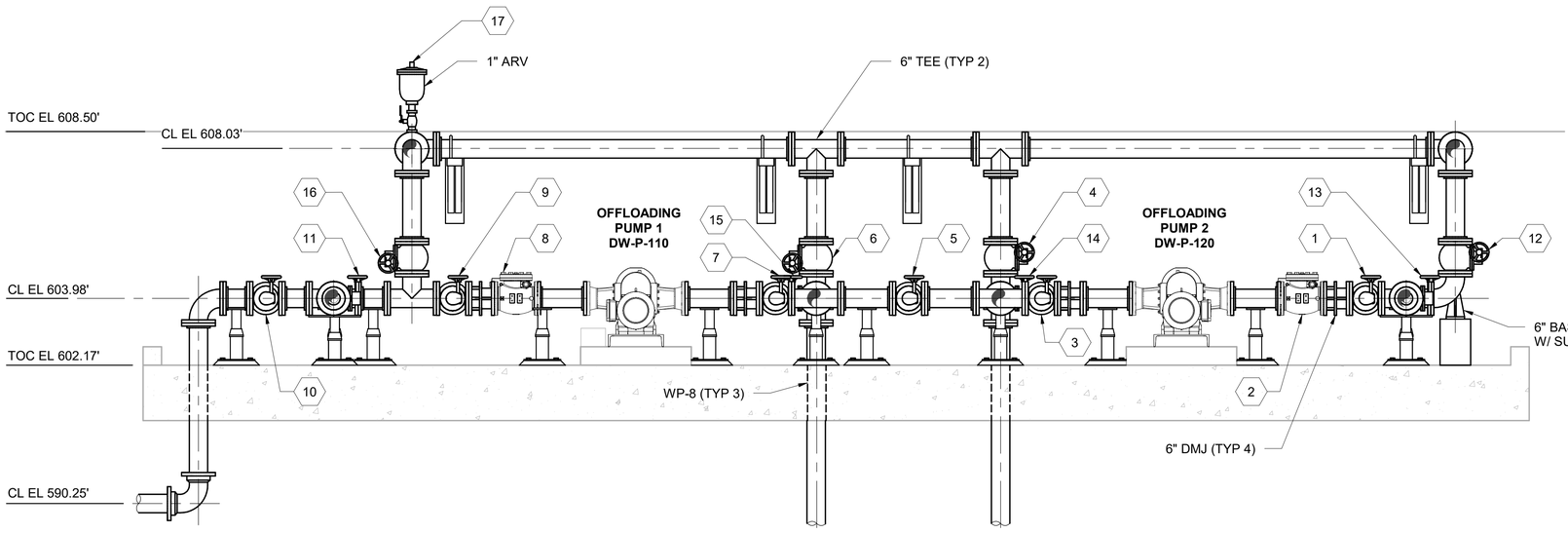


SECTION C 710D102

0 1' 2' 4'

SCALE IN FEET

SECTION E 710D102

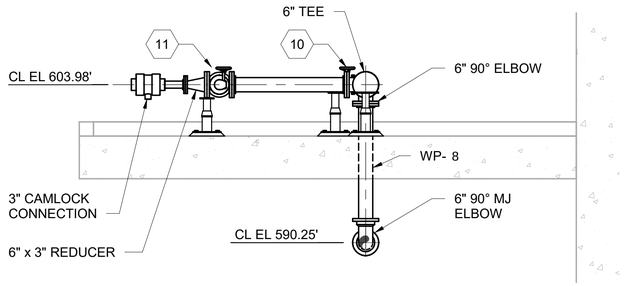
0 2' 4' 6'

SCALE IN FEET

SECTION D 710D102

0 2' 4' 8'

SCALE IN FEET



SECTION F 710D102

0 2' 4' 6'

SCALE IN FEET

VALVE KEY:

1. 6" PLUG VALVE DW-PV-124
2. 6" CHECK VALVE DW-CV-123
3. 6" PLUG VALVE DW-PV-122
4. 6" PLUG VALVE DW-PV-127
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15. 6" PLUG VALVE DW-PV-111
16. 6" PLUG VALVE DW-PV-116
17. 2" AIR RELIEF VALVE DW-ARV-101

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FEBRUARY 13, 2026	C. GLEASON
designed	checked
A. HUMMEL	P. WARD

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY

WAS HOLDING TANK SECTIONS
SHEET 2

project	contract
187533	

drawing **710D302** – rev. **0**

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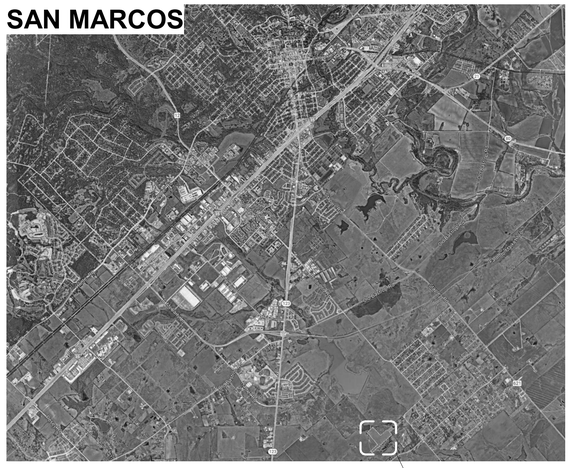

VICINITY MAP
NOT TO SCALE

PROJECT LOCATION

THE CITY OF
SAN MARCOS

PROJECT LOCATION

LOCATION MAP
NOT TO SCALE

City of San Marcos

FLEMING PASS ROADWAY IMPROVEMENTS

FLEMING PASS ROAD
San Marcos, TX 78666

GMP 1/2: ISSUED FOR BID

APRIL 6th, 2026

BMcD Project No. 187533

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BURNS McDONNELL
6200 BRIDGE POINT PARKWAY, SUITE 400
AUSTIN, TX 78730
Burns & McDonnell Engineering Co, Inc.
FIRM Reg. No. F-845

FM 1978 WATER RECLAMATION FACILITY

COVER

Drawing 000G001

CONTRACT DRAWINGS

GENERAL DRAWINGS:

DRAWING NO	DRAWING TITLE
000G001	COVER
000G002	INDEX
000G004	GENERAL LEGEND

TRANSPORTATION

DRAWING NO	DRAWING TITLE
001C001-1	TRAFFIC CONTROL PLAN SEQUENCE OF CONSTRUCTION
001C001-2	TRAFFIC CONTROL PLAN PHASE 1 STEPS 1 & 2
001C001-3	TRAFFIC CONTROL PLAN PHASE 2 STEPS 1 & 2
006C5XX-1	CIVIL TxDOT REF STANDARD DETAIL SHEET X
006C5XX-2	CIVIL TxDOT REF STANDARD DETAIL SHEET X
006C5XX-3	CIVIL TxDOT REF STANDARD DETAIL SHEET X
006C5XX-4	CIVIL TxDOT REF STANDARD DETAIL SHEET X
006C5XX-5	CIVIL TxDOT REF STANDARD DETAIL SHEET X
006C5XX-6	CIVIL TxDOT REF STANDARD DETAIL SHEET X
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006C5XX-12	CIVIL TxDOT REF STANDARD DETAIL SHEET X
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006C5XX-14	CIVIL TxDOT REF STANDARD DETAIL SHEET X
006C5XX-15	CIVIL TxDOT REF STANDARD DETAIL SHEET X
001C001-4	FLEMING PASS TYPICAL SECTIONS
001C001-5	FLEMING PASS HORIZONTAL ALIGNMENT DATA
001C001-6	FLEMING PASS PLAN & PROFILE STA 18+00
001C001-7	FLEMING PASS PLAN & PROFILE STA 18+00 TO END
001C001-8	FLEMING PASS DRIVEWAY PLAN AND PROFILE
006C5XX-16	CIVIL COSM REF STANDARD DETAIL SHEET X
006C5XX-17	CIVIL COSM REF STANDARD DETAIL SHEET X
006C5XX-18	CIVIL COSM REF STANDARD DETAIL SHEET X
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006C5XX-21	CIVIL COSM REF STANDARD DETAIL SHEET X
006C5XX-22	CIVIL COSM REF STANDARD DETAIL SHEET X
001C001-9	FLEMING PASS CROSS SECTIONS BEGIN TO STA 20+50
001C001-10	FLEMING PASS CROSS SECTIONS STA 21+00 TO END
001C001-11	EXISTING OVERALL DRAINAGE AREA MAP
001C001-12	PROPOSED OVERALL DRAINAGE AREA MAP
001C001-13	CULVERT 1B PLAN AND PROFILE
001C001-14	CULVERT 2B-1 PLAN AND PROFILE
001C001-15	CULVERT 2B-2 PLAN AND PROFILE
001C001-16	CUVLERT 2B-3 PLAN AND PROFILE
006C5XX-23	CIVIL TxDOT REF STANDARD DETAIL SHEET X
006C5XX-24	CIVIL TxDOT REF STANDARD DETAIL SHEET X
006C5XX-25	CIVIL TxDOT REF STANDARD DETAIL SHEET X
006C5XX-26	CIVIL TxDOT REF STANDARD DETAIL SHEET X
006C5XX-27	CIVIL TxDOT REF STANDARD DETAIL SHEET X
006C5XX-28	CIVIL TxDOT REF STANDARD DETAIL SHEET X

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1	04/06/26	AJH	AJH	CIVIL SHEETS ADDED

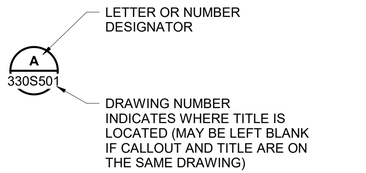
BURNS McDONNELL
6200 BRIDGE POINT PARKWAY, SUITE 400
AUSTIN, TX 78730
Burns & McDonnell Engineering Co, Inc.
FIRM Reg. No. F-845

FM 1978 WATER RECLAMATION FACILITY

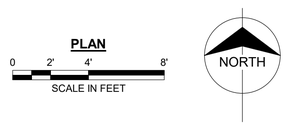
Index I

Drawing 000G002

GENERAL SYMBOLOGY



SECTION, DETAIL, AND ELEVATION SYMBOL IDENTIFIERS



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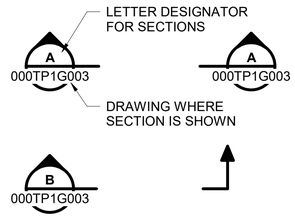

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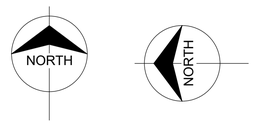

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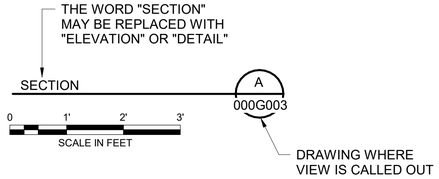

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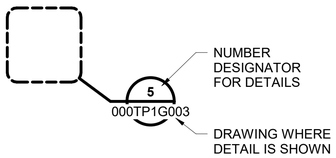

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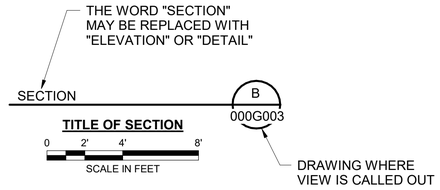
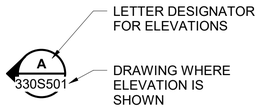


SECTION, DETAIL, OR ELEVATION TITLE WITH ADDITIONAL TITLE TEXT EXAMPLE



ELEVATION CALLOUT EXAMPLE

DENOTES A REVISION ON A DRAWING

REVISION TRIANGLES

DRAWING NUMBERING CONVENTION

DRAWING NUMBERING
NUMBERING FORMAT: WWWXYZZ
- WWW = STRUCTURE/AREA DESIGNATION
- X = DISCIPLINE DESIGNATOR
- Y = SHEET TYPE DESIGNATOR
- ZZ = SHEET NUMBER

STRUCTURE / AREA DESIGNATION

000	COVER - INDEX - DISCIPLINE LEGENDS
002	GENERAL DESIGN CRITERIA
004	P&ID's
006	STANDARD DETAILS
010	SITE PLANNING
150	TEMPORARY PUMPING
160	TEMPORARY STORAGE AND OFFLOADING
200	INFLUENT PUMP STATION
310	HEADWORKS
320	ODOR CONTROL
410	BNR SPLITTER
420	BNR BASIN
430	BLOWER PAD
440	ELECTRICAL BUILDING
510	FINAL CLARIFIER SPLITTER
520	FINAL CLARIFIERS
530	RAS-WAS PUMP STATION
540	CHEMICAL FEED
610	FILTERS, UV, & NPW
620	EFFLUENT STRUCTURE
710	WAS HOLDING TANK
720	DEWATERING BUILDING
800	ADMIN

DISCIPLINE DESIGNATOR AND DISCIPLINE DRAWING ORDER

G	GENERAL
X	DEMOLITION
C	CIVIL
A	ARCHITECTURAL
S	STRUCTURAL
DI	PROCESS & INSTRUMENTATION
D	PROCESS
M	MECHANICAL
P	PLUMBING
F	FIRE PROTECTION
E	ELECTRICAL

DRAWING TYPE DESIGNATOR

0	GENERAL
1	PLANS
2	ELEVATIONS
3	SECTIONS
4	ENLARGED PLANS, ELEVATIONS, OR SECTIONS THAT ARE NOT DETAILS
5	DETAILS
6	SCHEDULES AND DIAGRAMS (P&IDs AND PFDs)
7	PROFILES
8	3D REPRESENTATIONS (ISOMETRIC, PERSPECTIVE, ETC.)

EXAMPLE:
BNR BASIN #3, Temporary Pump Package and Haul 1, Structural Demolition Sections, Drawing 01

DRAWING NUMBER: 330 TP1 S X 4 01
- 2-DIGIT SHEET NUMBER
- SHEET TYPE DESIGNATOR
- DEMOLITION (IF APPLICABLE
- 1- OR 2-CHARARCTER DISCIPLINE DESIGNATOR
- TEMP PACKAGE IDENTIFIER (IF APPLICABLE)
- 3-DIGIT STRUCTURE/AREA DESIGNATOR

FINAL EXAMPLE: 330TP1SX401

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BURNS McDONNELL
6200 BRIDGE POINT PARKWAY,SUITE 400
AUSTIN, TX 78730
Burns & McDonnell Engineering Co, Inc.
FIRM Reg. No. F-845

date: SEPTEMBER 19, 2025	detailed: R. SCOLES
designed: R. SCOLES	checked: A. HUMMEL

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY
GENERAL LEGEND

project: 187533	contract:

drawing: **000G004** – rev: **0**

sheet of sheets

file 187533_003_G_R22.rvt

FLEMING PASS – SEQUENCE OF CONSTRUCTION

PHASE 1 STEP 1

1. FOLLOW THE STORMWATER POLLUTION PREVENTION PLAN (SW3P) TO INSTALL TEMPORARY EROSION CONTROL DEVICES.
2. LOCATE AND MARK EXISTING UTILITIES WITHIN THE RIGHT-OF-WAY (ROW). CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE LOCATING OF UTILITIES WITHIN THE PROJECT LIMITS.
3. PROVIDE CONSTRUCTION STAKING TO ESTABLISH THE ROW, EASEMENTS, ALIGNMENT, GRADES, AND LAYOUT FOR THE NEW ROADWAY, DRAINAGE STRUCTURES, AND ALL OTHER IMPROVEMENTS AS SHOWN ON THE PLANS.
4. CLEAR VEGETATION WITHIN FLEMING PASS ROW WHERE NECESSARY FOR CONSTRUCTION.
5. INSTALL TEMPORARY CORRUGATED METAL PIPE (CMP) EXTENSIONS ON THE NORTHEAST SIDE OF EXISTING CULVERTS TO MAINTAIN CULVERT DRAINAGE AT LOCATIONS OF TEMPORARY ROAD WIDENING.
6. CONSTRUCT TEMPORARY AGGREGATE ROADWAY WIDENING USING COMPACTED FLEX BASE MATERIAL AS SPECIFIED IN THE PLANS. COORDINATE WITH ADJACENT PROPERTY OWNERS PRIOR TO AND DURING CONSTRUCTION ACTIVITIES ON FLEMING PASS TO ENSURE ALL PROPERTY OWNERS REMAIN INFORMED OF THE CONSTRUCTION SCHEDULE.
7. FOLLOW TEXAS DEPARTMENT OF TRANSPORTATION (TXDOT) TRAFFIC CONTROL PLAN (TCP) STANDARD TCP (1-2)-18 DURING ONGOING CONSTRUCTION ACTIVITIES TO ENSURE ACCESS FOR LOCAL TRAFFIC IS MAINTAINED ON FLEMING PASS AT ALL TIMES.

PHASE 1 STEP 2

1. INSTALL TEMPORARY TRAFFIC CONTROL DEVICES AS PER THE PHASE 1 PLANS. ENSURE A MINIMUM 10 FT. WIDE GRAVEL ROAD REMAINS OPEN AND ACCESSIBLE TO THE PUBLIC AT ALL TIMES.
2. PRIOR TO COMMENCING CONSTRUCTION, COORDINATE SCHEDULING WITH THE PROPERTY OWNER. CONSTRUCT THE NEW CATTLE GUARD ON THE NORTH END OF FLEMING PASS. CONSTRUCT NEW FENCING TO CONNECT TO THE ENDS OF THE CATTLE GUARD. INSTALL THE NEW CATTLE GUARD AT A TIME THAT IS LEAST DISRUPTIVE AND AGREEABLE WITH THE PROPERTY OWNER. ENSURE THAT THE FULL PROPERTY LIMITS REMAIN SECURELY FENCED AT ALL TIMES WHILE CATTLE OR OTHER LIVESTOCK ARE LOCATED ON THE PROPERTY.
3. PREPARE THE SUBGRADE FOR THE SOUTH/WEST HALF OF THE ROADWAY. THIS SHALL INCLUDE SCARIFYING AND RE-COMPACTING THE SUBGRADE TO THE DENSITY SPECIFIED IN THE PROJECT PLANS.
4. CONSTRUCT THE SOUTH/WEST HALF OF THE NEW FLEMING PASS ROADWAY, INCLUDING WEST HALVES OF NEW DRAINAGE STRUCTURES. ENSURE THAT NEW DRAINAGE STRUCTURES CONNECT TO EXISTING DRAINAGE STRUCTURES TO MAINTAIN POSITIVE DRAINAGE.
5. OBTAIN WRITTEN APPROVALS FROM TXDOT AREA OFFICE PRIOR TO MOBILIZING OR SETTING TRAFFIC CONTROL INSIDE TXDOT ROW; CONFIRM LEAD TIME REQUIREMENTS WITH THE TXDOT AREA OFFICE. CONSTRUCT THE SOUTH/WEST HALF OF THE DRIVEWAY INTERSECTION AT FM 1978, STARTING WITH INSTALLATION OF THE 3X2 REINFORCED BOX CULVERT (RBC). CONSTRUCTION OF THE INTERSECTION PAVEMENT SHALL BE COMPLETED UTILIZING HIGH EARLY STRENGTH (HES) CONCRETE (TXDOT ITEM 530-7007). UTILIZE TXDOT TCP STANDARD TCP (2-2b)-18 TO RESTRICT FM 1978 TO ONE LANE WHILE ACTIVE CONSTRUCTION ACTIVITIES ARE ONGOING WITH FM 1978 RIGHT-OF-WAY. REMOVE TRAFFIC CONTROL SIGNS AND DEVICES FROM TCP (2-2b)-18 STANDARD AND REOPEN FM 1978 TO TWO LANES IMMEDIATELY AFTER THE CONCRETE DRIVEWAY PAVEMENT HAS BEEN PLACED.

PHASE 2 STEP 1

1. INSTALL TEMPORARY TRAFFIC CONTROL DEVICES AS PER THE PHASE 2 PLANS. SHIFT FLEMING PASS TRAFFIC TO THE SOUTH/WEST HALF CONSTRUCTED IN PHASE 1.
2. CONSTRUCT THE EAST/NORTH HALF OF THE DRIVEWAY INTERSECTION AT FM 1978, STARTING WITH INSTALLATION OF THE EAST END OF THE 3X2 RBC. CONSTRUCTION OF THE DRIVEWAY/INTERSECTION PAVEMENT SHALL BE COMPLETED UTILIZING (HES) CONCRETE TXDOT ITEM 530-7007). UTILIZE TXDOT TCP STANDARD TCP (2-2)-18 TO RESTRICT FM 1978 TO ONE LANE WHILE ACTIVE CONSTRUCTION ACTIVITIES ARE ONGOING WITH FM 1978 RIGHT-OF-WAY. REMOVE TRAFFIC CONTROL SIGNS AND DEVICES FROM TCP (2-2)-18 STANDARD AND REOPEN FM 1978 TO TWO LANES IMMEDIATELY AFTER THE CONCRETE DRIVEWAY PAVEMENT HAS BEEN PLACED. RESTRICT FLEMING PASS TRAFFIC TO "RIGHT-OUT" AND "LEFT-IN" ONLY DURING THE CONSTRUCTION OF THE EAST HALF OF THE DRIVEWAY UNTIL 24 HOURS AFTER THE HES DRIVEWAY PAVEMENT HAS BEEN PLACED. AFTER 24 HOURS, IMMEDIATELY ADJUST CHANNELIZING DEVICES, REMOVE REGULATORY TURN SIGNS, AND OPEN THE PAVEMENT TO TRAFFIC.
3. REMOVE THE EXISTING CATTLE GUARD AT THE NORTH END OF FLEMING PASS (STA 11+20).
4. REMOVE EXISTING GRAVEL ROAD SURFACE AND TEMPORARY AGGREGATE ROADWAY WIDENING ON THE NORTH/EAST SIDE, INCLUDING TEMPORARY CMP EXTENSIONS.
5. PREPARE THE SUBGRADE FOR THE NORTH/EAST SIDE OF THE ROADWAY. THIS SHALL INCLUDE SCARIFYING AND RE-COMPACTING THE SUBGRADE TO THE DENSITY SPECIFIED IN THE PROJECT PLANS.
6. CONSTRUCT THE NORTH/EAST HALF OF THE NEW FLEMING PASS ROADWAY, INCLUDING EAST HALVES OF NEW DRAINAGE STRUCTURES FROM STA 11+95 TO STA 24+70.
7. CONSTRUCT DRIVEWAY 1. ENSURE ACCESS TO AND FROM HOMES ON THE EXISTING PRIVATE GRAVEL DRIVE IS MAINTAINED AT ALL TIMES.

PHASE 2 STEP 2

1. OPEN DRIVEWAY 1 TO TRAFFIC. CLOSE AND REMOVE THE TEMPORARY AGGREGATE ROADWAY CONNECTION TO THE EXISTING PRIVATE GRAVEL DRIVE.
2. CONSTRUCT THE NORTH/EAST HALF OF THE NEW FLEMING PASS ROADWAY, INCLUDING NORTH/EAST HALVES OF NEW DRAINAGE STRUCTURES FROM STA 10+13 TO STA 11+95.
3. REMOVE TEMPORARY TRAFFIC CONTROL DEVICES AND OPEN THE FULL WIDTH OF FLEMING PASS TO TRAFFIC.
4. COMPLETE FINAL GRADING AND SITE RESTORATION, AND PLACE PERMANENT SEEDING AND SOIL RETENTION BLANKETS WITHIN THE FULL LIMITS OF DISTURBED GROUND.
5. REMOVE SILT FENCE AND ROCK BERMS FROM THE SITE WHEN THE ROADWAY ROW HAS BEEN STABILIZED.

no.	date	by	ckd	description
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6200 BRIDGE POINT PARKWAY, SUITE 400
AUSTIN, TX 78730
512-872-7130
Burns & McDonnell Engineering Co., Inc.
Firm Reg. No. F-845

date	detailed
4/3/2026	J. GARCIA
designed	checked
D. WILLIAMS	K. KOOIMAN

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY
TRAFFIC CONTROL PLAN
SEQUENCE OF CONSTRUCTION

project	contract
187533	

drawing 001C001 — rev. 0

sheet X of X sheets

file 187533_XXXCXXX.DGN

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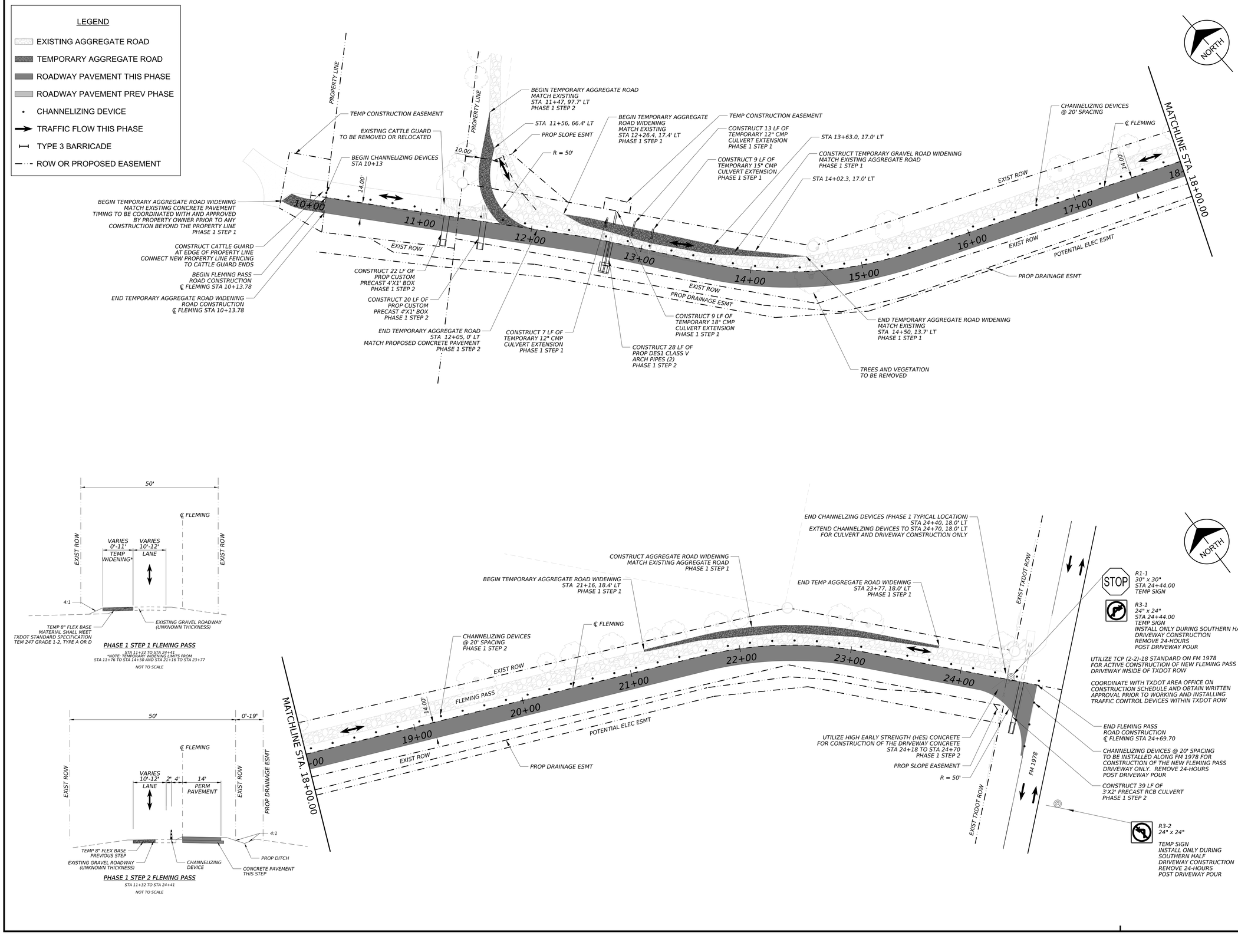

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0 40' 80'
HORIZONTAL SCALE IN FEET

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date	detailed
4/3/2026	J. GARCIA
designed	checked
D. WILLIAMS	K. KOOIMAN

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY

TRAFFIC CONTROL PLAN
PHASE 1 STEPS 1 & 2

project	contract
187533	

drawing 001C001 — rev. 0

sheet X of X sheets

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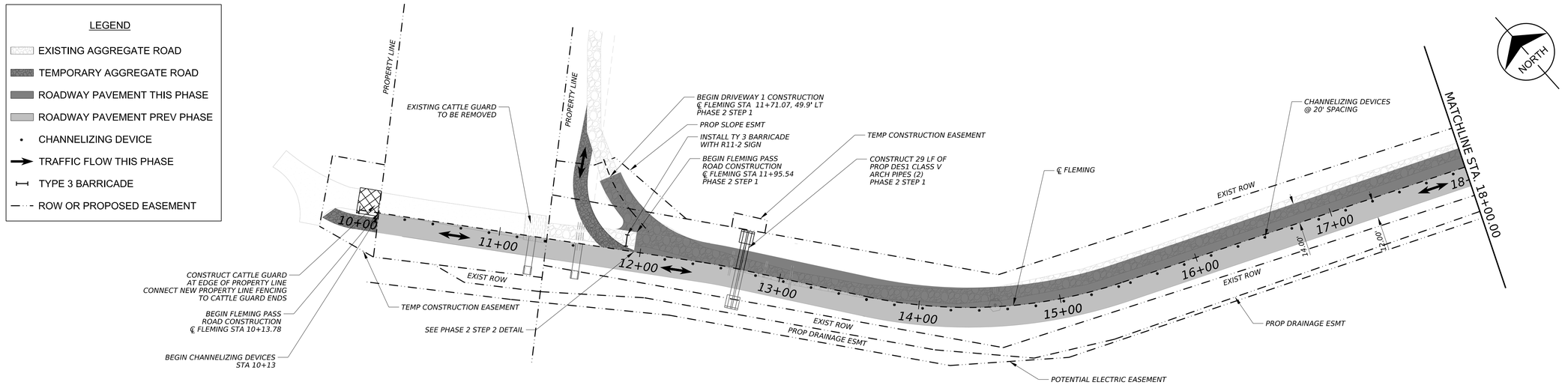
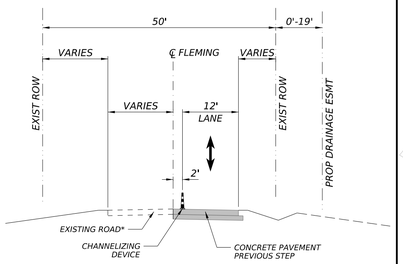


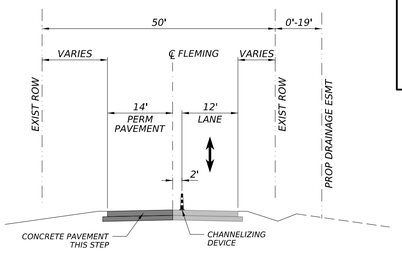


PHASE 2 STEP 1 FLEMING PASS

STA 10+13 TO STA 11+95

*NOTE: CONCRETE FROM STA 10+13 TO STA 11+17; CATTLE GUARD FROM STA 11+17 TO STA 11+32; GRAVEL FROM STA 11+32 TO STA 11+95

NOT TO SCALE



PHASE 2 STEP 2 FLEMING PASS

STA 10+13 TO STA 11+95

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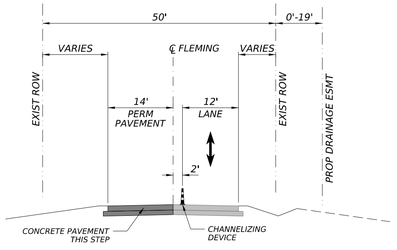

PHASE 2 STEPS 1 AND 2 FLEMING PASS

STA 11+95 TO STA 24+41

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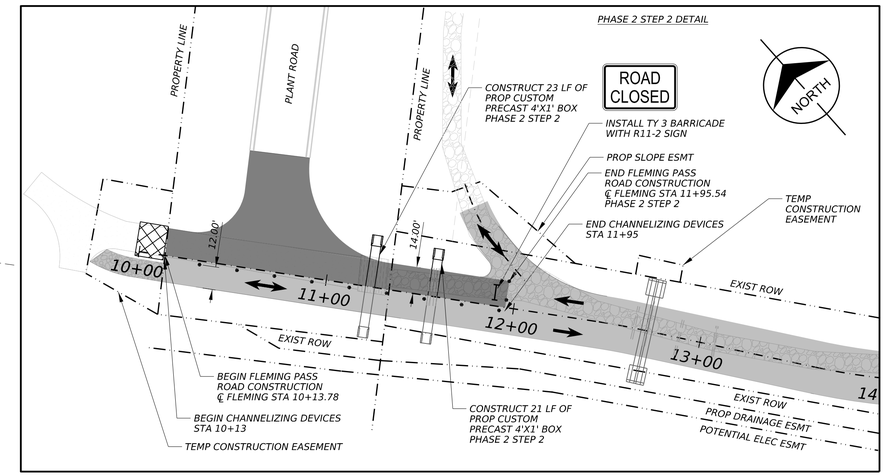

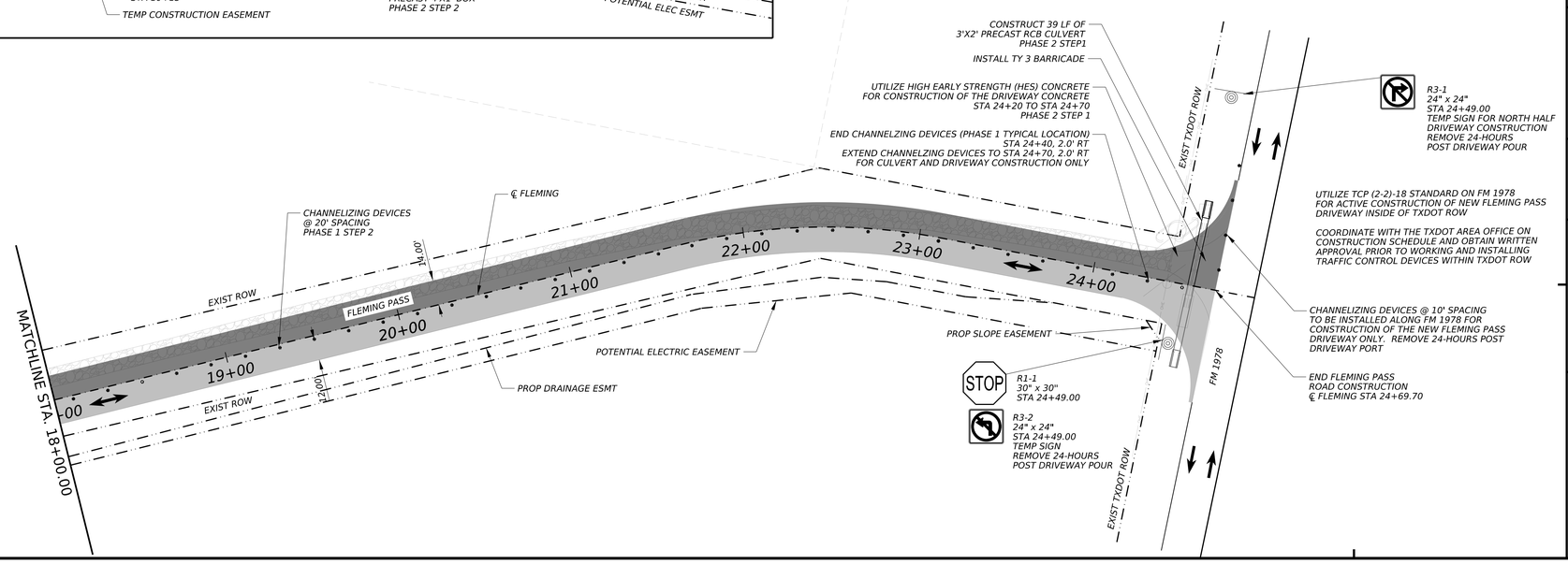

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0 40' 80'

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AUSTIN, TX 78730
512-872-7130
Burns & McDonnell Engineering Co., Inc.
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date	detailed
4/3/2026	J. GARCIA
designed	checked
D. WILLIAMS	K. KOOIMAN

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY

TRAFFIC CONTROL PLAN
PHASE 2 STEPS 1 & 2

project	contract
187533	

drawing 001C001 — rev. 0

sheet X of X sheets

file 187533_XXXCXXX.DGN

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BARRICADE AND CONSTRUCTION (BC) STANDARD SHEETS GENERAL NOTES:

1. The Barricade and Construction Standard Sheets (BC sheets) are intended to show typical examples for placement of temporary traffic control devices, construction pavement markings, and typical work zone signs. The information contained in these sheets meet or exceed the requirements shown in the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD).
2. The development and design of the Traffic Control Plan (TCP)is the responsibility of the Engineer.
3. The Contractor may propose changes to the TCP that are signed and sealed by a licensed professional engineer for approval. The Engineer may develop, sign and seal Contractor proposed changes.
4. The Contractor is responsible for installing and maintaining the traffic control devices as shown in the plans. The Contractor may not move or change the approximate location of any device without the approval of the Engineer.
5. Geometric design of lane shifts and detours should, when possible, meet the applicable design criteria contained in manuals such as the American Association of State Highway and Transportation Officials (AASHTO), "A Policy on Geometric Design of Highways and Streets," the TxDOT "Roadway Design Manual" or engineering judgment.
6. When projects abut, the Engineer(s) may omit the END ROAD WORK, TRAFFIC FINES DOUBLE, and other advance warning signs if the signing would be redundant and the work areas appear continuous to the motorists. If the adjacent project is completed first, the Contractor shall erect the necessary warning signs as shown on these sheets, the TCP sheets or as directed by the Engineer. The BEGIN ROAD WORK NEXT X MILES sign shall be revised to show appropriate work zone distance.
7. The Engineer may require duplicate warning signs on the median side of divided highways where median width will permit and traffic volumes justify the signing.
8. All signs shall be constructed in accordance with the details found in the "Standard Highway Sign Designs for Texas," latest edition. Sign details not shown in this manual shall be shown in the plans or the Engineer shall provide a detail to the Contractor before the sign is manufactured.
9. The temporary traffic control devices shown in the illustrations of the BC sheets are examples. As necessary, the Engineer will determine the most appropriate traffic control devices to be used.
10. Where highway construction or maintenance work is being undertaken, other than mobile operations as defined by the Texas Manual on Uniform Traffic Control Devices, CSJ limit signs are required. CSJ limit signs are shown on BC(2). The OBEY WARNING SIGNS STATE LAW sign, STAY ALERT TALK OR TEXT LATER and the WORK ZONE TRAFFIC FINES DOUBLE sign with plaque shall be erected in advance of the CSJ limits. The BEGIN ROAD WORK NEXT X MILES, CONTRACTOR and END ROAD WORK signs shall be erected at or near the CSJ limits. For mobile operations, CSJ limit signs are not required.
11. Traffic control devices should be in place only while work is actually in progress or a definite need exists.
12. The Engineer has the final decision on the location of all traffic control devices.
13. Inactive equipment and work vehicles, including workers' private vehicles must be parked away from travel lanes. They should be as close to the right-of-way line as possible, or located behind a barrier or guardrail, or as approved by the Engineer.

WORKER SAFETY NOTES:

1. Workers on foot who are exposed to traffic or to construction equipment within the right-of-way shall wear high-visibility safety apparel meeting the requirements of ISEA "American National Standard for High-Visibility Apparel," or equivalent revisions, and labeled as ANSI 107-2004 standard performance for Class 2 or 3 risk exposure. Class 3 garments should be considered for high traffic volume work areas or night time work.
2. Except in emergency situations, flagger stations shall be illuminated when flagging is used at night.

COMPLIANT WORKZONE TRAFFIC CONTROL DEVICES

1. Only pre-qualified products shall be used. The "Compliant Work Zone Traffic Control Devices List" (CWZTCD) describes pre-qualified products and their sources.
2. Work zone traffic control devices shall be compliant with the Manual for Assessing safety Hardware (MASH).

THE DOCUMENTS BELOW CAN BE FOUND ON-LINE AT http://www.txdot.gov
COMPLIANT WORK ZONE TRAFFIC CONTROL DEVICES LIST (CWZTCD)
DEPARTMENTAL MATERIAL SPECIFICATIONS (DMS)
MATERIAL PRODUCER LIST (MPL)
ROADWAY DESIGN MANUAL - SEE "MANUALS (ONLINE MANUALS)"
STANDARD HIGHWAY SIGN DESIGNS FOR TEXAS (SHSD)
TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD)
TRAFFIC ENGINEERING STANDARD SHEETS

SHEET 1 OF 12

Texas Department of Transportation — Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION GENERAL NOTES AND REQUIREMENTS

BC(1)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS				
4-03 7-13	DIST	COUNTY		SHEET NO.
9-07 8-14				
5-10 5-21				
95				

DATE:
FILE:

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Firm Reg. No. F-845

date	detailed
4/3/2026	J. GARCIA
designed	checked
D. WILLIAMS	K. KOOIMAN

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY

CIVIL
TxDOT REF STANDARD DETAIL SHEET X

project	contract
187533	

drawing 006C5XX – rev. 0

sheet of sheets

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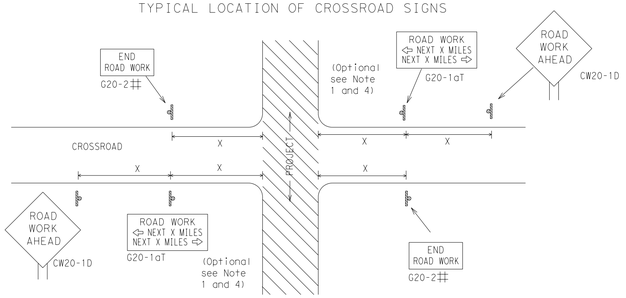
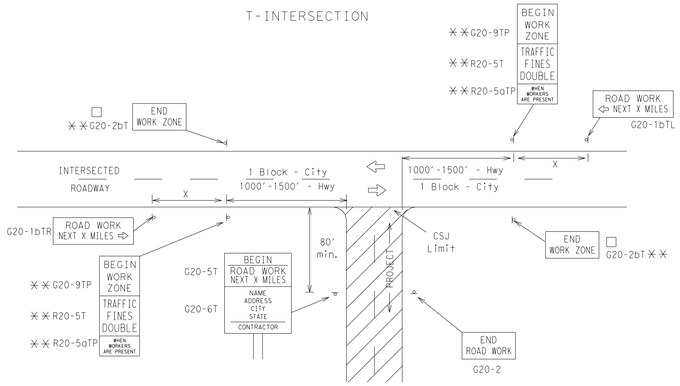
TYPICAL LOCATION OF CROSSROAD SIGNS



T-INTERSECTION



CSJ LIMITS AT T-INTERSECTION

1. The Engineer will determine the types and location of any additional traffic control devices, such as a flagger and accompanying signs, or other signs, that should be used when work is being performed at or near an intersection.
2. If construction closes the road at a T-intersection, the Contractor shall place the "CONTRACTOR NAME"(G20-6T) sign behind the Type 3 Barricades for the road closure (see BC(10) also). The "ROAD WORK NEXT X MILES" left arrow(G20-1bTL) and "ROAD WORK NEXT X MILES" right arrow (G20-1bTR)" signs shall be replaced by the detour signing called for in the plans.

TYPICAL CONSTRUCTION WARNING SIGN SIZE AND SPACING[1,5,6]

SIZE

Sign Number or Series	Conventional Road	Expressway/ Freeway
CW20[4] CW21 CW22 CW23 CW25	48" x 48"	48" x 48"
CW1, CW2, CW7, CW8, CW9, CW11, CW14	36" x 36"	48" x 48"
CW3, CW4, CW5, CW6, CW8-3, CW10, CW12	48" x 48"	48" x 48"

SPACING

Posted Speed	Sign △ Spacing "X"
MPH	Feet (Apprx.)
30	120
35	160
40	240
45	320
50	400
55	500[2]
60	600[2]
65	700[2]
70	800[2]
75	900[2]
80	1000[2]
✳	✳[3]

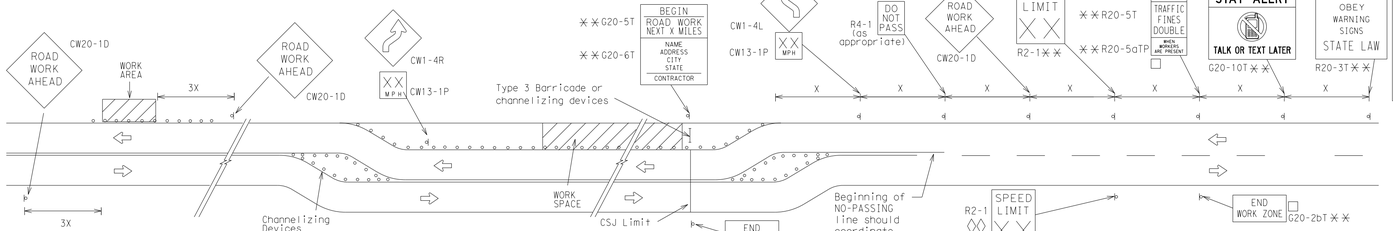
✳ For typical sign spacings on divided highways, expressways and freeways, see Part 6 of the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) typical application diagrams or TCP Standard Sheets.

△ Minimum distance from work area to first Advance Warning sign nearest the work area and/or distance between each additional sign.

GENERAL NOTES

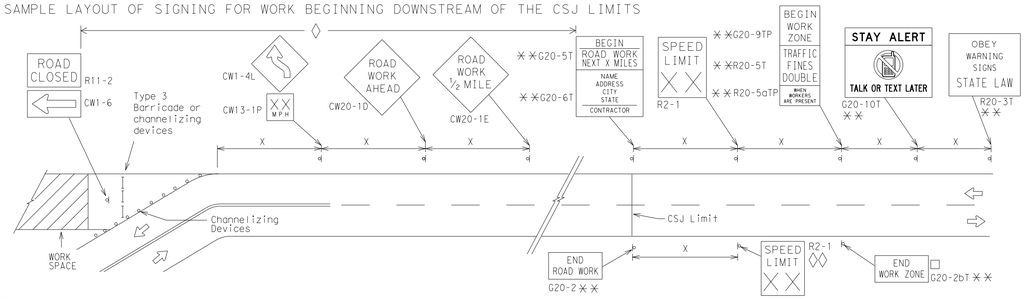
1. Special or larger size signs may be used as necessary.
2. Distance between signs should be increased as required to have 1500 feet advance warning.
3. Distance between signs should be increased as required to have 1/2 mile or more advance warning.
4. 36" x 36" "ROAD WORK AHEAD" (CW20-1D)signs may be used on low volume crossroads at the discretion of the Engineer as per TMUTCD Part 5. See Note 2 under "Typical Location of Crossroad Signs".
5. Only diamond shaped warning sign sizes are indicated.
6. See sign size listing in "TMUTCD", Sign Appendix or the "Standard Highway Sign Designs for Texas" manual for complete list of available sign design sizes.

WORK AREAS IN MULTIPLE LOCATIONS WITHIN CSJ LIMITS



When extended distances occur between minimal work spaces, the Engineer/Inspector should ensure additional "ROAD WORK AHEAD"(CW20-1D)signs are placed in advance of these work areas to remind drivers they are still within the project limits. See the applicable TCP sheets for exact location and spacing of signs and channelizing devices.

SAMPLE LAYOUT OF SIGNING FOR WORK BEGINNING DOWNSTREAM OF THE CSJ LIMITS



NOTES

The Contractor shall determine the appropriate distance to be placed on the G20-1 series signs and "BEGIN ROAD WORK NEXT X MILES"(G20-5T)sign for each specific project. This distance shall replace the "X" and shall be rounded to the nearest whole mile with the approval of the Engineer. No decimals shall be used.

□ The "BEGIN WORK ZONE"(G20-9TP) and "END WORK ZONE" (G20-2bT) shall be used as shown on the sample layout when advance signs are required outside the CSJ Limits. They inform the motorist of entering or leaving a part of the work zone lying outside the CSJ Limits where traffic fines may double if workers are present.

✳✳ CSJ limit signing is required for highway construction and maintenance work, with the exception of mobile operations.

◇ Area for placement of "ROAD WORK AHEAD" (CW20-1D)sign and other signs or devices as called for on the Traffic Control Plan.

◇◇ Contractor will install a regulatory speed limit sign at the end of the work zone.

LEGEND

⟼	Type 3 Barricade
○ ○ ○	Channelizing Devices
▬	Sign
X	See Typical Construction Warning Sign Size and Spacing chart or the TMUTCD for sign spacing requirements.

SHEET 2 OF 12

Texas Department of Transportation — *Traffic Safety Division Standard*

BARRICADE AND CONSTRUCTION PROJECT LIMIT

BC(2)-21

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9-07 8-14	DIST	COUNTY		SHEET NO.
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6200 BRIDGE POINT PARKWAY, SUITE 400
AUSTIN, TX 78730
512-872-7130
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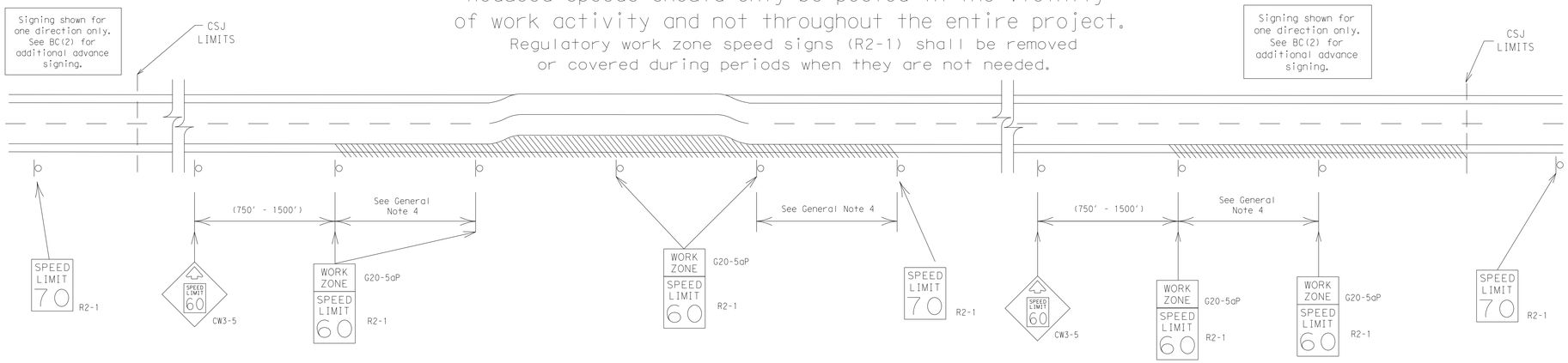
TYPICAL APPLICATION OF WORK ZONE SPEED LIMIT SIGNS

Work zone speed limits shall be regulatory, established in accordance with the "Procedures for Establishing Speed Zones," and approved by the Texas Transportation Commission, or by City Ordinance when within Incorporated City Limits.

Reduced speeds should only be posted in the vicinity of work activity and not throughout the entire project.
Regulatory work zone speed signs (R2-1) shall be removed or covered during periods when they are not needed.



GUIDANCE FOR USE:

LONG/INTERMEDIATE TERM WORK ZONE SPEED LIMITS

This type of work zone speed limit should be included on the design of the traffic control plans when restricted geometrics with a lower design speed are present in the work zone and modification of the geometrics to a higher design speed is not feasible.

Long/Intermediate Term Work Zone Speed Limit signs, when approved as described above, should be posted and visible to the motorist when work activity is present. Work activity may also be defined as a change in the roadway that requires a reduced speed for motorists to safely negotiate the work area, including:

a) rough road or damaged pavement surface
b) substantial alteration of roadway geometrics (diversions)
c) construction detours
d) grade
e) width
f) other conditions readily apparent to the driver

As long as any of these conditions exist, the work zone speed limit signs should remain in place.

SHORT TERM WORK ZONE SPEED LIMITS

This type of work zone speed limit may be included on the design of the traffic control plans when workers or equipment are not behind concrete barrier, when work activity is within 10 feet of the traveled way or actually in the traveled way.

Short Term Work Zone Speed Limit signs should be posted and visible to the motorists only when work activity is present. When work activity is not present, signs shall be removed or covered.
(See Removing or Covering on BC(4)).

GENERAL NOTES

1. Regulatory work zone speed limits should be used only for sections of construction projects where speed control is of major importance.
2. Regulatory work zone speed limit signs shall be placed on supports at a 7 foot minimum mounting height.
3. Speed zone signs are illustrated for one direction of travel and are normally posted for each direction of travel.
4. Frequency of work zone speed limit signs should be:
   40 mph and greater 0.2 to 2 miles
   35 mph and less 0.2 to 1 mile
5. Regulatory speed limit signs shall have black legend and border on a white reflective background (See "Reflective Sheeting" on BC(4)).
6. Fabrication, erection and maintenance of the"ADVANCE SPEED LIMIT"(CW3-5)sign, "WORK ZONE"(G20-5aP) plaque and the "SPEED LIMIT"(R2-1)signs shall not be paid for directly, but shall be considered subsidiary to Item 502.
7. Turning signs from view, laying signs over or down will not be allowed, unless as otherwise noted under "REMOVING OR COVERING" on BC(4).
8. Techniques that may help reduce traffic speeds include but are not limited to:
   A. Law enforcement.
   B. Flagger stationed next to sign.
   C. Portable changeable message sign (PCMS).
   D. Low-power (drone) radar transmitter.
   E. Speed monitor trailers or signs.
9. Speeds shown on details above are for illustration only. Work Zone Speed Limits should only be posted as approved for each project.
10. For more specific guidance concerning the type of work, work zone conditions and factors impacting allowable regulatory construction speed zone reduction see TxDOT form #1204 in the TxDOT e-form system.

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SHEET 3 OF 12

Texas Department of Transportation — Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION WORK ZONE SPEED LIMIT

BC(3)-21

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REVISIONS 9-07 8-14 7-13 5-21	DIST	COUNTY		SHEET NO.

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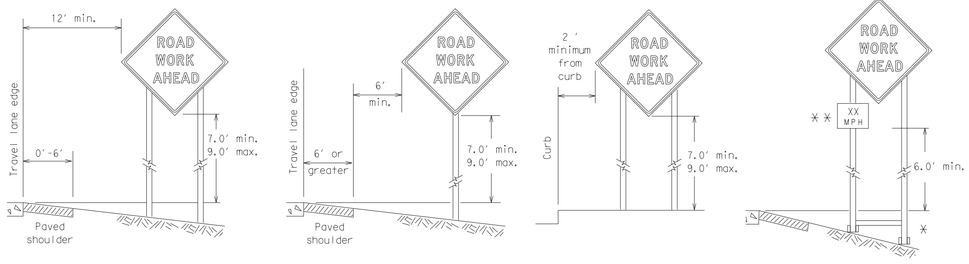
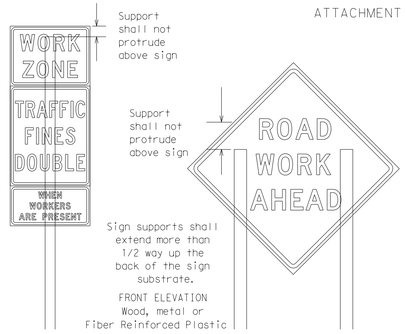
TYPICAL MINIMUM CLEARANCES FOR LONG TERM AND INTERMEDIATE TERM SIGNS



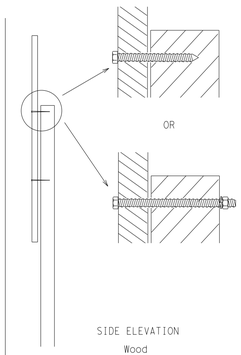
* When placing skid supports on unlevel ground, the leg post lengths must be adjusted so the sign appears straight and plumb. Objects shall NOT be placed under skids as a means of leveling.

** When plaques are placed on dual-leg supports, they should be attached to the upright nearest the travel lane. Supplemental plaques (advisory or distance) should not cover the surface of the parent sign.

ATTACHMENT FOR SIGN SUPPORTS



Splicing embedded perforated square metal tubing in order to extend post height will only be allowed when the splice is made using four bolts, two above and two below the spice point. Splice must be located entirely behind the sign substrate, not near the base of the support. Splice insert lengths should be at least 5 times nominal post size, centered on the splice and of at least the same gauge material.

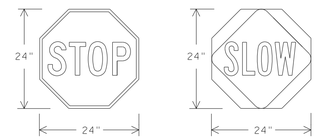


Attachment to wooden supports will be by bolts and nuts or screws. Use TxDOT's or manufacturer's recommended procedures for attaching sign substrates to other types of sign supports

Nails shall NOT be allowed. Each sign shall be attached directly to the sign support. Multiple signs shall not be joined or spliced by any means. Wood supports shall not be extended or repaired by splicing or other means.

STOP/SLOW PADDLES

1. STOP/SLOW paddles are the primary method to control traffic by flaggers. The STOP/SLOW paddle size should be 24" x 24".
2. STOP/SLOW paddles shall be retroreflectorized when used at night.
3. STOP/SLOW paddles may be attached to a staff with a minimum length of 6' to the bottom of the sign.
4. Any lights incorporated into the STOP or SLOW paddle faces shall only be as specifically described in Section 6E.03 Hand Signaling Devices in the TMUTCD.



Background - Red
Legend & Border - White

Background - Orange
Legend & Border - Black

SHEETING REQUIREMENTS (WHEN USED AT NIGHT)		
USAGE	COLOR	SIGN FACE MATERIAL
BACKGROUND	RED	TYPE B OR C SHEETING
BACKGROUND	ORANGE	TYPE B_{FL} OR C_{FL} SHEETING
LEGEND & BORDER	WHITE	TYPE B OR C SHEETING
LEGEND & BORDER	BLACK	ACRYLIC NON-REFLECTIVE FILM

CONTRACTOR REQUIREMENTS FOR MAINTAINING PERMANENT SIGNS WITHIN THE PROJECT LIMITS

1. Permanent signs are used to give notice of traffic laws or regulations, call attention to conditions that are potentially hazardous to traffic operations, show route designations, destinations, directions, distances, services, points of interest, and other geographical, recreational, specific service (LOGO), or cultural information. Drivers proceeding through a work zone need the same, if not better route guidance as normally installed on a roadway without construction.
2. When permanent regulatory or warning signs conflict with work zone conditions, remove or cover the permanent signs until the permanent sign message matches the roadway condition. For details for covering large guide signs see the TS-CD standard.
3. When existing permanent signs are moved and relocated due to construction purposes, they shall be visible to motorists at all times.
4. If existing signs are to be relocated on their original supports, they shall be installed on crashworthy bases as shown on the SMD Standard sheets. The signs shall meet the required mounting heights shown on the BC Sheets or the SMD Standards. This work should be paid for under the appropriate pay item for relocating existing signs.
5. If permanent signs are to be removed and relocated using temporary supports, the Contractor shall use crashworthy supports as shown on the BC standard sheets, TLRS standard sheets or the CWZTCD list. The signs shall meet the required mounting heights shown on the BC, or the SMD standard sheets during construction. This work should be paid for under the appropriate pay item for relocating existing signs.
6. Any sign or traffic control device that is struck or damaged by the Contractor or his/her construction equipment shall be replaced as soon as possible by the Contractor to ensure proper guidance for the motorists. This will be subsidiary to Item 502.

GENERAL NOTES FOR WORK ZONE SIGNS

1. Contractor shall install and maintain signs in a straight and plumb condition and/or as directed by the Engineer.
2. Wooden sign posts shall be painted white.
3. Barricades shall NOT be used as sign supports.
4. All signs shall be installed in accordance with the plans or as directed by the Engineer. Signs shall be used to regulate, warn, and guide the traveling public safely through the work zone.
5. The Contractor may furnish either the sign design shown in the plans or in the "Standard Highway Sign Designs for Texas" (SHSD). The Engineer/Inspector may require the Contractor to furnish other work zone signs that are shown in the TMUTCD but may have been omitted from the plans. Any variation in the plans shall be documented by written agreement between the Engineer and the Contractor's Responsible Person. All changes must be documented in writing before being implemented. This can include documenting the changes in the Inspector's TxDOT diary and having both the Inspector and Contractor initial and date the agreed upon changes.
6. The Contractor shall furnish sign supports listed in the "Compliant Work Zone Traffic Control Device List" (CWZTCD) for small roadside signs. Supports for temporary large roadside signs shall meet the requirements detailed on the Temporary Large Roadside Signs (TLRS) standard sheets. The Contractor shall install the sign support in accordance with the manufacturer's recommendations. If there is a question regarding installation procedures, the Contractor shall furnish the Engineer a copy of the manufacturer's installation recommendations so the Engineer can verify the correct procedures are being followed.
7. The Contractor is responsible for installing signs on approved supports and replacing signs with damaged or cracked substrates and/or damaged or marred reflective sheeting as directed by the Engineer/Inspector.
8. Identification markings may be shown only on the back of the sign substrate. The maximum height of letters and/or company logos used for identification shall be 1 inch.
9. The Contractor shall replace damaged wood posts. New or damaged wood sign posts shall not be spliced.

DURATION OF WORK (as defined by the "Texas Manual on Uniform Traffic Control Devices" Part 6)

1. The types of sign supports, sign mounting height, the size of signs, and the type of sign substrates can vary based on the type of work being performed. The Engineer is responsible for selecting the appropriate size sign for the type of work being performed. The Contractor is responsible for ensuring the sign support, sign mounting height and substrate meets manufacturer's recommendations in regard to crashworthiness and duration of work requirements.
   a. Long-term stationary - work that occupies a location more than 3 days.
   b. Intermediate-term stationary - work that occupies a location more than one daylight period up to 3 days, or nighttime work lasting more than one hour.
   c. Short-term stationary - daytime work that occupies a location for more than 1 hour in a single daylight period.
   d. Short, duration - work that occupies a location up to 1 hour.
   e. Mobile - work that moves continuously or intermittently (stopping for up to approximately 15 minutes.)

SIGN MOUNTING HEIGHT

1. The bottom of Long-term/Intermediate-term signs shall be at least 7 feet, but not more than 9 feet, above the paved surface, except as shown for supplemental plaques mounted below other signs.
2. The bottom of Short-term/Short Duration signs shall be a minimum of 1 foot above the pavement surface but no more than 2 feet above the ground.
3. Long-term/Intermediate-term Signs may be used in lieu of Short-term/Short Duration signing.
4. Short-term/Short Duration signs shall be used only during daylight and shall be removed at the end of the workday or raised to appropriate Long-term/Intermediate sign height.
5. Regulatory signs shall be mounted at least 7 feet, but not more than 9 feet, above the paved surface regardless of work duration.

SIZE OF SIGNS

1. The Contractor shall furnish the sign sizes shown on BC (2) unless otherwise shown in the plans or as directed by the Engineer.

SIGN SUBSTRATES

1. The Contractor shall ensure the sign substrate is installed in accordance with the manufacturer's recommendations for the type of sign support that is being used. The CWZTCD lists each substrate that can be used on the different types and models of sign supports.
2. "Mesh" type materials are NOT an approved sign substrate, regardless of the tightness of the weave.
3. All wooden individual sign panels fabricated from 2 or more pieces shall have one or more plywood cleat, 1/2" thick by 6" wide, fastened to the back of the sign and extending fully across the sign. The cleat shall be attached to the back of the sign using wood screws that do not penetrate the face of the sign panel. The screws shall be placed on both sides of the splice and spaced at 6" centers. The Engineer may approve other methods of splicing the sign face.

REFLECTIVE SHEETING

1. All signs shall be retroreflective and constructed of sheeting meeting the color and retro-reflectivity requirements of DMS-8300 for rigid signs or DMS-8310 for roll-up signs. The web address for DMS specifications is shown on BC(1).
2. White sheeting, meeting the requirements of DMS-8300 Type A, shall be used for signs with a white background.
3. Orange sheeting, meeting the requirements of DMS-8300 Type B_{FL} or Type C_{FL}, shall be used for rigid signs with orange backgrounds.

SIGN LETTERS

1. All sign letters and numbers shall be clear, and open rounded type uppercase alphabet letters as approved by the Federal Highway Administration (FHWA) and as published in the "Standard Highway Sign Design for Texas" manual. Signs, letters and numbers shall be of first class workmanship in accordance with Department Standards and Specifications.

REMOVING OR COVERING

1. When sign messages may be confusing or do not apply, the signs shall be removed or completely covered.
2. Long-term stationary or intermediate stationary signs installed on square metal tubing may be turned away from traffic 90 degrees when the sign message is not applicable. This technique may not be used for signs installed in the median of divided highways or near any intersections where the sign may be seen from approaching traffic.
3. Signs installed on wooden skids shall not be turned at 90 degree angles to the roadway. These signs should be removed or completely covered when not required.
4. When signs are covered, the material used shall be opaque, such as heavy mil black plastic, or other materials which will cover the entire sign face and maintain their opaque properties under automobile headlights at night, without damaging the sign sheeting.
5. Burlap shall NOT be used to cover signs.
6. Duct tape or other adhesive material shall NOT be affixed to a sign face.
7. Signs and anchor stubs shall be removed and holes backfilled upon completion of work.

SIGN SUPPORT WEIGHTS

1. Where sign supports require the use of weights to keep from turning over, the use of sandbags with dry, cohesionless sand should be used.
2. The sandbags will be tied shut to keep the sand from spilling and to maintain a constant weight.
3. Rock, concrete, iron, steel or other solid objects shall not be permitted for use as sign support weights.
4. Sandbags should weigh a minimum of 35 lbs and a maximum of 50 lbs.
5. Sandbags shall be made of a durable material that tears upon vehicular impact. Rubber (such as tire inner tubes) shall NOT be used.
6. Rubber ballasts designed for channelizing devices should not be used for ballast on portable sign supports. Sign supports designed and manufactured with rubber bases may be used when shown on the CWZTCD list.
7. Sandbags shall only be placed along or laid over the base supports of the traffic control device and shall not be suspended above ground level or hung with rope, wire, chains or other fasteners. Sandbags shall be placed along the length of the skids to weigh down the sign support.
8. Sandbags shall NOT be placed under the skid and shall not be used to level sign supports placed on slopes.

FLAGS ON SIGNS

1. Flags may be used to draw attention to warning signs. When used, the flag shall be 16 inches square or larger and shall be orange or fluorescent red-orange in color. Flags shall not be allowed to cover any portion of the sign face.

SHEET 4 OF 12

Texas Department of Transportation — Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION TEMPORARY SIGN NOTES

BC(4)-21

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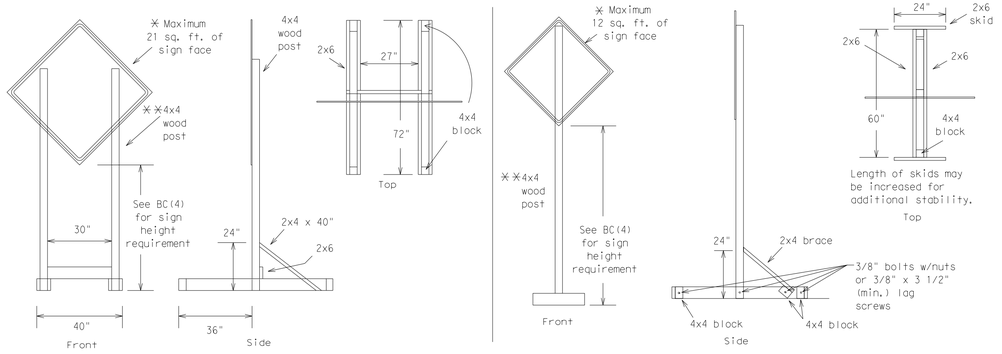
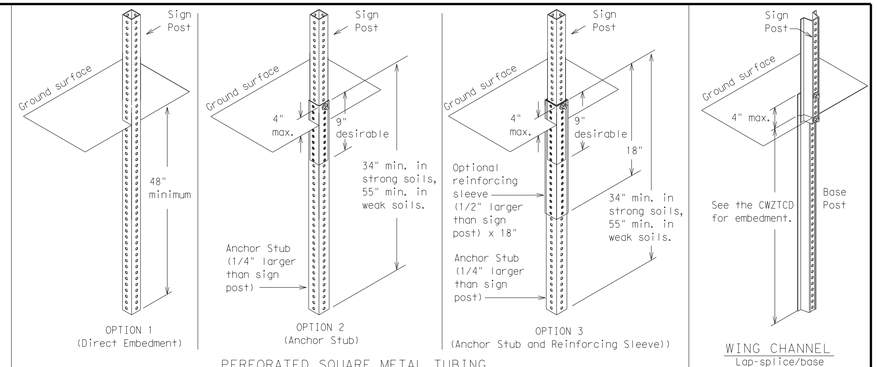


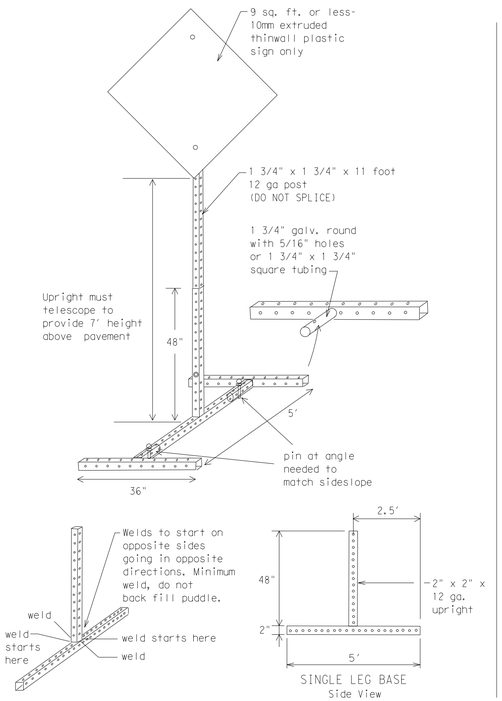
SKID MOUNTED WOOD SIGN SUPPORTS

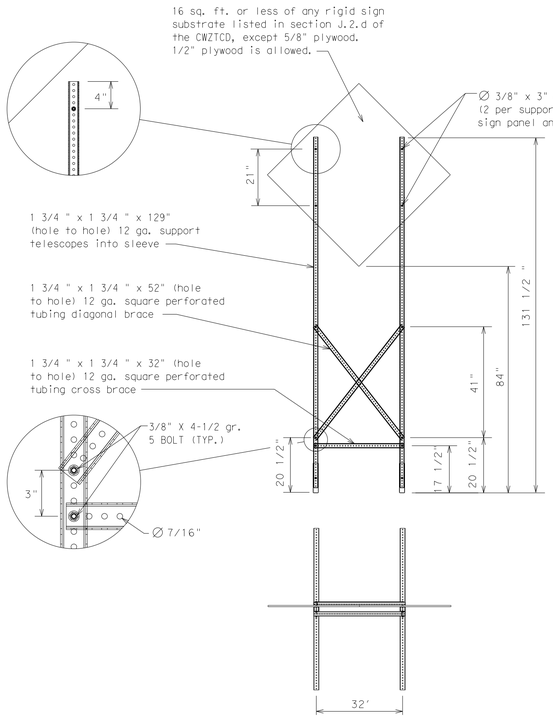
* LONG/INTERMEDIATE TERM STATIONARY - PORTABLE SKID MOUNTED SIGN SUPPORTS

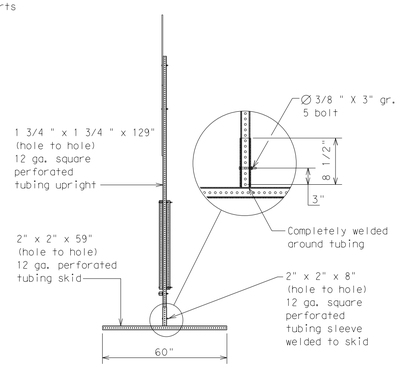


GROUND MOUNTED SIGN SUPPORTS

Refer to the CWZTCD and the manufacturer's installation procedure for each type sign support.
The maximum sign square footage shall adhere to the manufacturer's recommendation.
Two post installations can be used for larger signs.







SKID MOUNTED PERFORATED SQUARE STEEL TUBING SIGN SUPPORTS

* LONG/INTERMEDIATE TERM STATIONARY - PORTABLE SKID MOUNTED SIGN SUPPORTS

WEDGE ANCHORS

Both steel and plastic Wedge Anchor Systems as shown on the SMD Standard Sheets may be used as temporary sign supports for signs up to 10 square feet of sign face. They may be set in concrete or in sturdy soils if approved by the Engineer. (See web address for "Traffic Engineering Standard Sheets" on BC(1)).

OTHER DESIGNS

MORE DETAILS OF APPROVED LONG/INTERMEDIATE AND SHORT TERM SUPPORTS CAN BE FOUND ON THE CWZTCD LIST. SEE BC(1) FOR WEBSITE LOCATION.

GENERAL NOTES

1. Nails may be used in the assembly of wooden sign supports, but 3/8" bolts with nuts or 3/8" x 3 1/2" lag screws must be used on every joint for final connection.
2. No more than 2 sign posts shall be placed within a 7 ft. circle, except for specific materials noted on the CWZTCD List.
3. When project is completed, all sign supports and foundations shall be removed from the project site. This will be considered subsidiary to Item 502.

* See BC(4) for definition of "Work Duration."

** Wood sign posts MUST be one piece. Splicing will NOT be allowed. Posts shall be painted white.

☐ See the CWZTCD for the type of sign substrate that can be used for each approved sign support.

Texas Department of Transportation — Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION TYPICAL SIGN SUPPORT

BC(5)-21

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6200 BRIDGE POINT PARKWAY, SUITE 400
AUSTIN, TX 78730
512-872-7130
Burns & McDonnell Engineering Co., Inc.
Firm Reg. No. F-845

date	detailed
4/3/2026	J. GARCIA
designed	checked
D. WILLIAMS	K. KOOIMAN

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY

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project	contract
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WHEN NOT IN USE, REMOVE THE PCMS FROM THE RIGHT-OF-WAY OR PLACE THE PCMS BEHIND BARRIER OR GUARDRAIL WITH SIGN PANEL TURNED PARALLEL TO TRAFFIC

PORTABLE CHANGEABLE MESSAGE SIGNS

1. The Engineer/Inspector shall approve all messages used on portable changeable message signs (PCMS).
2. Messages on PCMS should contain no more than 8 words (about four to eight characters per word), not including simple words such as "TO," "FOR," "AT," etc.
3. Messages should consist of a single phase, or two phases that alternate. Three-phase messages are not allowed. Each phase of the message should convey a single thought, and must be understood by itself.
4. Use the word "EXIT" to refer to an exit ramp on a freeway; i.e., "EXIT CLOSED." Do not use the term "RAMP."
5. Always use the route or interstate designation (IH, US, SH, FM) along with the number when referring to a roadway.
6. When in use, the bottom of a stationary PCMS message panel should be a minimum 7 feet above the roadway, where possible.
7. The message term "WEEKEND" should be used only if the work is to start on Saturday morning and end by Sunday evening at midnight. Actual days and hours of work should be displayed on the PCMS if work is to begin on Friday evening and/or continue into Monday morning.
8. The Engineer/Inspector may select one of two options which are available for displaying a two-phase message on a PCMS. Each phase may be displayed for either four seconds each or for three seconds each.
9. Do not "flash" messages or words included in a message. The message should be steady burn or continuous while displayed.
10. Do not present redundant information on a two-phase message; i.e., keeping two lines of the message the same and changing the third line.
11. Do not use the word "Danger" in message.
12. Do not display the message "LANES SHIFT LEFT" or "LANES SHIFT RIGHT" on a PCMS. Drivers do not understand the message.
13. Do not display messages that scroll horizontally or vertically across the face of the sign.
14. The following table lists abbreviated words and two-word phrases that are acceptable for use on a PCMS. Both words in a phrase must be displayed together. Words or phrases not on this list should not be abbreviated, unless shown in the TMUTCD.
15. PCMS character height should be at least 18 inches for trailer mounted units. They should be visible from at least 1/2 (.5) mile and the text should be legible from at least 600 feet at night and 800 feet in daylight. Truck mounted units must have a character height of 10 inches and must be legible from at least 400 feet.
16. Each line of text should be centered on the message board rather than left or right justified.
17. If disabled, the PCMS should default to an illegible display that will not alarm motorists and will only be used to alert workers that the PCMS has malfunctioned. A pattern such as a series of horizontal solid bars is appropriate.

WORD OR PHRASE	ABBREVIATION
Access Road	ACCS RD
Alternate	ALT
Avenue	AVE
Best Route	BEST RTE
Boulevard	BLVD
Bridge	BRDG
Cannot	CANT
Center	CTR
Construction Ahead	CONST AHD
CROSSING	XING
Detour Route	DETOUR RTE
Do Not	DONT
East	E
Eastbound	(route) E
Emergency	EMER
Emergency Vehicle	EMER VEH
Entrance, Enter	ENT
Express Lane	EXP LN
Expressway	EXPWY
XXXX Feet	XXXX FT
Fog Ahead	FOG AHD
Freeway	FRWY, FWY
Freeway Blocked	FWY BLKD
Friday	FRI
Hazardous Driving	HAZ DRIVING
Hazardous Material	HAZMAT
High-Occupancy	HOV
Vehicle Highway	HWY
Hour(s)	HR, HRS
Information	INFO
It Is	ITS
Junction	JCT
Left	LFT
Left Lane	LFT LN
Lane Closed	LN CLOSED
Lower Level	LWR LEVEL
Maintenance	MAINT

WORD OR PHRASE	ABBREVIATION
Major	MAJ
Miles	MI
Miles Per Hour	MPH
Minor	MNR
Monday	MON
Normal	NORM
North	N
Northbound	(route) N
Parking	PKING
Road	RD
Right Lane	RT LN
Saturday	SAT
Service Road	SERV RD
Shoulder	SHLDR
Slippery	SLIP
South	S
Southbound	(route) S
Speed	SPD
Street	ST
Sunday	SUN
Telephone	PHONE
Temporary	TEMP
Thursday	THURS
To Downtown	TO DWNTN
Traffic	TRAF
Travelers	TRVLRS
Tuesday	TUES
Time Minutes	TIME MIN
Upper Level	UPR LEVEL
Vehicles (s)	VEH, VEHS
Warning	WARN
Wednesday	WED
Weight Limit	WT LIMIT
West	W
Westbound	(route) W
Wet Pavement	WET PVMT
Will Not	WONT

Roadway designation # IH-number, US-number, SH-number, FM-number

RECOMMENDED PHASES AND FORMATS FOR PCMS MESSAGES DURING ROADWORK ACTIVITIES

(The Engineer may approve other messages not specifically covered here.)

Phase 1: Condition Lists

Road/Lane/Ramp Closure List		Other Condition List	
FREEWAY CLOSED X MILE	FRONTAGE ROAD CLOSED	ROADWORK XXX FT	ROAD REPAIRS XXXX FT
ROAD CLOSED AT SH XXX	SHOULDER CLOSED XXX FT	FLAGGER XXXX FT	LANE NARROWS XXXX FT
ROAD CLSD AT FM XXXX	RIGHT LN CLOSED XXX FT	RIGHT LN NARROWS XXXX FT	TWO-WAY TRAFFIC XX MILE
RIGHT X LANES CLOSED	RIGHT X LANES OPEN	MERGING TRAFFIC XXXX FT	CONST TRAFFIC XXX FT
CENTER LANE CLOSED	DAYTIME LANE CLOSURES	LOOSE GRAVEL XXXX FT	UNEVEN LANES XXXX FT
NIGHT LANE CLOSURES	I-XX SOUTH EXIT CLOSED	DETOUR X MILE	ROUGH ROAD XXXX FT
VARIOUS LANES CLOSED	EXIT XXX CLOSED X MILE	ROADWORK PAST SH XXXX	ROADWORK NEXT FRI-SUN
EXIT CLOSED	RIGHT LN TO BE CLOSED	BUMP XXXX FT	US XXX EXIT X MILES
MALL DRIVEWAY CLOSED	X LANES CLOSED TUE - FRI	TRAFFIC SIGNAL XXXX FT	LANES SHIFT *
XXXXXXXX BLVD CLOSED			

* LANES SHIFT in Phase 1 must be used with STAY IN LANE in Phase 2.

Phase 2: Possible Component Lists

Action to Take/Effect on Travel List		Location List	Warning List	** Advance Notice List
MERGE RIGHT	FORM X LINES RIGHT	AT FM XXXX	SPEED LIMIT XX MPH	TUE-FRI XX AM-X PM
DETOUR NEXT X EXITS	USE XXXXX RD EXIT	BEFORE RAILROAD CROSSING	MAXIMUM SPEED XX MPH	APR XX-XX X PM-X AM
USE EXIT XXX	USE EXIT I-XX NORTH	NEXT X MILES	MINIMUM SPEED XX MPH	BEGINS MONDAY
STAY ON US XXX SOUTH	USE I-XX E TO I-XX N	PAST US XXX EXIT	ADVISORY SPEED XX MPH	BEGINS MAY XX
TRUCKS USE US XXX N	WATCH FOR TRUCKS	XXXXXXX TO XXXXXXX	RIGHT LANE EXIT	MAY X-X XX PM - XX AM
WATCH FOR TRUCKS	EXPECT DELAYS	US XXX TO FM XXXX	USE CAUTION	NEXT FRI-SUN
EXPECT DELAYS	PREPARE TO STOP		DRIVE SAFELY	XX AM TO XX PM
REDUCE SPEED XXX FT	END SHOULDER USE		DRIVE WITH CARE	NEXT TUE AUG XX
USE OTHER ROUTES	WATCH FOR WORKERS			TONIGHT XX PM-XX AM
STAY IN LANE *				

** See Application Guidelines Note 6.

APPLICATION GUIDELINES

1. Only 1 or 2 phases are to be used on a PCMS.
2. The 1st phase (or both) should be selected from the "Road/Lane/Ramp Closure List" and the "Other Condition List".
3. A 2nd phase can be selected from the "Action to Take/Effect on Travel, Location, General Warning, or Advance Notice Phase Lists".
4. A Location Phase is necessary only if a distance or location is not included in the first phase selected.
5. If two PCMS are used in sequence, they must be separated by a minimum of 1000 ft. Each PCMS shall be limited to two phases, and should be understandable by themselves.
6. For advance notice, when the current date is within seven days of the actual work date, calendar days should be replaced with days of the week. Advance notification should typically be for no more than one week prior to the work.

WORDING ALTERNATIVES

1. The words RIGHT, LEFT and ALL can be interchanged as appropriate.
2. Roadway designations IH, US, SH, FM and LP can be interchanged as appropriate.
3. EAST, WEST, NORTH and SOUTH (or abbreviations E, W, N and S) can be interchanged as appropriate.
4. Highway names and numbers replaced as appropriate.
5. ROAD, HIGHWAY and FREEWAY can be interchanged as needed.
6. AHEAD may be used instead of distances if necessary.
7. FT and MI, MILE and MILES interchanged as appropriate.
8. AT, BEFORE and PAST interchanged as needed.
9. Distances or AHEAD can be eliminated from the message if a location phase is used.

PCMS SIGNS WITHIN THE R.O.W. SHALL BE BEHIND GUARDRAIL OR CONCRETE BARRIER OR SHALL HAVE A MINIMUM OF FOUR (4) PLASTIC DRUMS PLACED PERPENDICULAR TO TRAFFIC ON THE UPSTREAM SIDE OF THE PCMS, WHEN EXPOSED TO ONE DIRECTION OF TRAFFIC. WHEN EXPOSED TO TWO WAY TRAFFIC, THE FOUR DRUMS SHOULD BE PLACED WITH ONE DRUM AT EACH OF THE FOUR CORNERS OF THE UNIT.

FULL MATRIX PCMS SIGNS

1. When Full Matrix PCMS signs are used, the character height and legibility/visibility requirements shall be maintained as listed in Note 15 under "PORTABLE CHANGEABLE MESSAGE SIGNS" above.
2. When symbol signs, such as the "Flagger Symbol"(CW20-7) are represented graphically on the Full Matrix PCMS sign and, with the approval of the Engineer, it shall maintain the legibility/visibility requirement listed above.
3. When symbol signs are represented graphically on the Full Matrix PCMS, they shall only supplement the use of the static sign represented, and shall not substitute for, or replace that sign.
4. A full matrix PCMS may be used to simulate a flashing arrow board provided it meets the visibility, flash rate and dimming requirements on BC(7), for the same size arrow.

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Texas Department of Transportation — Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)

BC(6)-21

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6200 BRIDGE POINT PARKWAY, SUITE 400
AUSTIN, TX 78730
512-872-7130
Burns & McDonnell Engineering Co., Inc.
Firm Reg. No. F-845

date	detailed
4/3/2026	J. GARCIA
designed	checked
D. WILLIAMS	K. KOOIMAN

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY

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project	contract
187533	

drawing 006C5XX – rev. 0

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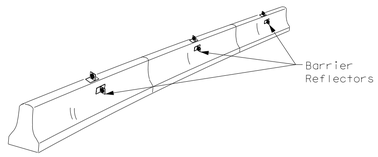
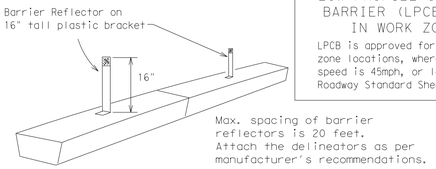
1. Barrier Reflectors shall be pre-qualified, and conform to the color and reflectivity requirements of DMS-8600. A list of prequalified Barrier Reflectors can be found at the Material Producer List web address shown on BC(1).
2. Color of Barrier Reflectors shall be as specified in the TMUTCD. The cost of the reflectors shall be considered subsidiary to Item 512.



CONCRETE TRAFFIC BARRIER (CTB)

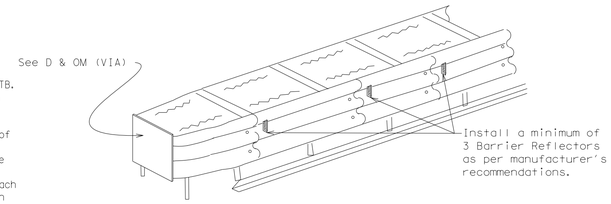
3. Where traffic is on one side of the CTB, two (2) Barrier Reflectors shall be mounted in approximately the midsection of each section of CTB. An alternate mounting location is uniformly spaced at one end of each CTB. This will allow for attachment of a barrier grapple without damaging the reflector. The Barrier Reflector mounted on the side of the CTB shall be located directly below the reflector mounted on top of the barrier, as shown in the detail above.
4. Where CTB separates two-way traffic, three barrier reflectors shall be mounted on each section of CTB. The reflector unit on top shall have two yellow reflective faces (Bi-Directional)while the reflectors on each side of the barrier shall have one yellow reflective face, as shown in the detail above.
5. When CTB separates traffic traveling in the same direction, no barrier reflectors will be required on top of the CTB.
6. Barrier Reflector units shall be yellow or white in color to match the edgeline being supplemented.
7. Maximum spacing of Barrier Reflectors is forty (40) feet.
8. Pavement markers or temporary flexible-reflective roadway marker tabs shall NOT be used as CTB delineation.
9. Attachment of Barrier Reflectors to CTB shall be per manufacturer's recommendations.
10. Missing or damaged Barrier Reflectors shall be replaced as directed by the Engineer.
11. Single slope barriers shall be delineated as shown on the above detail.



LOW PROFILE CONCRETE BARRIER (LPCB)

LOW PROFILE CONCRETE BARRIER (LPCB) USED IN WORK ZONES

LPCB is approved for use in work zone locations, where the posted speed is 45mph, or less. See Roadway Standard Sheet LPCB.

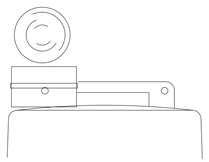


DELINEATION OF END TREATMENTS

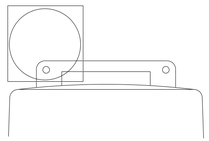
END TREATMENTS FOR CTB'S USED IN WORK ZONES

End treatments used on CTB's in work zones shall meet the apppropriate crashworthy standards as defined in the Manual for Assessing Safety Hardware (MASH). Refer to the CWZTCD List for approved end treatments and manufacturers.

BARRIER REFLECTORS FOR CONCRETE TRAFFIC BARRIER AND ATTENUATORS



Type C Warning Light or approved substitute mounted on a drum adjacent to the travel way.



Warning reflector may be round or square. Must have a yellow reflective surface area of at least 30 square inches

WARNING LIGHTS

1. Warning lights shall meet the requirements of the TMUTCD.
2. Warning lights shall NOT be installed on barricades.
3. Type A-Low Intensity Flashing Warning Lights are commonly used with drums. They are intended to warn of or mark a potentially hazardous area. Their use shall be as indicated on this sheet and/or other sheets of the plans by the designation "FL". The Type A Warning Lights shall not be used with signs manufactured with Type B_{FL} or C_{FL} Sheeting meeting the requirements of Departmental Material Specification DMS-8300.
4. Type-C and Type D 360 degree Steady Burn Lights are intended to be used in a series for delineation to supplement other traffic control devices. Their use shall be as indicated on this sheet and/or other sheets of the plans by the designation "SB".
5. The Engineer/Inspector or the plans shall specify the location and type of warning lights to be installed on the traffic control devices.
6. When required by the Engineer, the Contractor shall furnish a copy of the warning lights certification. The warning light manufacturer will certify the warning lights meet the requirements of the latest ITE Purchase Specifications for Flashing and Steady-Burn Warning Lights.
7. When used to delineate curves, Type-C and Type D Steady Burn Lights should only be placed on the outside of the curve, not the inside.
8. The location of warning lights and warning reflectors on drums shall be as shown elsewhere in the plans.

WARNING LIGHTS MOUNTED ON PLASTIC DRUMS

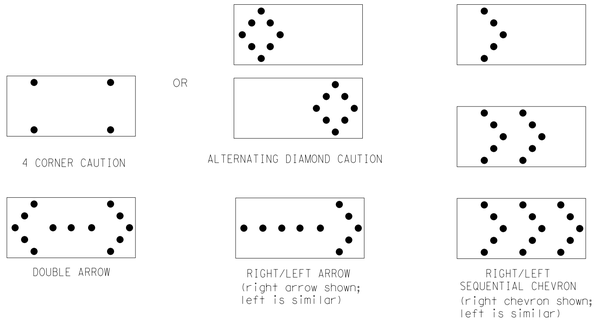
1. Type A flashing warning lights are intended to warn drivers that they are approaching or are in a potentially hazardous area.
2. Type A random flashing warning lights are not intended for delineation and shall not be used in a series.
3. A series of sequential flashing warning lights placed on channelizing devices to form a merging taper may be used for delineation. If used, the successive flashing of the sequential warning lights should occur from the beginning of the taper to the end of the merging taper in order to identify the desired vehicle path. The rate of flashing for each light shall be 65 flashes per minute, plus or minus 10 flashes.
4. Type C and D steady-burn warning lights are intended to be used in a series to delineate the edge of the travel lane on detours, on lane changes, on lane closures, and on other similar conditions.
5. Type A, Type C and Type D warning lights shall be installed at locations as detailed on other sheets in the plans.
6. Warning lights shall not be installed on a drum that has a sign, chevron or vertical panel.
7. The maximum spacing for warning lights on drums should be identical to the channelizing device spacing.

WARNING REFLECTORS MOUNTED ON PLASTIC DRUMS AS A SUBSTITUTE FOR TYPE C (STEADY BURN) WARNING LIGHTS

1. A warning reflector or approved substitute may be mounted on a plastic drum as a substitute for a Type C, steady burn warning light at the discretion of the Contractor unless otherwise noted in the plans.
2. The warning reflector shall be yellow in color and shall be manufactured using a sign substrate approved for use with plastic drums listed on the CWZTCD.
3. The warning reflector shall have a minimum retroreflective surface area (one-side) of 30 square inches.
4. Round reflectors shall be fully reflectorized, including the area where attached to the drum.
5. Square substrates must have a minimum of 30 square inches of reflectorized sheeting. They do not have to be reflectorized where it attaches to the drum.
6. The side of the warning reflector facing approaching traffic shall have sheeting meeting the color and retroreflectivity requirements for DMS 8300-Type B or Type C.
7. When used near two-way traffic, both sides of the warning reflector shall be reflectorized.
8. The warning reflector should be mounted on the side of the handle nearest approaching traffic.
9. The maximum spacing for warning reflectors should be identical to the channelizing device spacing requirements.

Arrow Boards may be located behind channelizing devices in place for a shoulder taper or merging taper, otherwise they shall be delineated with four (4) channelizing devices placed perpendicular to traffic on the upstream side of traffic.

1. The Flashing Arrow Board should be used for all lane closures on multi-lane roadways, or slow moving maintenance or construction activities on the travel lanes.
2. Flashing Arrow Boards should not be used on two-lane, two-way roadways, detours, diversions or work on shoulders unless the "CAUTION" display (see detail below) is used.
3. The Engineer/Inspector shall choose all appropriate signs, barricades and/or other traffic control devices that should be used in conjunction with the Flashing Arrow Board.
4. The Flashing Arrow Board should be able to display the following symbols:



5. The "CAUTION" display consists of four corner lamps flashing simultaneously, or the Alternating Diamond Caution mode as shown.
6. The straight line caution display is NOT ALLOWED.
7. The Flashing Arrow Board shall be capable of minimum 50 percent dimming from rated lamp voltage. The flashing rate of the lamps shall not be less than 25 nor more than 40 flashes per minute.
8. Minimum lamp "on time" shall be approximately 50 percent for the flashing arrow and equal intervals of 25 percent for each sequential phase of the flashing chevron.
9. The sequential arrow display is NOT ALLOWED.
10. The flashing arrow display is the TxDOT standard; however, the sequential chevron display may be used during daylight operations.
11. The Flashing Arrow Board shall be mounted on a vehicle, trailer or other suitable support.
12. A Flashing Arrow Board SHALL NOT BE USED to laterally shift traffic.
13. A full matrix PCMS may be used to simulate a Flashing Arrow Board provided it meets visibility, flash rate and dimming requirements on this sheet for the same size arrow.
14. Minimum mounting height of trailer mounted Arrow Boards should be 7 feet from roadway to bottom of panel.

REQUIREMENTS			
TYPE	MINIMUM SIZE	MINIMUM NUMBER OF PANEL LAMPS	MINIMUM VISIBILITY DISTANCE
B	30 x 60	13	3/4 mile
C	48 x 96	15	1 mile

ATTENTION

Flashing Arrow Boards shall be equipped with automatic dimming devices.

WHEN NOT IN USE, REMOVE THE ARROW BOARD FROM THE RIGHT-OF-WAY OR PLACE THE ARROW BOARD BEHIND CONCRETE TRAFFIC BARRIER OR GUARDRAIL.

FLASHING ARROW BOARDS

SHEET 7 OF 12

TRUCK-MOUNTED ATTENUATORS

1. Truck-mounted attenuators (TMA) used on TxDOT facilities must meet the requirements outlined in the Manual for Assessing Safety Hardware (MASH).
2. Refer to the CWZTCD for the requirements of Level 2 or Level 3 TMAs.
3. Refer to the CWZTCD for a list of approved TMAs.
4. TMAs are required on freeways unless otherwise noted in the plans.
5. A TMA should be used anytime that it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the work performance.
6. The only reason a TMA should not be required is when a work area is spread down the roadway and the work crew is an extended distance from the TMA.

Texas Department of Transportation — Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION ARROW PANEL, REFLECTORS, WARNING LIGHTS & ATTENUATOR

BC(7)-21

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AUSTIN, TX 78730
512-872-7130
Burns & McDonnell Engineering Co., Inc.
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date	detailed
4/3/2026	J. GARCIA
designed	checked
D. WILLIAMS	K. KOOIMAN

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY

CIVIL
TxDOT REF STANDARD DETAIL SHEET X

project	contract
187533	

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GENERAL NOTES

1. For long term stationary work zones on freeways, drums shall be used as the primary channelizing device.
2. For intermediate term stationary work zones on freeways, drums should be used as the primary channelizing device but may be replaced in tangent sections by vertical panels, or 42" two-piece cones. In tangent sections, one-piece cones may be used with the approval of the Engineer but only if personnel are present on the project at all times to maintain the cones in proper position and location.
3. For short term stationary work zones on freeways, drums are the preferred channelizing device but may be replaced in tapers, transitions and tangent sections by vertical panels, two-piece cones or one-piece cones as approved by the Engineer.
4. Drums and all related items shall comply with the requirements of the current version of the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) and the "Compliant Work Zone Traffic Control Devices List" (CWZTCD).
5. Drums, bases, and related materials shall exhibit good workmanship and shall be free from objectionable marks or defects that would adversely affect their appearance or serviceability.
6. The Contractor shall have a maximum of 24 hours to replace any plastic drums identified for replacement by the Engineer/Inspector. The replacement device must be an approved device.

GENERAL DESIGN REQUIREMENTS

Pre-qualified plastic drums shall meet the following requirements:

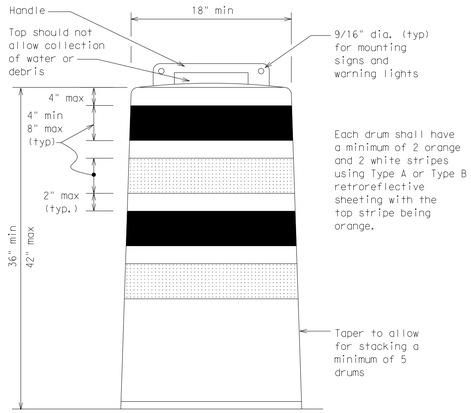
1. Plastic drums shall be a two-piece design; the "body" of the drum shall be the top portion and the "base" shall be the bottom.
2. The body and base shall lock together in such a manner that the body separates from the base when impacted by a vehicle traveling at a speed of 20 MPH or greater but prevents accidental separation due to normal handling and/or air turbulence created by passing vehicles.
3. Plastic drums shall be constructed of lightweight flexible, and deformable materials. The Contractor shall NOT use metal drums or single piece plastic drums as channelization devices or sign supports.
4. Drums shall present a profile that is a minimum of 18 inches in width at the 36 inch height when viewed from any direction. The height of drum unit (body installed on base) shall be a minimum of 36 inches and a maximum of 42 inches.
5. The top of the drum shall have a built-in handle for easy pickup and shall be designed to drain water and not collect debris. The handle shall have a minimum of two widely spaced 9/16 inch diameter holes to allow attachment of a warning light, warning reflector unit or approved compliant sign.
6. The exterior of the drum body shall have a minimum of four alternating orange and white retroreflective circumferential stripes not less than 4 inches nor greater than 8 inches in width. Any non-reflectorized space between any two adjacent stripes shall not exceed 2 inches in width.
7. Bases shall have a maximum width of 36 inches, a maximum height of 4 inches, and a minimum of two footholds of sufficient size to allow base to be held down while separating the drum body from the base.
8. Plastic drums shall be constructed of ultra-violet stabilized, orange, high-density polyethylene (HDPE) or other approved material.
9. Drum body shall have a maximum unballasted weight of 11 lbs.
10. Drum and base shall be marked with manufacturer's name and model number.

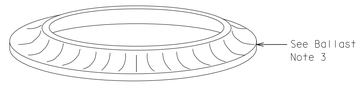
RETROREFLECTIVE SHEETING

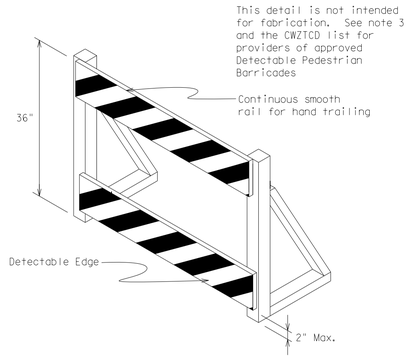
1. The stripes used on drums shall be constructed of sheeting meeting the color and retroreflectivity requirements of Departmental Materials Specification DMS-8300, "Sign Face Materials." Type A or Type B reflective sheeting shall be supplied unless otherwise specified in the plans.
2. The sheeting shall be suitable for use on and shall adhere to the drum surface such that, upon vehicular impact, the sheeting shall remain adhered in-place and exhibit no delaminating, cracking, or loss of retroreflectivity other than that loss due to abrasion of the sheeting surface.

BALLAST

1. Unballasted bases shall be large enough to hold up to 50 lbs. of sand. This base, when filled with the ballast material, should weigh between 35 lbs (minimum) and 50 lbs (maximum). The ballast may be sand in one to three sandbags separate from the base, sand in a sand-filled plastic base, or other ballasting devices as approved by the Engineer. Stacking of sandbags will be allowed, however height of sandbags above pavement surface may not exceed 12 inches.
2. Bases with built-in ballast shall weigh between 40 lbs. and 50 lbs. Built-in ballast can be constructed of an integral crumb rubber base or a solid rubber base.
3. Recycled truck tire sidewalls may be used for ballast on drums approved for this type of ballast on the CWZTCD list.
4. The ballast shall not be heavy objects, water, or any material that would become hazardous to motorists, pedestrians, or workers when the drum is struck by a vehicle.
5. When used in regions susceptible to freezing, drums shall have drainage holes in the bottoms so that water will not collect and freeze becoming a hazard when struck by a vehicle.
6. Ballast shall not be placed on top of drums.
7. Adhesives may be used to secure base of drums to pavement.



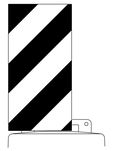




DETECTABLE PEDESTRIAN BARRICADES

1. When existing pedestrian facilities are disrupted, closed, or relocated in a TTC zone, the temporary facilities shall be detectable and include accessibility features consistent with the features present in the existing pedestrian facility. Refer to WZ(BTS-2) for Pedestrian Control requirements for Sidewalk Diversions, Sidewalk Detours and Crosswalk Closures.
2. Where pedestrians with visual disabilities normally use the closed sidewalk, a Detectable Pedestrian Barricade shall be placed across the full width of the closed sidewalk instead of a Type 3 Barricade.
3. Detectable pedestrian barricades similar to the one pictured above, longitudinal channelizing devices, some concrete barriers, and wood or chain link fencing with a continuous detectable edging can satisfactorily delineate a pedestrian path.
4. Tape, rope, or plastic chain strung between devices are not detectable, do not comply with the design standards in the "Americans with Disabilities Act Accessibility Guidelines (ADAAG)" and should not be used as a control for pedestrian movements.
5. Warning lights shall not be attached to detectable pedestrian barricades.
6. Detectable pedestrian barricades should use 8" nominal barricade rails as shown on BC(10) provided that the top rail provides a smooth continuous rail suitable for hand trailing with no splinters, burrs, or sharp edges.

18" x 24" Sign
(Maximum Sign Dimension)
Chevron CW1-8, Opposing Traffic Lane Divider, Driveway sign D70a, Keep Right R4 series or other signs as approved by Engineer



12" x 24"
Vertical Panel
mount with diagonals sloping down towards travel way

Plywood, Aluminum or Metal sign substrates shall NOT be used on plastic drums

SIGNS, CHEVRONS, AND VERTICAL PANELS MOUNTED ON PLASTIC DRUMS

1. Signs used on plastic drums shall be manufactured using substrates listed on the CWZTCD.
2. Chevrons and other work zone signs with an orange background shall be manufactured with Type B_{FL} or Type C_{FL} Orange sheeting meeting the color and retroreflectivity requirements of DMS-8300, "Sign Face Material," unless otherwise specified in the plans.
3. Vertical Panels shall be manufactured with orange and white sheeting meeting the requirements of DMS-8300 Type A or Type B. Diagonal stripes on Vertical Panels shall slope down toward the intended traveled lane.
4. Other sign messages (text or symbolic) may be used as approved by the Engineer. Sign dimensions shall not exceed 18 inches in width or 24 inches in height, except for the R9 series signs discussed in note 8 below.
5. Signs shall be installed using a 1/2 inch bolt (nominal) and nut, two washers, and one locking washer for each connection.
6. Mounting bolts and nuts shall be fully engaged and adequately torqued. Bolts should not extend more than 1/2 inch beyond nuts.
7. Chevrons may be placed on drums on the outside of curves, on merging tapers or on shifting tapers. When used in these locations, they may be placed on every drum or spaced not more than on every third drum. A minimum of three (3) should be used at each location called for in the plans.
8. R9-9, R9-10, R9-11 and R9-11a Sidewalk Closed signs which are 24 inches wide may be mounted on plastic drums, with approval of the Engineer.

SHEET 8 OF 12

Texas Department of Transportation | *Traffic Safety Division Standard*

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(8)-21

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AUSTIN, TX 78730
512-872-7130
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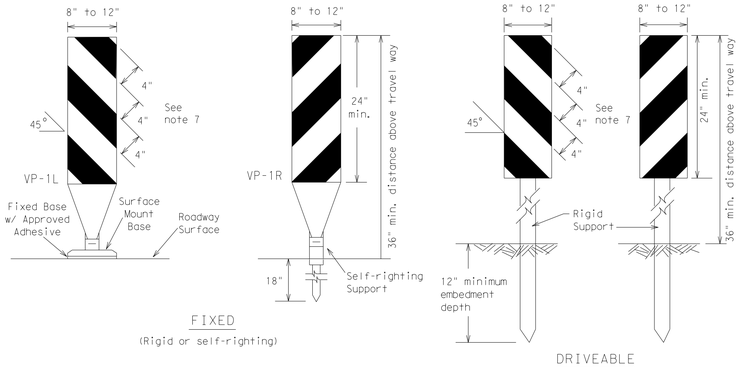
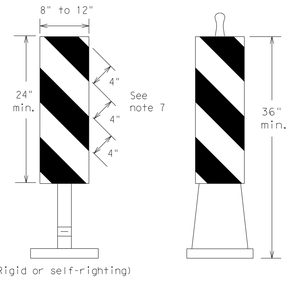


FIXED

(Rigid or self-righting)

DRIVEABLE

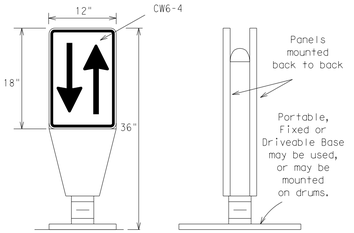


(Rigid or self-righting)

PORTABLE

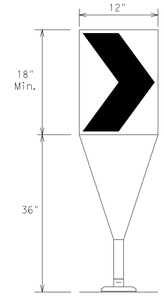
1. Vertical Panels (VP's) are normally used to channelize traffic or divide opposing lanes of traffic.
2. VP's may be used in daytime or nighttime situations. They may be used at the edge of shoulder drop-offs and other areas such as lane transitions where positive daytime and nighttime delineation is required. The Engineer/Inspector shall refer to the Roadway Design Manual for additional requirements on the use VP's for drop-offs.
3. VP's should be mounted back to back if used at the edge of cuts adjacent to two-way two lane roadways. Stripes are to be reflective orange and reflective white and should always slope downward toward the travel lane.
4. VP's used on expressways and freeways or other high speed roadways, may have more than 270 square inches of retroreflective area facing traffic.
5. Self-righting supports are available with portable base. See "Compliant Work Zone Traffic Control Devices List" (CWZTCD).
6. Sheeting for the VP's shall be retroreflective Type A or Type B conforming to Departmental Material Specification DMS-8300, unless noted otherwise.
7. Where the height of reflective material on the vertical panel is 36 inches or greater, a panel stripe of 6 inches shall be used.

VERTICAL PANELS (VPs)



1. Opposing Traffic Lane Dividers (OTLD) are delineation devices designed to convert a normal one-way roadway section to two-way operation. OTLD's are used on temporary centerlines. The upward and downward arrows on the sign's face indicate the direction of traffic on either side of the divider. The base is secured to the pavement with an adhesive or rubber weight to minimize movement caused by a vehicle impact or wind gust.
2. The OTLD may be used in combination with 42" cones or VPs.
3. Spacing between the OTLD shall not exceed 500 feet. 42" cones or VPs placed between the OTLD's should not exceed 100 foot spacing.
4. The OTLD shall be orange with a black non-reflective legend. Sheeting for the OTLD shall be retroreflective Type B_{FL} or Type C_{FL} conforming to Departmental Material Specification DMS-8300, unless noted otherwise. The legend shall meet the requirements of DMS-8300.

OPPOSING TRAFFIC LANE DIVIDERS (OTLD)



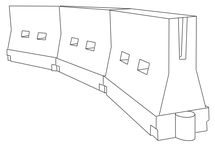
Fixed Base w/ Approved Adhesive (Driveable Base, or Flexible Support can be used)

1. The chevron shall be a vertical rectangle with a minimum size of 12 by 18 inches.
2. Chevrons are intended to give notice of a sharp change of alignment with the direction of travel and provide additional emphasis and guidance for vehicle operators with regard to changes in horizontal alignment of the roadway.
3. Chevrons, when used, shall be erected on the outside of a sharp curve or turn, or on the far side of an intersection. They shall be in line with and at right angles to approaching traffic. Spacing should be such that the motorist always has three in view, until the change in alignment eliminates its need.
4. To be effective, the chevron should be visible for at least 500 feet.
5. Chevrons shall be orange with a black nonreflective legend. Sheeting for the chevron shall be retroreflective Type B_{FL} or Type C_{FL} conforming to Departmental Material Specification DMS-8300, unless noted otherwise. The legend shall meet the requirements of DMS-8300.
6. For Long Term Stationary use on tapers or transitions on freeways and divided highways, self-righting chevrons may be used to supplement plastic drums but not to replace plastic drums.

CHEVRONS

GENERAL NOTES

1. Work Zone channelizing devices illustrated on this sheet may be installed in close proximity to traffic and are suitable for use on high or low speed roadways. The Engineer/Inspector shall ensure that spacing and placement is uniform and in accordance with the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD).
2. Channelizing devices shown on this sheet may have a driveable, fixed or portable base. The requirement for self-righting channelizing devices must be specified in the General Notes or other plan sheets.
3. Channelizing devices on self-righting supports should be used in work zone areas where channelizing devices are frequently impacted by errant vehicles or vehicle related wind gusts making alignment of the channelizing devices difficult to maintain. Locations of these devices shall be detailed elsewhere in the plans. These devices shall conform to the TMUTCD and the "Compliant Work Zone Traffic Control Devices List" (CWZTCD).
4. The Contractor shall maintain devices in a clean condition and replace damaged, nonreflective, faded, or broken devices and bases as required by the Engineer/Inspector. The Contractor shall be required to maintain proper device spacing and alignment.
5. Portable bases shall be fabricated from virgin and/or recycled rubber. The portable bases shall weigh a minimum of 30 lbs.
6. Pavement surfaces shall be prepared in a manner that ensures proper bonding between the adhesives, the fixed mount bases and the pavement surface. Adhesives shall be prepared and applied according to the manufacturer's recommendations.
7. The installation and removal of channelizing devices shall not cause detrimental effects to the final pavement surfaces, including pavement surface discoloration or surface integrity. Driveable bases shall not be permitted on final pavement surfaces. The Engineer/Inspector shall approve all application and removal procedures of fixed bases.



LONGITUDINAL CHANNELIZING DEVICES (LCD)

1. LCDs are crashworthy, lightweight, deformable devices that are highly visible, have good target value and can be connected together. They are not designed to contain or redirect a vehicle on impact.
2. LCDs may be used instead of a line of cones or drums.
3. LCDs shall be placed in accordance to application and installation requirements specific to the device, and used only when shown on the CWZTCD list.
4. LCDs should not be used to provide positive protection for obstacles, pedestrians or workers.
5. LCDs shall be supplemented with retroreflective delineation as required for temporary barriers on BC(7) when placed roughly parallel to the travel lanes.
6. LCDs used as barricades placed perpendicular to traffic should have at least one row of reflective sheeting meeting the requirements for barricade rails as shown on BC(10). Place reflective sheeting near the top of the LCD along the full length of the device.

WATER BALLASTED SYSTEMS USED AS BARRIERS

1. Water ballasted systems used as barriers shall not be used solely to channelize road users, but also to protect the work space per the appropriate Manual for Assessing Safety Hardware (MASH) crashworthiness requirements based on roadway speed and barrier application.
2. Water ballasted systems used to channelize vehicular traffic shall be supplemented with retroreflective delineation or channelizing devices to improve daytime/nighttime visibility. They may also be supplemented with pavement markings.
3. Water ballasted systems used as barriers shall be placed in accordance to application and installation requirements specific to the device, and used only when shown on the CWZTCD list.
4. Water ballasted systems used as barriers should not be used for a merging taper except in low speed (less than 45 MPH) urban areas. When used on a taper in a low speed urban area, the taper shall be delineated and the taper length should be designed to optimize road user operations considering the available geometric conditions.
5. When water ballasted systems used as barriers have blunt ends exposed to traffic, they should be attenuated as per manufacturer recommendations or flared to a point outside the clear zone.

If used to channelize pedestrians, longitudinal channelizing devices or water ballasted systems must have a continuous detectable bottom for users of long canes and the top of the unit shall not be less than 32 inches in height.

HOLLOW OR WATER BALLASTED SYSTEMS USED AS LONGITUDINAL CHANNELIZING DEVICES OR BARRIERS

Posted Speed	Formula	Minimum Desirable Taper Lengths ✕✕ 10′ Offset	11′ Offset	12′ Offset	Suggested Maximum Spacing of Channelizing Devices: On a Taper	On a Tangent
30	$L=\frac{WS^2}{60}$	150′	165′	180′	30′	60′
35		205′	225′	245′	35′	70′
40		265′	295′	320′	40′	80′
45	$L=WS$	450′	495′	540′	45′	90′
50		500′	550′	600′	50′	100′
55		550′	605′	660′	55′	110′
60		600′	660′	720′	60′	120′
65		650′	715′	780′	65′	130′
70		700′	770′	840′	70′	140′
75		750′	825′	900′	75′	150′
80		800′	880′	960′	80′	160′

✕✕ Taper lengths have been rounded off.
L=Length of Taper (FT.) W=Width of Offset (FT.)
S=Posted Speed (MPH)

SUGGESTED MAXIMUM SPACING OF CHANNELIZING DEVICES AND MINIMUM DESIRABLE TAPER LENGTHS

SHEET 9 OF 12

Texas Department of Transportation — Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(9)-21

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6200 BRIDGE POINT PARKWAY, SUITE 400
AUSTIN, TX 78730
512-872-7130
Burns & McDonnell Engineering Co., Inc.
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4/3/2026	J. GARCIA
designed	checked
D. WILLIAMS	K. KOOIMAN

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY

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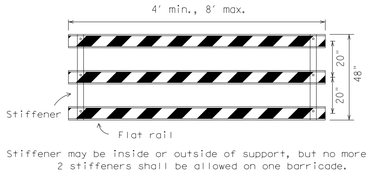
TYPE 3 BARRICADES

1. Refer to the Compliant Work Zone Traffic Control Devices List (CWZTCD) for details of the Type 3 Barricades and a list of all materials used in the construction of Type 3 Barricades.
2. Type 3 Barricades shall be used at each end of construction projects closed to all traffic.
3. Barricades extending across a roadway should have stripes that slope downward in the direction toward which traffic must turn in detouring. When both right and left turns are provided, the chevron striping may slope downward in both directions from the center of the barricade. Where no turns are provided at a closed road, striping should slope downward in both directions toward the center of roadway.
4. Striping of rails, for the right side of the roadway, should slope downward to the left. For the left side of the roadway, striping should slope downward to the right.
5. Identification markings may be shown only on the back of the barricade rails. The maximum height of letters and/or company logos used for identification shall be 1".
6. Barricades shall not be placed parallel to traffic unless an adequate clear zone is provided.
7. Warning lights shall NOT be installed on barricades.
8. Where barricades require the use of weights to keep from turning over, the use of sandbags with dry, cohesionless sand is recommended. The sandbags will be tied shut to keep the sand from spilling and to maintain a constant weight. Sand bags shall not be stacked in a manner that covers any portion of a barricade rails reflective sheeting. Rock, concrete, iron, steel or other solid objects will NOT be permitted. Sandbags should weigh a minimum of 35 lbs and a maximum of 50 lbs. Sandbags shall be made of a durable material that tears upon vehicular impact. Rubber (such as tire inner tubes) shall not be used for sandbags. Sandbags shall only be placed along or upon the base supports of the device and shall not be suspended above ground level or hung with rope, wire, chains or other fasteners.
9. Sheeting for barricades shall be retroreflective Type A or Type B conforming to Departmental Material Specification DMS-8300 unless otherwise noted.

Barricades shall NOT be used as a sign support.

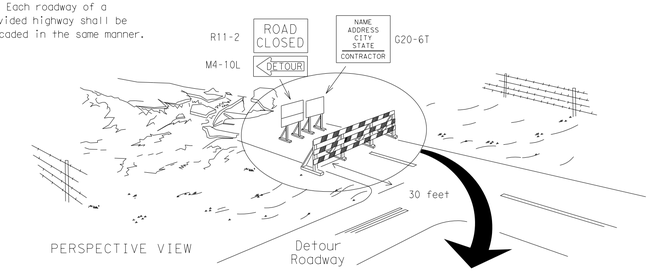
TYPICAL STRIPING DETAIL FOR BARRICADE RAIL



Stiffener may be inside or outside of support, but no more than 2 stiffeners shall be allowed on one barricade.

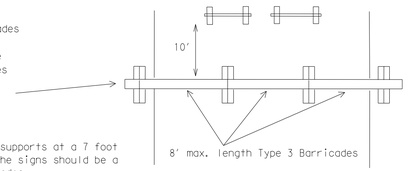
TYPICAL PANEL DETAIL
FOR SKID OR POST TYPE BARRICADES

Each roadway of a divided highway shall be barricaded in the same manner.



PERSPECTIVE VIEW

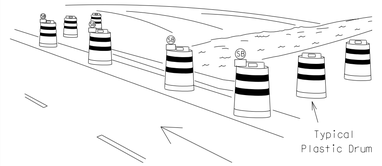
The three rails on Type 3 barricades shall be reflectorized orange and reflective white stripes on one side facing one-way traffic and both sides for two-way traffic.
Barricade striping should slant downward in the direction of detour.



PLAN VIEW

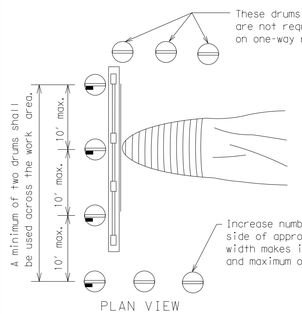
1. Signs should be mounted on independent supports at a 7 foot mounting height in center of roadway. The signs should be a minimum of 10 feet behind Type 3 Barricades.
2. Advance signing shall be as specified elsewhere in the plans.

TYPE 3 BARRICADE (POST AND SKID) TYPICAL APPLICATION



PERSPECTIVE VIEW

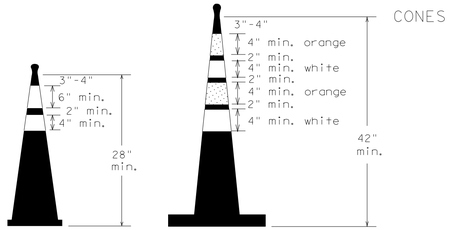
1. Where positive redirectional capability is provided, drums may be omitted.
2. Plastic construction fencing may be used with drums for safety as required in the plans.
3. Vertical Panels on flexible support may be substituted for drums when the shoulder width is less than 4 feet.
4. When the shoulder width is greater than 12 feet, steady-burn lights may be omitted if drums are used.
5. Drums must extend the length of the culvert widening.



LEGEND	
	Plastic drum
	Plastic drum with steady burn light or yellow warning reflector
SB	Steady burn warning light or yellow warning reflector

PLAN VIEW

CULVERT WIDENING OR OTHER ISOLATED WORK WITHIN THE PROJECT LIMITS

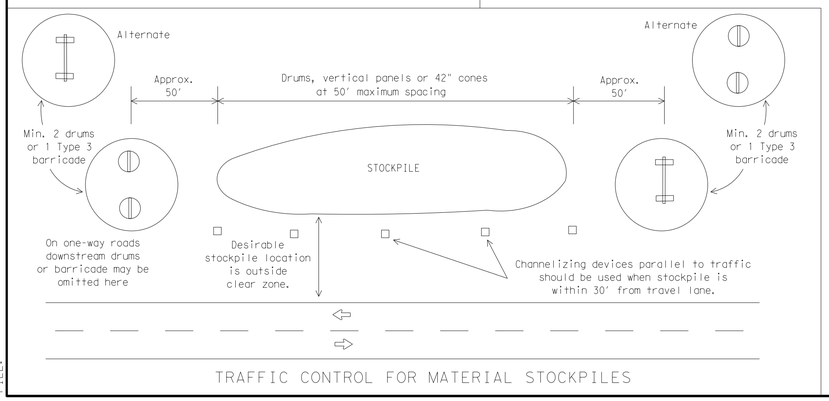


Two-Piece cones | One-Piece cones | Tubular Marker

28" Cones shall have a minimum weight of 9 1/2 lbs.

42" 2-piece cones shall have a minimum weight of 30 lbs. including base.

1. Traffic cones and tubular markers shall be predominantly orange, and meet the height and weight requirements shown above.
2. One-piece cones have the body and base of the cone molded in one consolidated unit. Two-piece cones have a cone shaped body and a separate rubber base, or ballast, that is added to keep the device upright and in place.
3. Two-piece cones may have a handle or loop extending up to 8" above the minimum height shown, in order to aid in retrieving the device.
4. Cones or tubular markers shall have white or white and orange reflective bands as shown above. The reflective bands shall have a smooth, sealed outer surface and meet the requirements of Departmental Material Specification DMS-8300 Type A or Type B.
5. 28" cones and tubular markers are generally suitable for short duration and short-term stationary work as defined on BC(4). These should not be used for intermediate-term or long-term stationary work unless personnel is on-site to maintain them in their proper upright position.
6. 42" two-piece cones, vertical panels or drums are suitable for all work zone durations.
7. Cones or tubular markers used on each project should be of the same size and shape.



TRAFFIC CONTROL FOR MATERIAL STOCKPILES

SHEET 10 OF 12

Texas Department of Transportation | Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(10)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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9-07 8-14	DIST	COUNTY		SHEET NO.
7-13 5-21				
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AUSTIN, TX 78730
512-872-7130
Burns & McDonnell Engineering Co., Inc.
Firm Reg. No. F-845

date	detailed
4/3/2026	J. GARCIA
designed	checked
D. WILLIAMS	K. KOOIMAN

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY

CIVIL
TxDOT REF STANDARD DETAIL SHEET X

project	contract
187533	

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WORK ZONE PAVEMENT MARKINGS

GENERAL

1. The Contractor shall be responsible for maintaining work zone and existing pavement markings, in accordance with the standard specifications and special provisions, on all roadways open to traffic within the CSJ limits unless otherwise stated in the plans.
2. Color, patterns and dimensions shall be in conformance with the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD).
3. Additional supplemental pavement marking details may be found in the plans or specifications.
4. Pavement markings shall be installed in accordance with the TMUTCD and as shown on the plans.
5. When short term markings are required on the plans, short term markings shall conform with the TMUTCD, the plans and details as shown on the Standard Plan Sheet WZ(STPM).
6. When standard pavement markings are not in place and the roadway is opened to traffic, DO NOT PASS signs shall be erected to mark the beginning of the sections where passing is prohibited and PASS WITH CARE signs at the beginning of sections where passing is permitted.
7. All work zone pavement markings shall be installed in accordance with Item 662, "Work Zone Pavement Markings."

RAISED PAVEMENT MARKERS

1. Raised pavement markers are to be placed according to the patterns on BC(12).
2. All raised pavement markers used for work zone markings shall meet the requirements of Item 672, "RAISED PAVEMENT MARKERS" and Departmental Material Specification DMS-4200 or DMS-4300.

PREFABRICATED PAVEMENT MARKINGS

1. Removable prefabricated pavement markings shall meet the requirements of DMS-8241.
2. Non-removable prefabricated pavement markings (foil back) shall meet the requirements of DMS-8240.

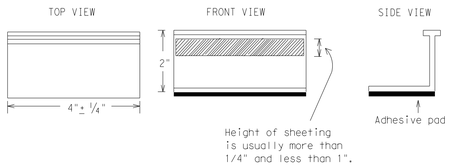
MAINTAINING WORK ZONE PAVEMENT MARKINGS

1. The Contractor will be responsible for maintaining work zone pavement markings within the work limits.
2. Work zone pavement markings shall be inspected in accordance with the frequency and reporting requirements of work zone traffic control device inspections as required by Form 599.
3. The markings should provide a visible reference for a minimum distance of 300 feet during normal daylight hours and 160 feet when illuminated by automobile low-beam headlights at night, unless sight distance is restricted by roadway geometrics.
4. Markings failing to meet this criteria within the first 30 days after placement shall be replaced at the expense of the Contractor as per Specification Item 662.

REMOVAL OF PAVEMENT MARKINGS

1. Pavement markings that are no longer applicable, could create confusion or direct a motorist toward or into the closed portion of the roadway shall be removed or obliterated before the roadway is opened to traffic.
2. The above shall not apply to detours in place for less than three days, where flaggers and/or sufficient channelizing devices are used in lieu of markings to outline the detour route.
3. Pavement markings shall be removed to the fullest extent possible, so as not to leave a discernable marking. This shall be by any method approved by TxDOT Specification Item 677 for "Eliminating Existing Pavement Markings and Markers".
4. The removal of pavement markings may require resurfacing or seal coating portions of the roadway as described in Item 677.
5. Subject to the approval of the Engineer, any method that proves to be successful on a particular type pavement may be used.
6. Blast cleaning may be used but will not be required unless specifically shown in the plans.
7. Over-painting of the markings SHALL NOT BE permitted.
8. Removal of raised pavement markers shall be as directed by the Engineer.
9. Removal of existing pavement markings and markers will be paid for directly in accordance with Item 677, "ELIMINATING EXISTING PAVEMENT MARKINGS AND MARKERS," unless otherwise stated in the plans.
10. Black-out marking tape may be used to cover conflicting existing markings for periods less than two weeks when approved by the Engineer.

Temporary Flexible-Reflective Roadway Marker Tabs



STAPLES OR NAILS SHALL NOT BE USED TO SECURE TEMPORARY FLEXIBLE-REFLECTIVE ROADWAY MARKER TABS TO THE PAVEMENT SURFACE

1. Temporary flexible-reflective roadway marker tabs used as guidemarks shall meet the requirements of DMS-8242.
2. Tabs detailed on this sheet are to be inspected and accepted by the Engineer or designated representative. Sampling and testing is not normally required, however at the option of the Engineer, either "A" or "B" below may be imposed to assure quality before placement on the roadway.
   A. Select five (5) or more tabs at random from each lot or shipment and submit to the Construction Division, Materials and Pavement Section to determine specification compliance.
   B. Select five (5) tabs and perform the following test. Affix five (5) tabs at 24 inch intervals on an asphaltic pavement in a straight line. Using a medium size passenger vehicle or pickup, run over the markers with the front and rear tires at a speed of 35 to 40 miles per hour, four (4) times in each direction. No more than one (1) out of the five (5) reflective surfaces shall be lost or displaced as a result of this test.
3. Small design variances may be noted between tab manufacturers.
4. See Standard Sheet WZ(STPM) for tab placement on new pavements. See Standard Sheet TCP(7-1) for tab placement on seal coat work.

RAISED PAVEMENT MARKERS USED AS GUIDEMARKS

1. Raised pavement markers used as guidemarks shall be from the approved product list, and meet the requirements of DMS-4200.
2. All temporary construction raised pavement markers provided on a project shall be of the same manufacturer.
3. Adhesive for guidemarks shall be bituminous material hot applied or butyl rubber pad for all surfaces, or thermoplastic for concrete surfaces.

Guidemarks shall be designated as:
YELLOW - (two amber reflective surfaces with yellow body).
WHITE - (one silver reflective surface with white body).

DEPARTMENTAL MATERIAL SPECIFICATIONS	
PAVEMENT MARKERS (REFLECTORIZED)	DMS-4200
TRAFFIC BUTTONS	DMS-4300
EPOXY AND ADHESIVES	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240
TEMPORARY REMOVABLE, PREFABRICATED PAVEMENT MARKINGS	DMS-8241
TEMPORARY FLEXIBLE, REFLECTIVE ROADWAY MARKER TABS	DMS-8242

A list of prequalified reflective raised pavement markers, non-reflective traffic buttons, roadway marker tabs and other pavement markings can be found at the Material Producer List web address shown on BC(1).

Texas Department of Transportation — Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION PAVEMENT MARKINGS

BC(11)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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date	detailed
4/3/2026	J. GARCIA
designed	checked
D. WILLIAMS	K. KOOIMAN

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY

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project	contract
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sheet of sheets

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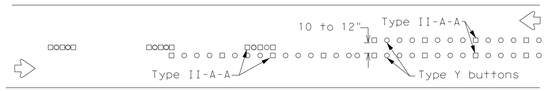
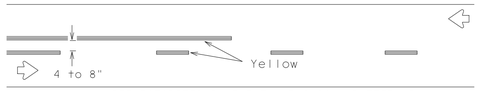
PAVEMENT MARKING PATTERNS

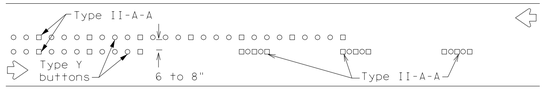
REFLECTORIZED PAVEMENT MARKINGS - PATTERN A



RAISED PAVEMENT MARKERS - PATTERN A



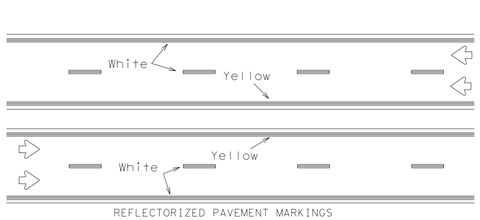
REFLECTORIZED PAVEMENT MARKINGS - PATTERN B



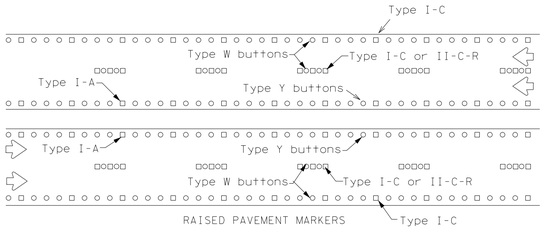
RAISED PAVEMENT MARKERS - PATTERN B

Pattern A is the TXDOT Standard, however Pattern B may be used if approved by the Engineer.
Prefabricated markings may be substituted for reflectorized pavement markings.

CENTER LINE & NO-PASSING ZONE BARRIER LINES FOR TWO-LANE, TWO-WAY HIGHWAYS



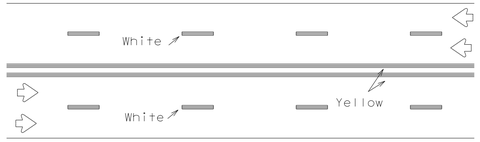
REFLECTORIZED PAVEMENT MARKINGS



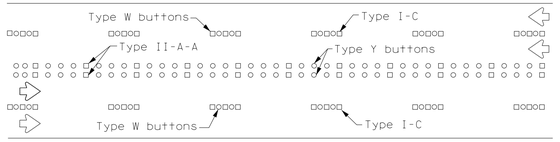
RAISED PAVEMENT MARKERS

Prefabricated markings may be substituted for reflectorized pavement markings.

EDGE & LANE LINES FOR DIVIDED HIGHWAY



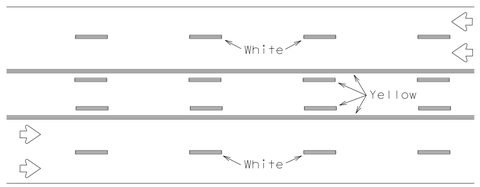
REFLECTORIZED PAVEMENT MARKINGS



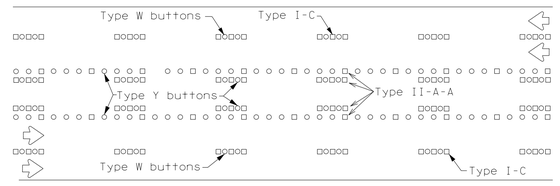
RAISED PAVEMENT MARKERS

Prefabricated markings may be substituted for reflectorized pavement markings.

LANE & CENTER LINES FOR MULTILANE UNDIVIDED HIGHWAYS



REFLECTORIZED PAVEMENT MARKINGS



RAISED PAVEMENT MARKERS

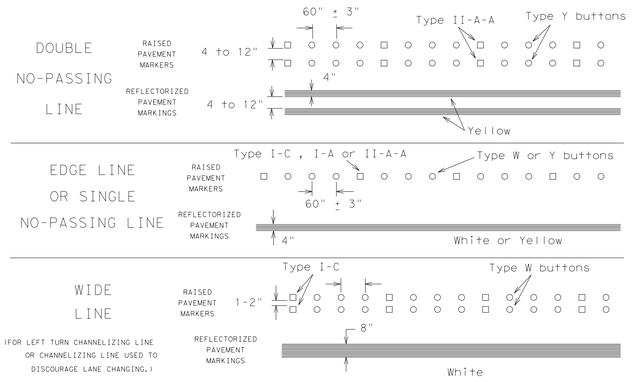
Prefabricated markings may be substituted for reflectorized pavement markings.

TWO-WAY LEFT TURN LANE

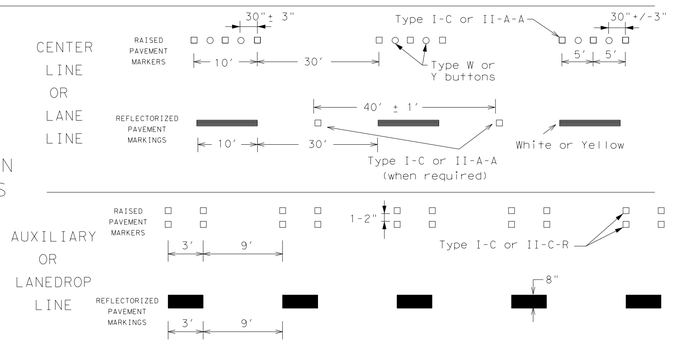
DATE:
FILE:

STANDARD WORK ZONE PAVEMENT MARKINGS DETAILS

SOLID LINES

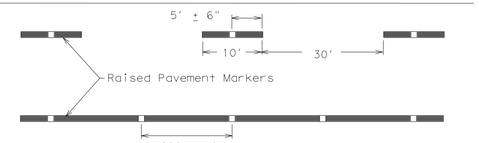


BROKEN LINES



REMOVABLE MARKINGS WITH RAISED PAVEMENT MARKERS

If raised pavement markers are used to supplement REMOVABLE markings, the markers shall be applied to the top of the tape at the approximate mid length of tape used for broken lines or at 20 foot spacing for solid lines. This allows an easier removal of raised pavement markers and tape.



Raised pavement markers used as standard pavement markings shall be from the approved products list and meet the requirements of Item 672 "RAISED PAVEMENT MARKERS."

SHEET 12 OF 12

Texas Department of Transportation — Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION PAVEMENT MARKING PATTERNS

BC(12)-21

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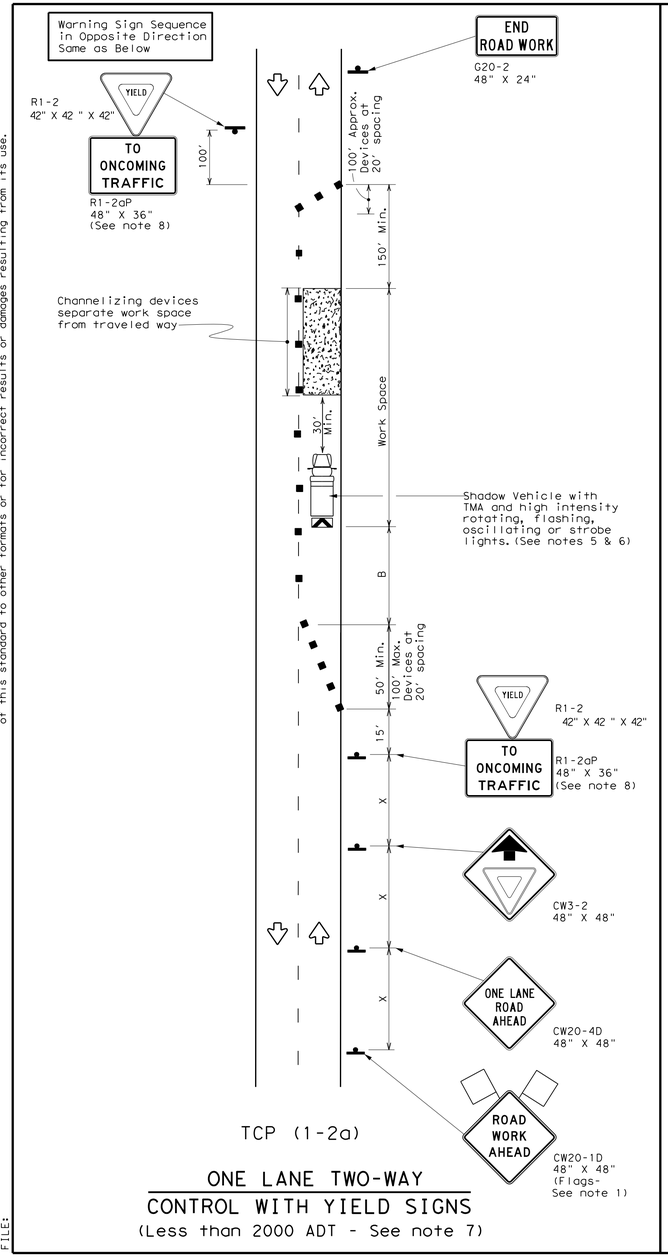
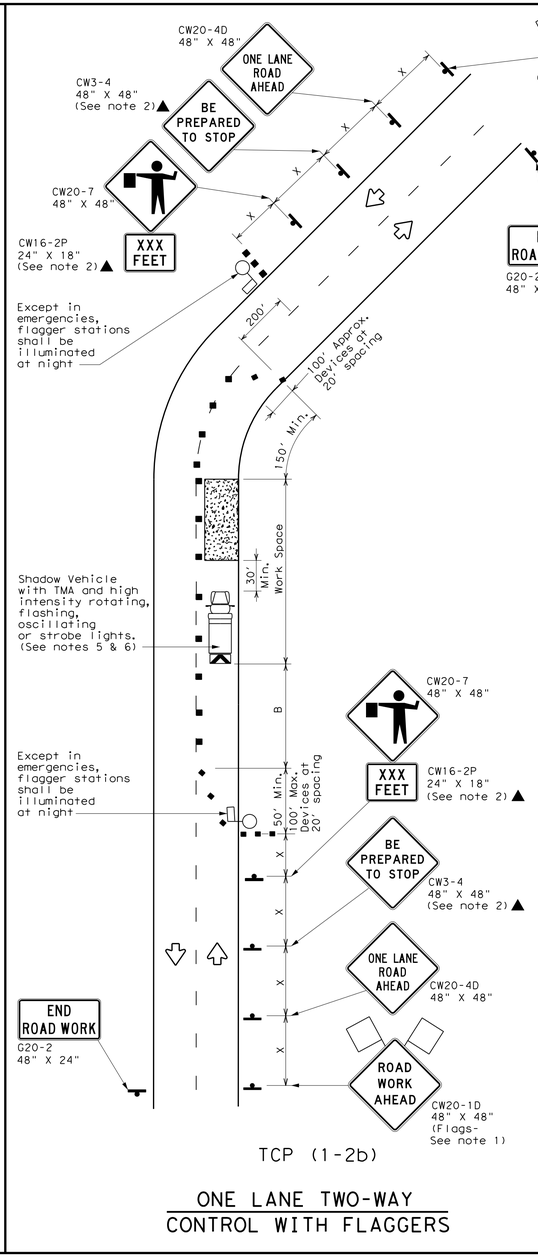


TCP (1-2a)

ONE LANE TWO-WAY
CONTROL WITH YIELD SIGNS
(Less than 2000 ADT - See note 7)



TCP (1-2b)

ONE LANE TWO-WAY
CONTROL WITH FLAGGERS

LEGEND			
	Type 3 Barricade		Channelizing Devices
	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)
	Trailer Mounted Flashing Arrow Board	M	Portable Changeable Message Sign (PCMS)
	Sign		Traffic Flow
	Flag		Flagger

Posted Speed *	Formula	Minimum Desirable Taper Lengths ** 10' Offset	11' Offset	12' Offset	Suggested Maximum Spacing of Channelizing Devices On a Taper	On a Tangent	Minimum Sign Spacing "X" Distance	Suggested Longitudinal Buffer Space "B"	Stopping Sight Distance
30	$L=\frac{WS^2}{60}$	150'	165'	180'	30'	60'	120'	90'	200'
35		205'	225'	245'	35'	70'	160'	120'	250'
40		265'	295'	320'	40'	80'	240'	155'	305'
45	L=WS	450'	495'	540'	45'	90'	320'	195'	360'
50		500'	550'	600'	50'	100'	400'	240'	425'
55		550'	605'	660'	55'	110'	500'	295'	495'
60		600'	660'	720'	60'	120'	600'	350'	570'
65		650'	715'	780'	65'	130'	700'	410'	645'
70		700'	770'	840'	70'	140'	800'	475'	730'
75		750'	825'	900'	75'	150'	900'	540'	820'

* Conventional Roads Only
** Taper lengths have been rounded off.
L=Length of Taper(FT) W=Width of Offset(FT) S=Posted Speed(MPH)

TYPICAL USAGE				
MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
	✓	✓		

GENERAL NOTES

1. Flags attached to signs where shown are REQUIRED.
2. All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
3. The CW3-4 "BE PREPARED TO STOP" sign may be installed after the CW20-4D "ONE LANE ROAD AHEAD" sign, but proper sign spacing shall be maintained.
4. Sign spacing may be increased or an additional CW20-1D "ROAD WORK AHEAD" sign may be used if advance warning ahead of the flagger or R1-2 "YIELD" sign is less than 1500 feet.
5. A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
6. Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect wider work spaces.

TCP (1-2a)

7. R1-2 "YIELD" sign traffic control may be used on projects with approaches that have adequate sight distance. For projects in urban areas, work spaces should be no longer than one half city block. In rural areas on roadways with less than 2000 ADT, work spaces should be no longer than 400 feet.
8. R1-2 "YIELD" sign with R1-2aP "TO ONCOMING TRAFFIC" plaque shall be placed on a support at a 7 foot minimum mounting height.

TCP (1-2b)

9. Flaggers should use two-way radios or other methods of communication to control traffic.
10. Length of work space should be based on the ability of flaggers to communicate.
11. If the work space is located near a horizontal or vertical curve, the buffer distances should be increased in order to maintain adequate stopping sight distance to the flagger and a queue of stopped vehicles (see table above).
12. Channelizing devices on the center-line may be omitted when a pilot car is leading traffic and approved by the Engineer.
13. Flaggers should use 24" STOP/SLOW paddles to control traffic. Flags should be limited to emergency situations.

Texas Department of Transportation — Traffic Operations Division Standard

TRAFFIC CONTROL PLAN
ONE-LANE TWO-WAY
TRAFFIC CONTROL

TCP(1-2)-18

FILE: tcp1-2-18.dgn	DN:	CK:	DW:	CK:
© TxDOT December 1985	CONT	SECT	JOB	HIGHWAY
REVISIONS				
4-90 4-98	DIST	COUNTY		SHEET NO.
2-94 2-12				
1-97 2-18				
152				

no.	date	by	ckd	description
0	04/03/26	DCW	KMK	GMP 1/2: ISSUED FOR BID

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6200 BRIDGE POINT PARKWAY, SUITE 400
AUSTIN, TX 78730
512-872-7130
Burns & McDonnell Engineering Co., Inc.
Firm Reg. No. F-845

date	detailed
4/3/2026	J. GARCIA
designed	checked
D. WILLIAMS	K. KOOIMAN

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY

CIVIL
TxDOT REF STANDARD DETAIL SHEET X

project	contract
187533	

drawing 006C5XX – rev. 0

sheet of sheets

file 187533_XXXCXXX.DGN

DATE:
FILE:

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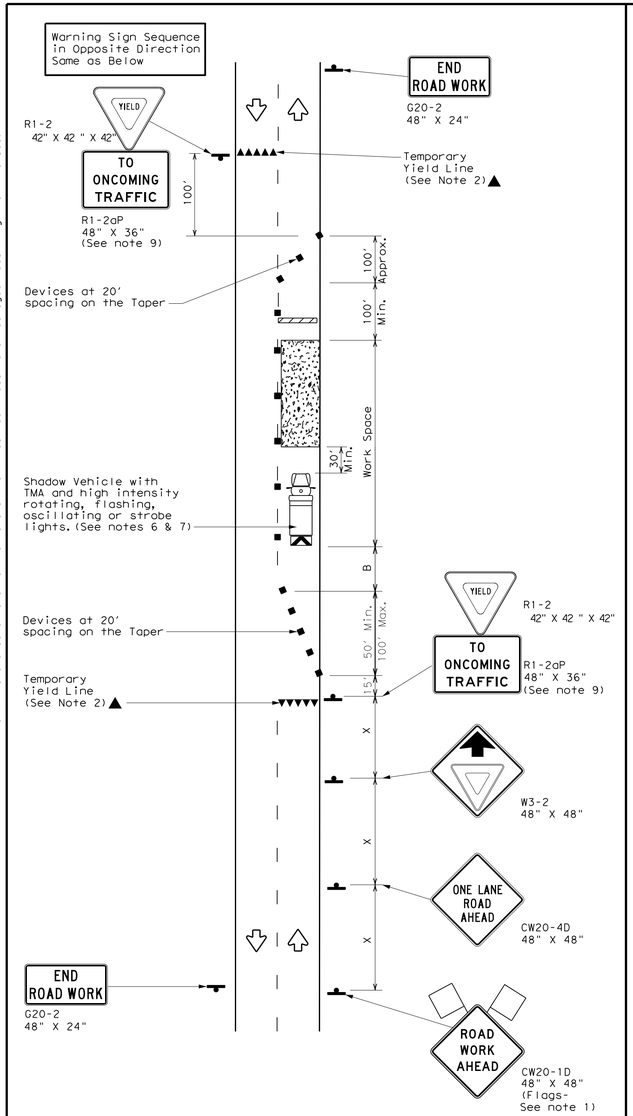


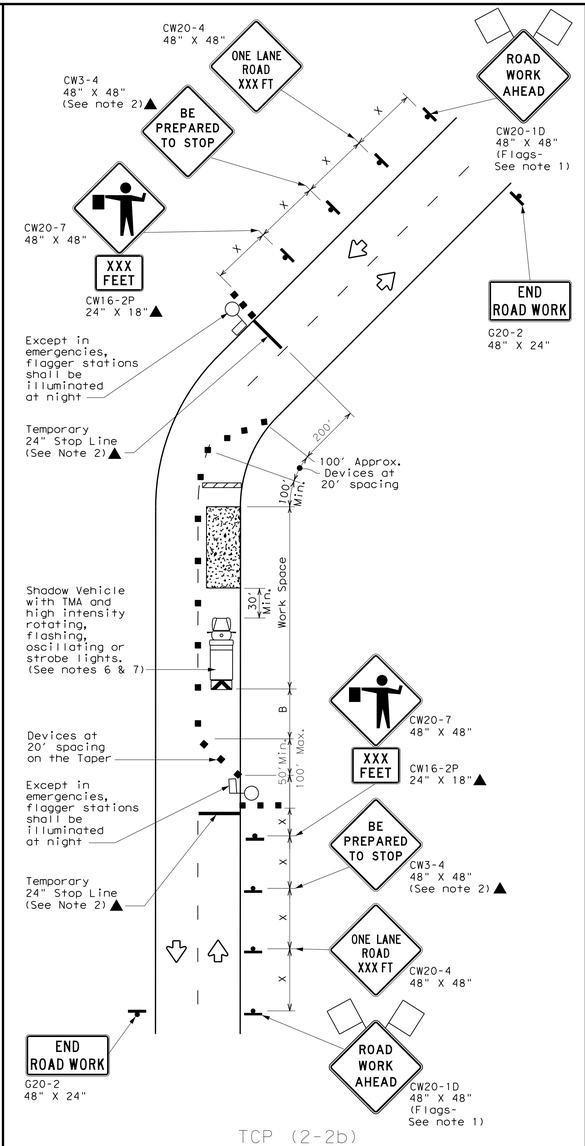
TCP (2-2a)

2-LANE ROADWAY WITHOUT PAVED SHOULDERS

ONE LANE TWO-WAY

CONTROL WITH YIELD SIGNS

(Less than 2000 ADT - See Note 9)



TCP (2-2b)

2-LANE ROADWAY WITHOUT PAVED SHOULDERS

ONE LANE TWO-WAY

CONTROL WITH FLAGGERS

DATE:
FILE:

LEGEND			
	Type 3 Barricade		Channelizing Devices
	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)
	Trailer Mounted Flashing Arrow Board	M	Portable Changeable Message Sign (PCMS)
	Sign		Traffic Flow
	Flag		Flagger

Posted Speed *	Formula	Minimum Desirable Taper Lengths ** 10' Offset	11' Offset	12' Offset	Suggested Maximum Spacing of Channelizing Devices On a Taper	On a Tangent	Minimum Sign Spacing "X" Distance	Suggested Longitudinal Buffer Space "B"	Stopping Sight Distance
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45	L=WS	450'	495'	540'	45'	90'	320'	195'	360'
50		500'	550'	600'	50'	100'	400'	240'	425'
55		550'	605'	660'	55'	110'	500'	295'	495'
60		600'	660'	720'	60'	120'	600'	350'	570'
65		650'	715'	780'	65'	130'	700'	410'	645'
70		700'	770'	840'	70'	140'	800'	475'	730'
75		750'	825'	900'	75'	150'	900'	540'	820'

* Conventional Roads Only

** Taper lengths have been rounded off.
L=Length of Taper(FT) W=Width of Offset(FT) S=Posted Speed(MPH)

TYPICAL USAGE				
MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
	✓	✓	✓	

GENERAL NOTES

1. Flags attached to signs where shown, are REQUIRED.
2. All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
3. The CW3-4 "BE PREPARED TO STOP" sign may be installed after the CW20-4 "ONE LANE ROAD XXX FT" sign, but proper sign spacing shall be maintained.
4. Flaggers should use two-way radios or other methods of communication to control traffic.
5. Length of work space should be based on the ability of flaggers to communicate.
6. A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
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TCP (2-2a)

8. The R1-2 "YIELD" sign traffic control may be used on projects with approaches that have adequate sight distance. For projects in urban areas, work space should be no longer than one half city block. In rural areas, roadways with less than 2000 ADT, work space should be no longer than 400 feet.
9. The R1-2aP "YIELD TO ONCOMING TRAFFIC" sign shall be placed on a support at a 7 foot minimum mounting height.

TCP (2-2b)

10. Channelizing devices on the center line may be omitted when a pilot car is leading traffic and approved by the Engineer.
11. If the work space is located near a horizontal or vertical curve, the buffer distances should be increased in order to maintain stopping sight distance to the flagger and a queue of stopped vehicles. (See table above).
12. Flaggers should use 24" STOP/SLOW paddles to control traffic. Flags should be limited to emergency situtations.

Texas Department of Transportation — Traffic Operations Division Standard

TRAFFIC CONTROL PLAN ONE-LANE TWO-WAY TRAFFIC CONTROL

TCP(2-2)-18

FILE: tcp2-2-18.dgn	DN:	CK:	DW:	CK:
© TxDOT December 1985	CONT	SECT	JOB	HIGHWAY
REVISIONS				
8-95 3-03	DIST	COUNTY		SHEET NO.
1-97 2-12				
4-98 2-18				

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AUSTIN, TX 78730
512-872-7130
Burns & McDonnell Engineering Co., Inc.
Firm Reg. No. F-845

date	detailed
4/3/2026	J. GARCIA
designed	checked
D. WILLIAMS	K. KOOIMAN

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY

CIVIL
TxDOT REF STANDARD DETAIL SHEET X

project	contract
187533	

drawing 006C5XX – rev. 0

sheet of sheets

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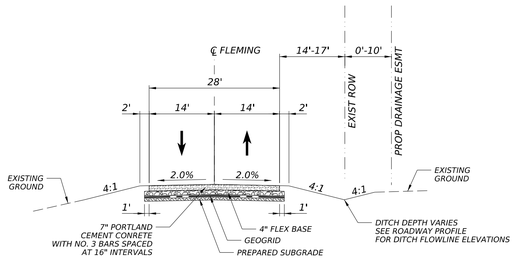
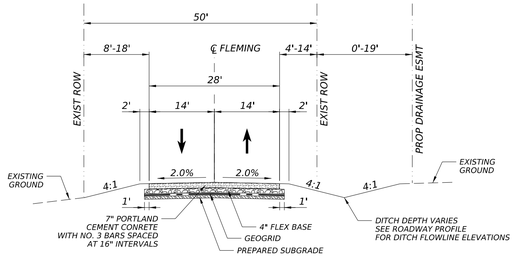


PROPOSED FLEMING PASS

STA 10+13.78 TO STA 11+34.10

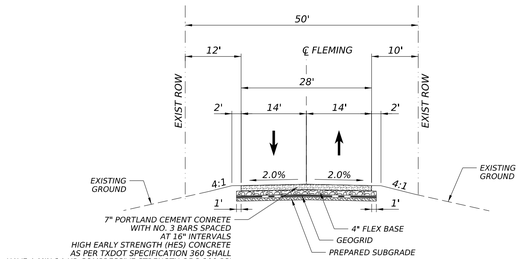
NOT TO SCALE



PROPOSED FLEMING PASS

STA 11+34.10 TO STA 23+81.92

NOT TO SCALE

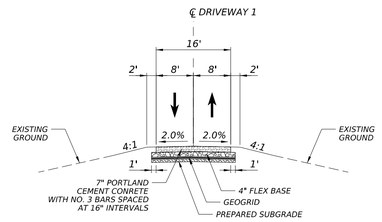


STA 24+17.00 TO STA 24+69.70

PROPOSED FLEMING PASS

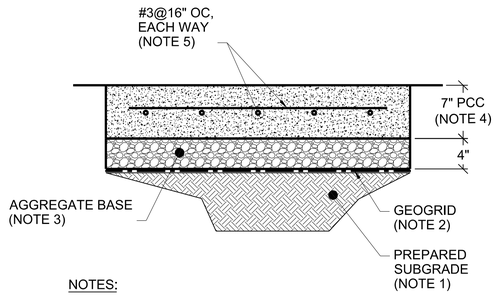
STA 23+81.92 TO STA 24+69.70

NOT TO SCALE



PROPOSED FLEMING PASS DRIVEWAY 1

NOT TO SCALE



NOTES:

1. SUBGRADE SHALL BE PREPARED PER SECTION 31 20 50.
2. GEOGRID SHALL BE TENSAR NX850 OR APPROVED EQUAL, INSTALLED PER MANUFACTURER INSTRUCTIONS.
3. AGGREGATE BASE SHALL BE PER TXDOT STANDARD SPECIFICATION ITEM 247 GRADE 1-2, TYPE A OR D, PLACED PER SECTION 31 20 50.
4. PCC SHALL HAVE A MIN 28-DAY COMPRESSIVE STRENGTH OF 3,500 PSI EXCEPT FOR LIMITS WHERE HIGH EARLY STRENGTH (HES) IS USED.
5. REINFORCING SHALL BE GRADE 60 STEEL PER ASTM A615.

TYPICAL CONCRETE PAVEMENT SECTION

NOT TO SCALE

no.	date	by	ckd	description
0	04/03/26	DCW	KMK	GMP 1/2: ISSUED FOR BID

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512-872-7130
Burns & McDonnell Engineering Co., Inc.
Firm Reg. No. F-845

date	detailed
4/3/2026	J. GARCIA
designed	checked
D. WILLIAMS	K. KOOIMAN

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY

FLEMING PASS
TYPICAL SECTIONS

project	contract
187533	

drawing 001C001 rev. 0

sheet of sheets

file 187533_XXXCXXX.DGN

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CL FLEMING PASS

ALIGNMENT NAME: CL-FLEMING
ALIGNMENT DESCRIPTION: FLEMING PASS CENTERLINE

	STATION	NORTHING	EASTING
ELEMENT: LINEAR			
POT(POT)	10+00.00 R1	13842915.0846	2310075.4978
PC(PC)	12+45.59 R1	13842726.0518	2310232.2800
TANGENTIAL DIRECTION:	S39°40'19.32"E		
TANGENTIAL LENGTH:	245.59		
ELEMENT: CIRCULAR *CL-FLEMING-1*			
PC(PC)	12+45.59 R1	13842726.0518	2310232.2800
PI(PI)	12+56.15 R1	13842717.9257	2310239.0197
CC(CC)		13842502.6145	2309962.8811
PT(PT)	12+66.70 R1	13842709.4082	2310245.2574
RADIUS:	350		
DELTA:	03°27'19.65" RIGHT		
DEGREE OF CURVATURE(ARC):	16°22'12.80"		
LENGTH:	21.11		
TANGENT:	10.56		
CHORD:	21.1		
MIDDLE ORDINATE:	0.16		
EXTERNAL:	0.16		
TANGENT DIRECTION:	S39°40'19.32"E		
RADIAL DIRECTION:	S50°19'40.68"W		
CHORD DIRECTION:	S37°56'39.49"E		
RADIAL DIRECTION:	S53°47'00.33"W		
TANGENT DIRECTION:	S36°12'59.67"E		
ELEMENT: LINEAR			
PT(PT)	12+66.70 R1	13842709.4082	2310245.2574
PC(PC)	13+62.96 R1	13842631.7450	2310302.1328
TANGENTIAL DIRECTION:	S36°12'59.67"E		
TANGENTIAL LENGTH:	96.26		
ELEMENT: CIRCULAR *CL-FLEMING-2*			
PC(PC)	13+62.96 R1	13842631.7450	2310302.1328
PI(PI)	14+56.45 R1	13842556.3204	2310357.3687
CC(CC)		13842832.6303	2310576.4412
PT(PT)	15+45.42 R1	13842519.7396	2310443.4019
RADIUS:	340		
DELTA:	30°44'54.67" LEFT		
DEGREE OF CURVATURE(ARC):	16°51'06.12"		
LENGTH:	182.47		
TANGENT:	93.49		
CHORD:	180.28		
MIDDLE ORDINATE:	12.17		
EXTERNAL:	12.62		
TANGENT DIRECTION:	S36°12'59.67"E		
RADIAL DIRECTION:	S53°47'00.33"W		
CHORD DIRECTION:	S51°35'27.01"E		
RADIAL DIRECTION:	S23°02'05.66"W		
TANGENT DIRECTION:	S66°57'54.34"E		
ELEMENT: LINEAR			
PT(PT)	15+45.42 R1	13842519.7396	2310443.4019
PC(PC)	21+64.21 R1	13842277.6145	2311012.8481
TANGENTIAL DIRECTION:	S66°57'54.34"E		
TANGENTIAL LENGTH:	618.78		
ELEMENT: CIRCULAR *CL-FLEMING-3*			
PC(PC)	21+64.21 R1	13842277.6145	2311012.8481
PI(PI)	22+38.75 R1	13842248.4479	2311081.4442
CC(CC)		13841964.7239	2310879.8089
PT(PT)	23+10.97 R1	13842193.2586	2311131.5466
RADIUS:	340		
DELTA:	24°43'51.72" RIGHT		
DEGREE OF CURVATURE(ARC):	16°51'06.12"		
LENGTH:	146.76		
TANGENT:	74.54		
CHORD:	145.62		
MIDDLE ORDINATE:	7.89		
EXTERNAL:	8.07		
TANGENT DIRECTION:	S66°57'54.34"E		
RADIAL DIRECTION:	S23°02'05.66"W		
CHORD DIRECTION:	S54°35'58.48"E		
RADIAL DIRECTION:	S47°45'57.38"W		
TANGENT DIRECTION:	S42°14'02.62"E		
ELEMENT: LINEAR			
PT(PT)	23+10.97 R1	13842193.2586	2311131.5466
POT(POT)	24+92.18 R1	13842059.0845	2311253.3537
TANGENTIAL DIRECTION:	S42°14'02.62"E		
TANGENTIAL LENGTH:	181.22		

CL DRIVEWAY

ALIGNMENT NAME: CL-DRIVEWAY 1
ALIGNMENT DESCRIPTION: FLEMING PASS DRIVEWAY

	STATION	NORTHING	EASTING
ELEMENT: LINEAR			
POT(POT)	0+57.55 R1	13842827.5251	2310227.8622
PC(PC)	0+64.51 R1	13842821.0709	2310225.2559
TANGENTIAL DIRECTION:	S21°59'22.63"W		
TANGENTIAL LENGTH:	6.96		
ELEMENT: CIRCULAR *CL-DW-1*			
PC(PC)	0+64.51 R1	13842821.0709	2310225.2559
PI(PI)	0+82.44 R1	13842804.4407	2310218.5403
CC(CC)		13842783.6270	2310317.9810
PT(PT)	1+00.00 R1	13842786.5132	2310218.0227
RADIUS:	100		
DELTA:	20°20'08.75" LEFT		
DEGREE OF CURVATURE(ARC):	57°17'44.81"		
LENGTH:	35.49		
TANGENT:	17.93		
CHORD:	35.31		
MIDDLE ORDINATE:	1.57		
EXTERNAL:	1.6		
TANGENT DIRECTION:	S21°59'22.63"W		
RADIAL DIRECTION:	N68°00'37.37"W		
CHORD DIRECTION:	S11°49'18.26"W		
RADIAL DIRECTION:	N88°20'46.11"W		
TANGENT DIRECTION:	S01°39'13.89"W		
ELEMENT: LINEAR			
PT(PT)	1+00.00 R1	13842786.5132	2310218.0227
PC(PC)	1+20.67 R1	13842765.8470	2310217.4260
TANGENTIAL DIRECTION:	S01°39'13.89"W		
TANGENTIAL LENGTH:	20.67		

LEGEND

CL-FLEMING-1 HORIZONTAL ALIGNMENT CURVE NUMBER

no.	date	by	ckd	description
0	04/03/26	DCW	KMK	GMP 1/2: ISSUED FOR BID

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date	detailed
4/3/2026	J. GARCIA
designed	checked
D. WILLIAMS	K. KOOIMAN

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY
FLEMING PASS
HORIZONTAL ALIGNMENT DATA

project	contract
187533	

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sheet of sheets
file 187533_XXXCXXX.DGN

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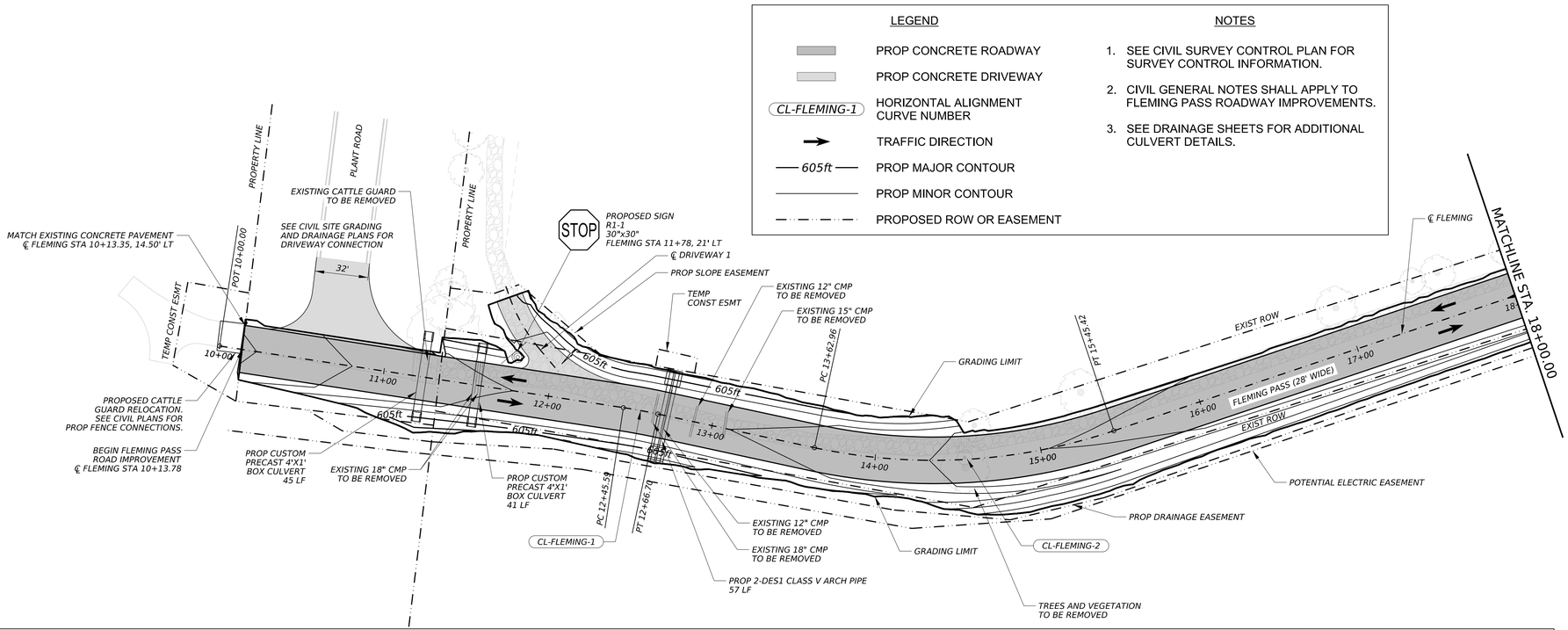

no.	date	by	ckd	description
0	04/03/26	DCW	KMK	GMP 1/2: ISSUED FOR BID

NORTH

0 40' 80'
HORIZONTAL SCALE IN FEET

0 4' 8'
VERTICAL SCALE IN FEET

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THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY
FLEMING PASS
PLAN & PROFILE
BEGIN TO STA 18+00

project	contract
187533	

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sheet X of X sheets

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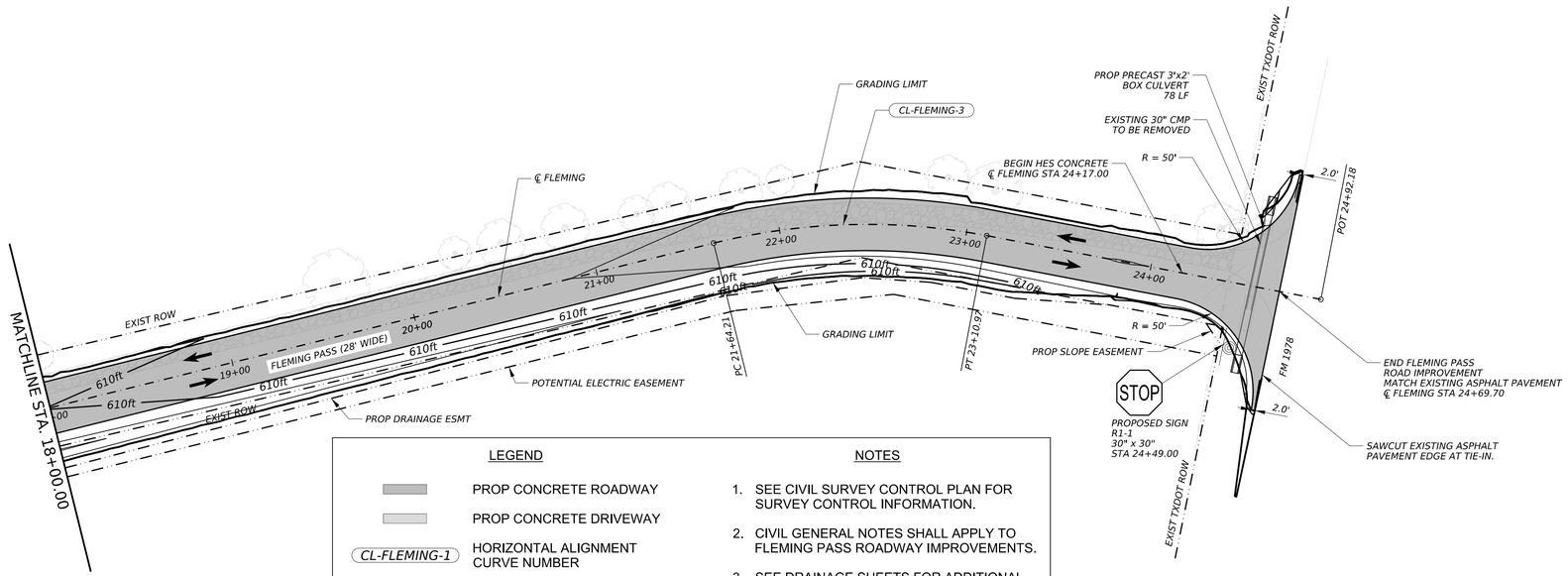
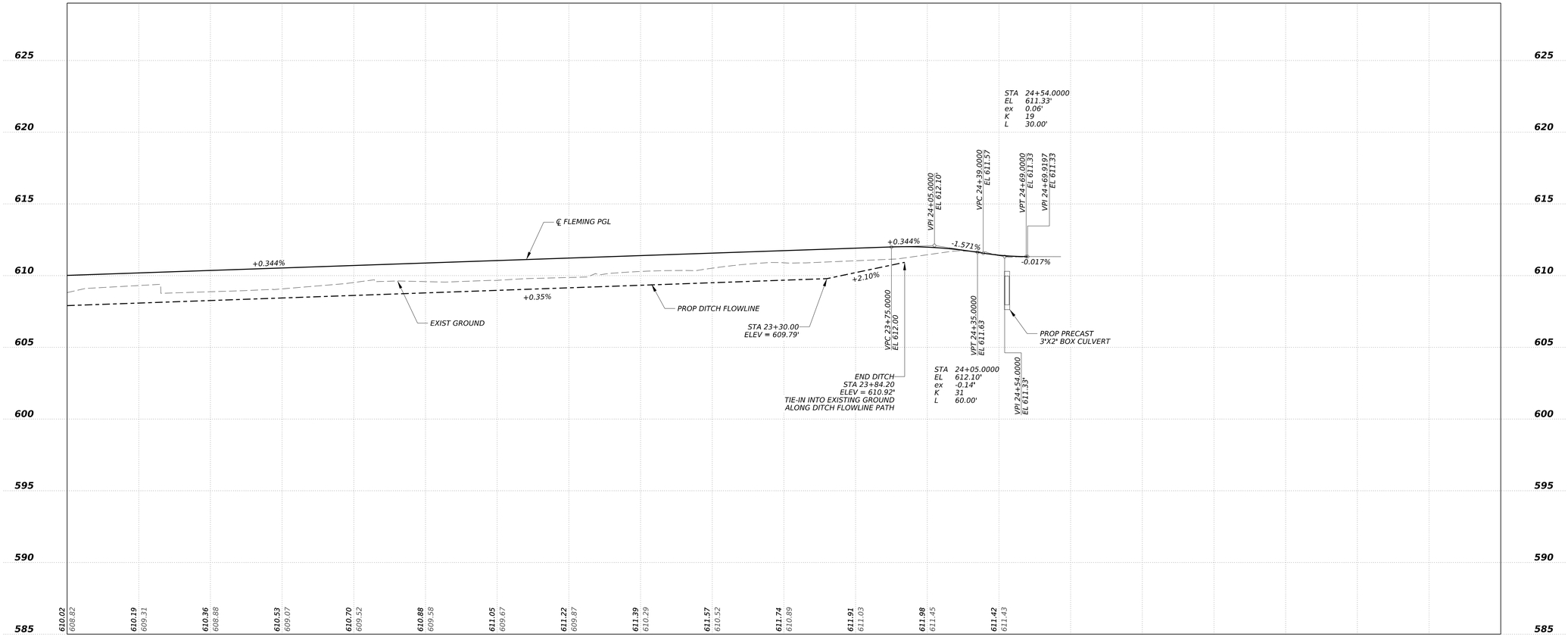


LEGEND

- PROP CONCRETE ROADWAY
- PROP CONCRETE DRIVEWAY
- CL-FLEMING-1 — HORIZONTAL ALIGNMENT CURVE NUMBER
- TRAFFIC DIRECTION
- 605ft — PROP MAJOR CONTOUR
- PROP MINOR CONTOUR
- PROPOSED ROW OR EASEMENT

NOTES

1. SEE CIVIL SURVEY CONTROL PLAN FOR SURVEY CONTROL INFORMATION.
2. CIVIL GENERAL NOTES SHALL APPLY TO FLEMING PASS ROADWAY IMPROVEMENTS.
3. SEE DRAINAGE SHEETS FOR ADDITIONAL CULVERT DETAILS.



no.	date	by	ckd	description
0	04/03/26	DCW	KMK	GMP 1/2: ISSUED FOR BID

NORTH

0 40' 80'
HORIZONTAL SCALE IN FEET

0 4' 8'
VERTICAL SCALE IN FEET

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BURNS McDONNELL
6200 BRIDGE POINT PARKWAY, SUITE 400
AUSTIN, TX 78730
512-872-7130
Burns & McDonnell Engineering Co., Inc.
Firm Reg. No. F-845

date	detailed
4/3/2026	J. GARCIA
designed	checked
D. WILLIAMS	K. KOOIMAN

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY

FLEMING PASS
PLAN & PROFILE
STA 18+00 TO END

project	contract
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LEGEND

- PROP CONCRETE ROADWAY
- PROP CONCRETE DRIVEWAY
- CL-FLEMING-1 — HORIZONTAL ALIGNMENT CURVE NUMBER
- TRAFFIC DIRECTION
- PROPOSED ROW OR EASEMENT

NOTES

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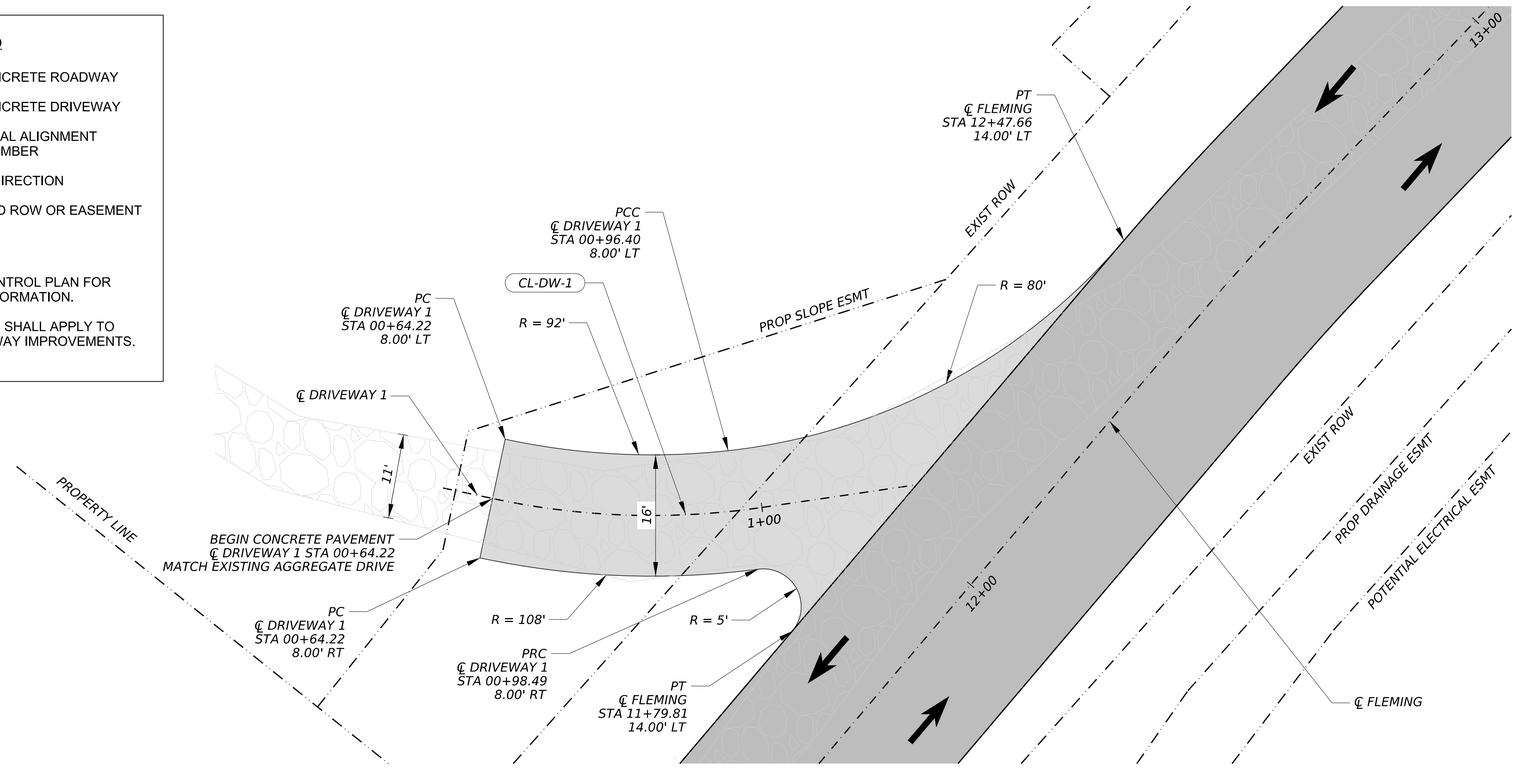
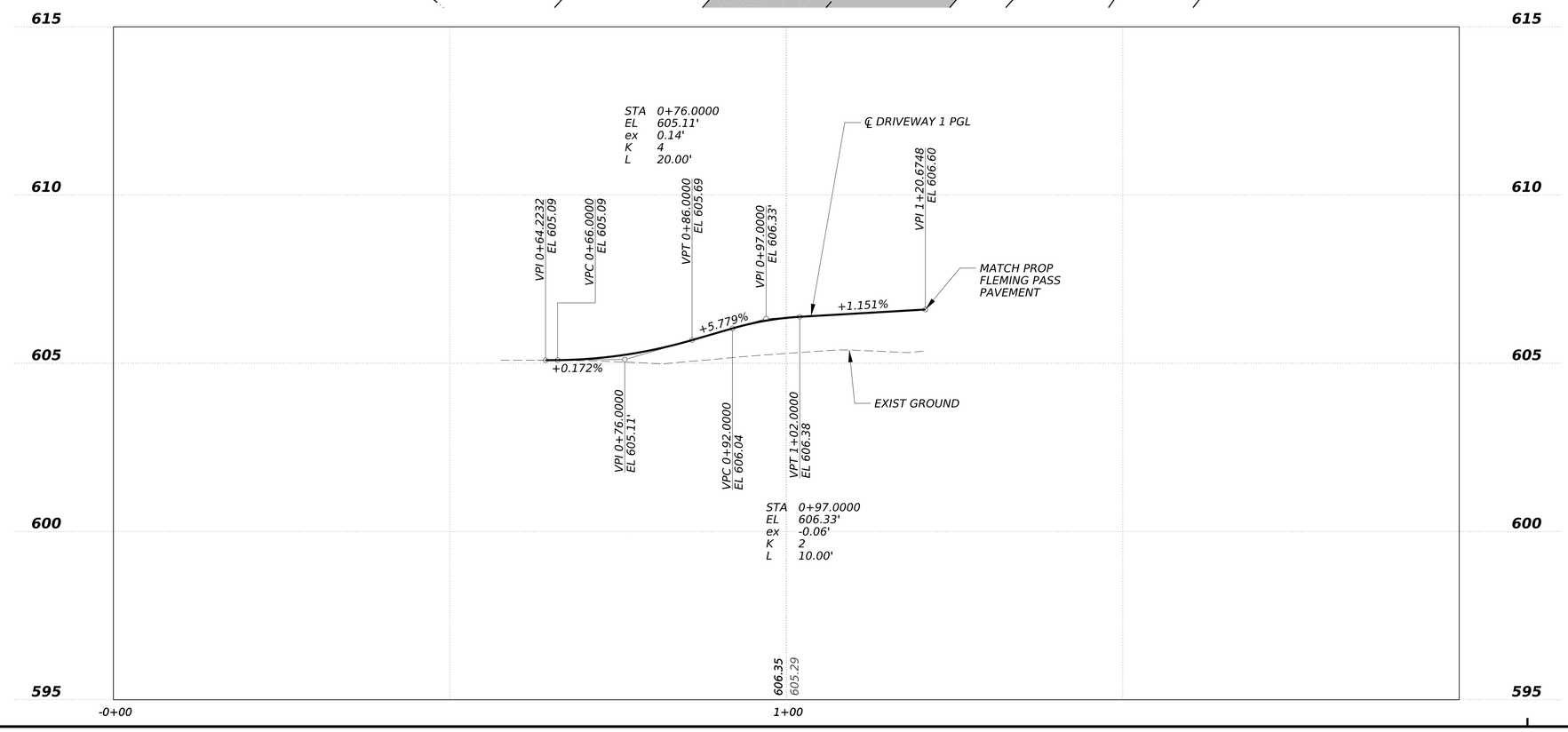
2. CIVIL GENERAL NOTES SHALL APPLY TO FLEMING PASS ROADWAY IMPROVEMENTS.





no.	date	by	ckd	description
0	04/03/26	DCW	KMK	GMP 1/2: ISSUED FOR BID

NORTH

0 10' 20'
HORIZONTAL SCALE IN FEET

0 2' 4'
VERTICAL SCALE IN FEET

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date	detailed
4/3/2026	J. GARCIA
designed	checked
D. WILLIAMS	K. KOOIMAN

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY

FLEMING PASS
DRIVEWAY PLAN AND PROFILE

project	contract
187533	

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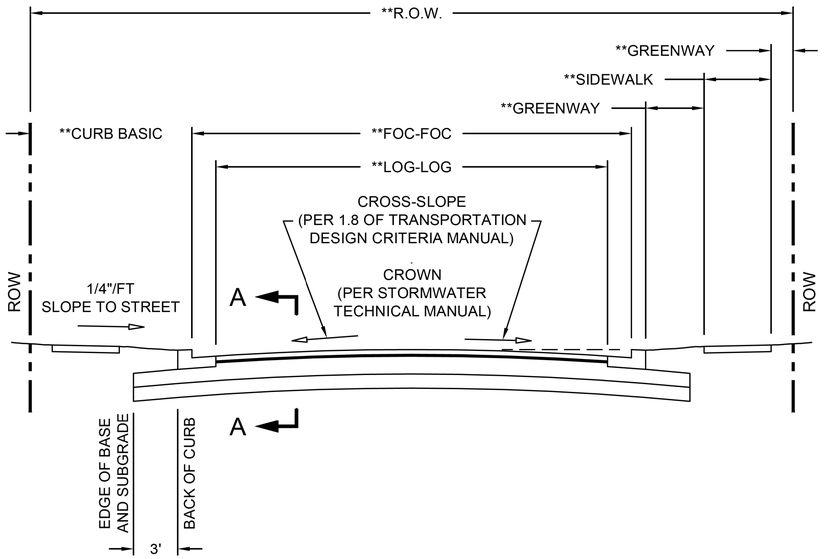

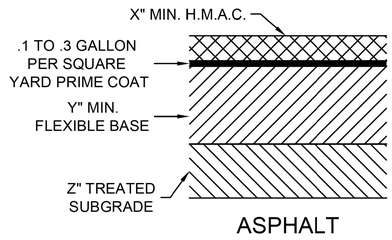

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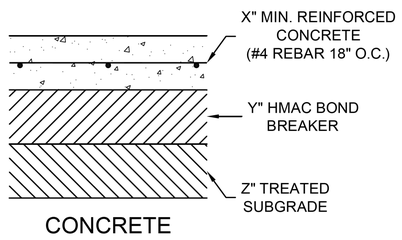

CONCRETE

SECTION A-A

(TYPICAL STREET PAVEMENT)

NOTES:

* 1. REFER TO THE COSM TRANSPORTATION DESIGN MANUAL REQUIREMENTS FOR ALL MINIMUM PAVEMENT LAYER THICKNESS. ACTUAL THICKNESSES TO BE DETERMINED BASED ON COMPUTERIZED PAVEMENT DESIGN.

2. ALL UNPAVED AREA WITHIN THE LIMITS OF CONSTRUCTION SHALL BE SODDED OR SEEDED AS INDICATED PER CITY SPECIFICATION 601S - 609S AS APPLICABLE.

3. SLOPES OF STREET SECTION WILL BE PER THE CURRENT TRANSPORTATION MANUAL. TYPICAL 2% TOWARDS THE CURB AND GUTTER FROM PROPERTY LINE AND PARABOLIC FROM CROWN UNLESS ALTERNATE CROSS SECTION PROPOSED.

** 4. ALL WIDTH AND SPACING WILL BE PER CURRENT CITY CODE / DESIGN MANUAL.

The City of San Marcos Engineering and Capital Improvements	CURRENT AS OF 1/1/2024	TYPICAL STREET SECTION	
RECORD COPY SIGNED BY LAURIE MOYER, P.E.	1/1/2022 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 1000S-10-SM 1 OF 1

no.	date	by	ckd	description
0	04/03/26	DCW	KMK	GMP 1/2: ISSUED FOR BID

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512-872-7130
Burns & McDonnell Engineering Co., Inc.
Firm Reg. No. F-845

date	detailed
4/3/2026	J. GARCIA
designed	checked
D. WILLIAMS	K. KOOIMAN

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY

CIVIL
COSM REF STANDARD DETAIL SHEET X

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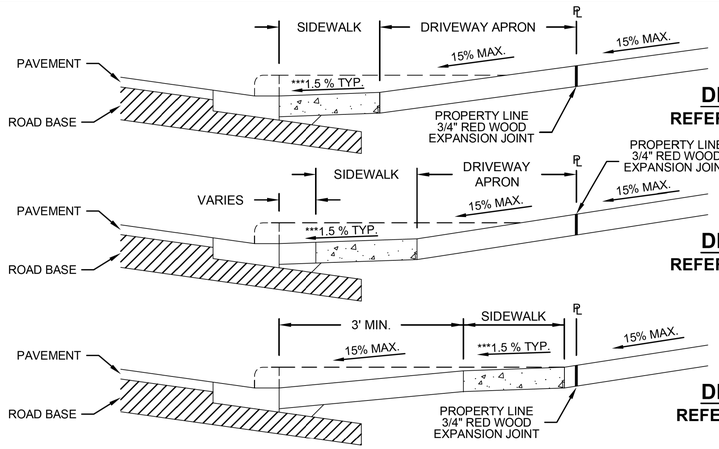
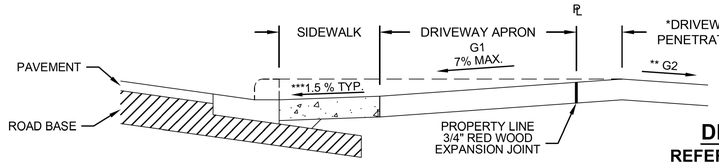


DETAIL: 1C
REFERENCE: 1A & 1B

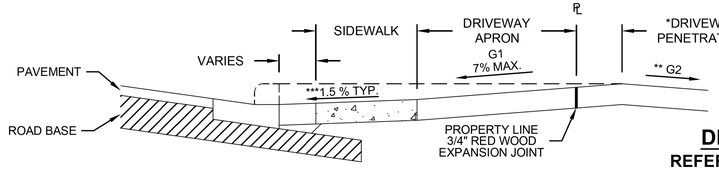
DETAIL: 2C
REFERENCE: 2A & 2B

DETAIL: 3C
REFERENCE: 3A, 3B & 3C

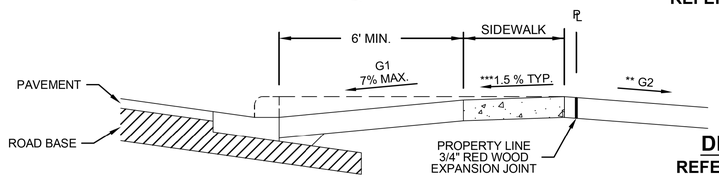
SECTION A-A POSITIVE SITE DRAINAGE



DETAIL: 1D
REFERENCE: 1A & 1B



DETAIL: 2D
REFERENCE: 2A & 2B



DETAIL: 3D
REFERENCE: 3A, 3B & 3C

SECTION A-A NEGATIVE SITE DRAINAGE

*DRIVEWAY PENETRATION WILL EXTEND INTO THE PROPERTY UNTIL GRADING IS HIGHER THAN THAT OF THE CURB AT THE MAXIMUM G1 SLOPE. LIMITS OF PAVEMENT WILL EXTEND TO LIMITS OF DRIVEWAY PENETRATION.

** $|G1 - G2| \leq 15\%$

*** 1.5% TYP., 1% MIN., 2% MAX.

The City of San Marcos Engineering and Capital Improvements	CURRENT AS OF 1/1/2024	DRIVEWAYS - COMMON DETAILS	
RECORD COPY SIGNED BY	1/1/2021	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 433S-A-SM
LAURIE MOYER, P.E.	ADOPTED		1 OF 2

DRIVEWAY	CONCRETE THICKNESS	REINFORCEMENT	DRIVEWAY BASE
TYPE I	6" CLASS A 3,000 PSI	#3 BARS PLACED ON CHAIRS AT MID DEPTH OF SLAB AT NO MORE THAN 18" O.C. BOTH DIRECTIONS	2" COMPACTED SAND
TYPE II	7" CLASS C 3,600 PSI	#4 BARS PLACED ON CHAIRS AT MID DEPTH OF SLAB AT NO MORE THAN 18" O.C. BOTH DIRECTIONS	2" COMPACTED SAND

NOTES:

A. NEW PAVEMENT WILL MATCH EXISTING PAVEMENT THICKNESS AND TYPE.
B. IN NO INSTANCE SHALL THE REBAR BE PLACED DIRECTLY ON THE SUBGRADE, SAND CUSHION LAYER OR CLOSER THAN 2" TO THE OUTSIDE EDGE OF THE CONCRETE.

NOTES:

1. IF DIMENSION IS LESS THAN 5', REMOVE CURB AND GUTTER TO EXISTING JOINT AND POUR MONOLITHICALLY WITH DRIVEWAY. (SEE SHEET 1)
2. ALL DRIVEWAY WILL HAVE A CONTROL JOINT DOWN CENTER OF DRIVEWAY AND ON BOTH SIDES OF THE SIDEWALK PATH ACROSS THE DRIVEWAY. (SEE SHEET 3)
3. WHILE THE PROPERTY OWNER REMAINS RESPONSIBLE FOR GRADE BREAKS WITHIN PRIVATE PROPERTY, THE FIRE DEPARTMENT SHALL BE CONSULTED WHERE THE DRIVEWAY IS ESSENTIAL TO EMERGENCY VEHICLE ACCESS AND "G2 IS GREATER THAN 15%."
4. DRIVEWAY WIDTHS AND RADIUS DIMENSIONS, ONE/TWO WAY TRAVEL REQUIREMENTS, AND GEOMETRIC LAY-OUT ARE HIGHLY VARIABLE, SUBJECT TO SITE SPECIFIC CONDITIONS AND REQUIREMENTS. SEE TRANSPORTATION CRITERIA MANUAL SECTION 5 "DRIVEWAYS" IF CONFLICT WITH DETAIL.
5. IF THE BASE IS OVER-EXCAVATED WHERE THE CURB AND GUTTER WERE REMOVED, BACKFILL WITH CONCRETE MONOLITHICALLY WITH THE DRIVEWAY.
6. DRIVEWAY SHALL NOT BE CONSTRUCTED WITHIN THE CURB RETURN OF A STREET INTERSECTION.
7. WATER METER BOXES AND WASTEWATER CLEAN OUTS ARE PROHIBITED FROM BEING LOCATED IN DRIVEWAY AREAS.
8. PAY ITEM: ASPHALT TRANSITION, LAYDOWN CURB AND GUTTER WILL BE PAID FOR AS SEPARATE LINE ITEM UNLESS NOTED ON PLANS. CURB AND GUTTER INSTALLED ON THE RADIUS OR ALONG THE RAMPS WILL BE SUBSIDIARY TO DRIVEWAY LINE ITEM.
9. ALL NEW DRIVEWAYS SHALL BE CONSTRUCTED PER DETAIL 433S-AR-SM, DRIVEWAYS - RADIUS CONNECTION 433S-AR-SM EXCEPT IN NEW SUBDIVISIONS (TYPICALLY) WHERE HOUSES ARE BUILT AFTER THE CURB IS INSTALLED.
10. IF BOTH OF THE FOLLOWING CONDITIONS ARE MET, THEN DETAIL 433S-AF-SM - DRIVEWAYS - FLARED CONNECTION MAY BE USED:
    A) THE DRIVEWAY CLASSIFIED AS TYPE 1.
    B) THERE AN EXISTING CURB ALREADY INSTALLED AT THE PROPOSED DRIVEWAY LOCATION.

REFERENCES
DETAIL 430S-2-SM
DETAIL 430S-3-SM

The City of San Marcos Engineering and Capital Improvements	CURRENT AS OF 1/1/2024	DRIVEWAYS - COMMON DETAILS	
RECORD COPY SIGNED BY	1/1/2021	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 433S-A-SM
LAURIE MOYER, P.E.	ADOPTED		2 OF 2

no.	date	by	ckd	description
0	04/03/26	DCW	KMK	GMP 1/2: ISSUED FOR BID

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6200 BRIDGE POINT PARKWAY, SUITE 400
AUSTIN, TX 78730
512-872-7130
Burns & McDonnell Engineering Co., Inc.
Firm Reg. No. F-845

date	detailed
4/3/2026	J. GARCIA
designed	checked
D. WILLIAMS	K. KOOIMAN

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY

CIVIL
COSM REF STANDARD DETAIL SHEET X

project	contract
187533	

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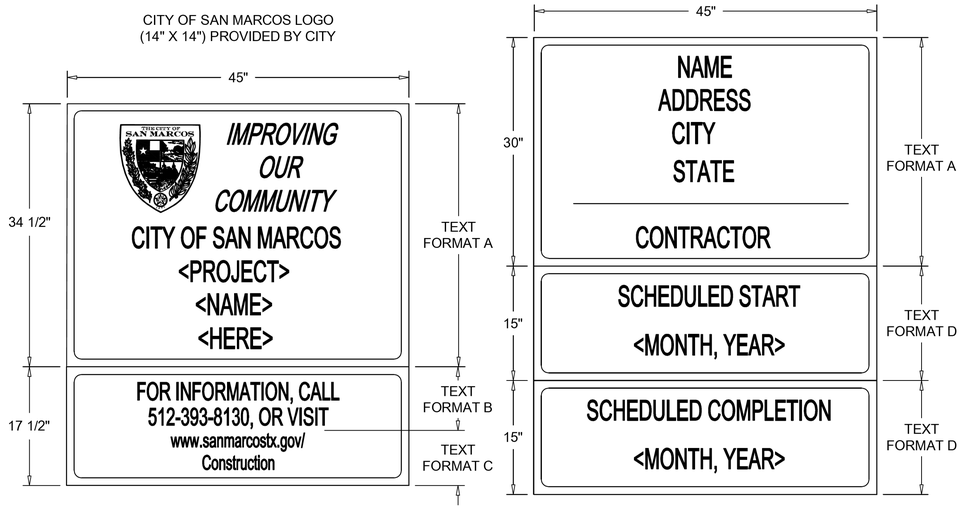
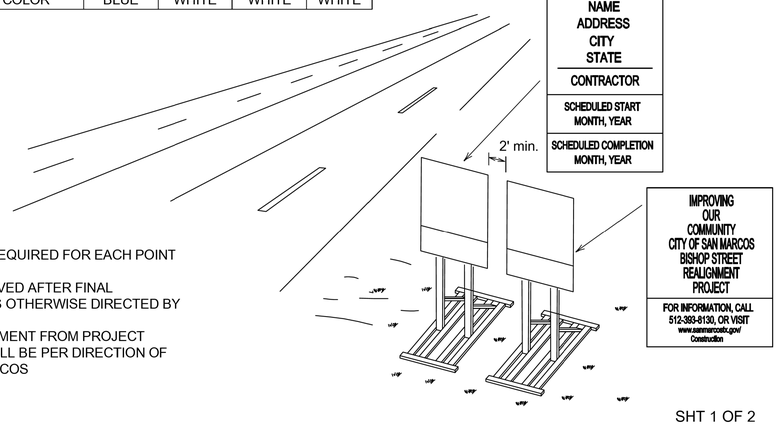
CITY OF SAN MARCOS LOGO
(14" X 14") PROVIDED BY CITY



TEXT FORMAT				
FORMAT TYPE	A	B	C	D
SPACE BETWEEN TEXT AND EDGE OF SIGN TOP AND BOTTOM	2"	2"	2"	3"
TEXT SIZE	3"	2 1/2"	2"	3"
SPACE BETWEEN TEXT	1 1/2"	1 1/2"	1 1/2"	3"
BORDER THICKNESS WITH 1" RADIUS AT CORNERS	1"	1"	1"	1"
BACKGROUND COLOR	WHITE	BLUE	BLUE	BLUE
LEGEND AND BORDER COLOR	BLUE	WHITE	WHITE	WHITE

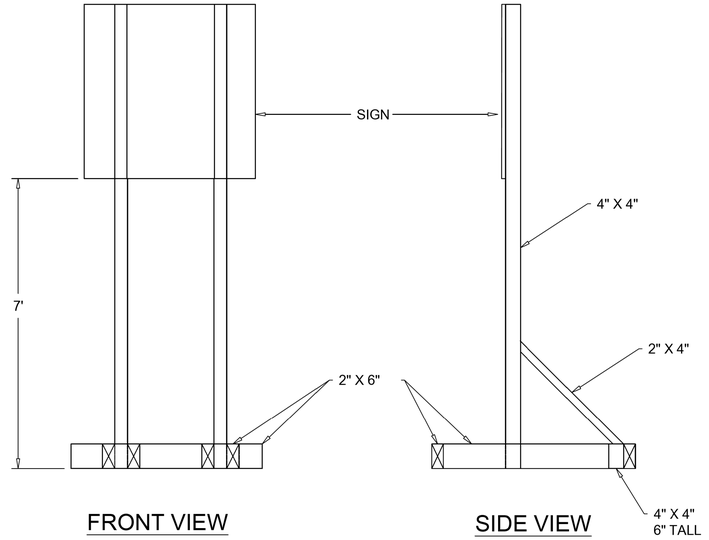
FOR MORE DETAIL ON MOVABLE SIGN SEE SHT 2 OF 2

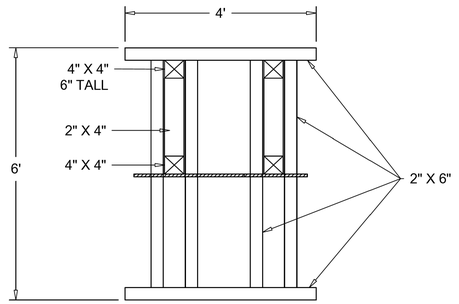


NOTES:
1. ONE PAIR OF SIGNS REQUIRED FOR EACH POINT OF INGRESS.
2. SIGN SHALL BE REMOVED AFTER FINAL ACCEPTANCE UNLESS OTHERWISE DIRECTED BY OWNER.
3. DIMENSION OF PLACEMENT FROM PROJECT LIMITS AND CURB SHALL BE PER DIRECTION OF THE CITY OF SAN MARCOS

SHT 1 OF 2

The City of San Marcos Engineering and Capital Improvements	CURRENT AS OF 1/1/2024	PROJECT INFORMATION SIGNS	
RECORDED COPY SIGNED BY LAURIE MOYER, P.E.	3-16-2015 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD	802S-2-SM N.T.S. STANDARD DETAIL





NOTES:
1. ALL MATERIALS SHALL BE FURNISHED BY THE CONTRACTOR WITH THE EXCEPTION OF THE CITY OF SAN MARCOS SEAL WHICH IS FURNISHED BY THE CITY.
2. LUMBER DIMENSIONS ARE NOMINAL.
3. THE MOVABLE SIGN MUST MEET THE SPECIFICATION FROM THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

SHT 2 OF 2

The City of San Marcos Engineering and Capital Improvements	CURRENT AS OF 1/1/2024	PROJECT INFORMATION SIGNS	
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designed	checked
D. WILLIAMS	K. KOOIMAN

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY

CIVIL
COSM REF STANDARD DETAIL SHEET X

project	contract
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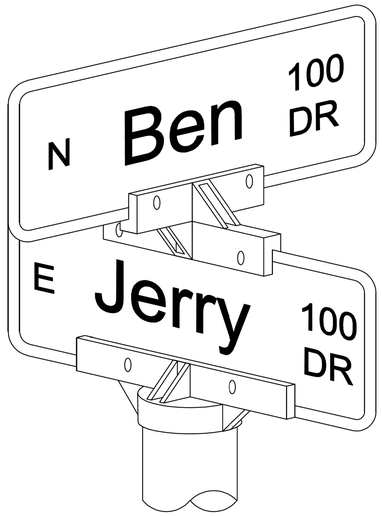
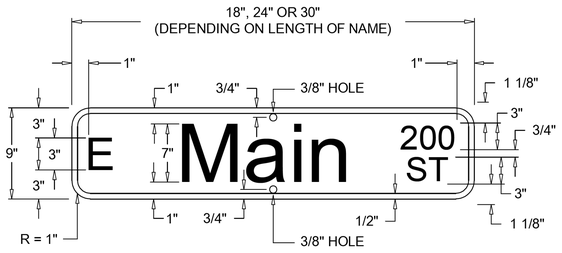




OPTIONAL PLAQUE	
SYMBOL	WHITE REFLECTIVE
BORDER	WHITE REFLECTIVE
BACKGROUND	GREEN REFLECTIVE

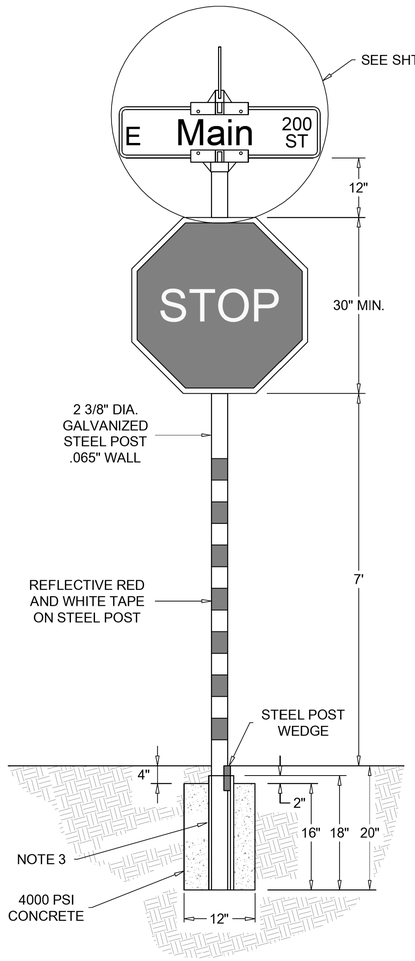
SPECIFICATION REFERENCE TABLE	
MATERIALS AND TESTS DIVISION SPECIFICATIONS	
ALUMINUM SIGN BLANKS	D-9-7110
REFLECTIVE SHEETING, TYPE C (HIGH SPECIFIC INTENSITY)	D-9-8300

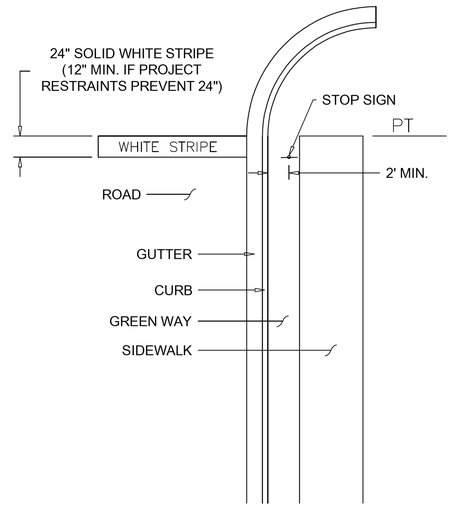
NOTES:

1. THE ALPHABETS AND LATERAL SPACING BETWEEN LETTERS AND NUMERALS SHALL CONFORM WITH THE TEXAS "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS", LATEST EDITION, AND ANY APPROVED CHANGES THERETO. LATERAL SPACING OF TEXT SHALL PROVIDE A BALANCED APPEARANCE. ALL MATERIALS SHALL CONFORM TO TXDOT DEPARTMENT SPECIFICATIONS
2. LEGEND SHALL BE APPLIED BY REVERSE SCREENING PROCESS WITH TRANSPARENT COLORED INK. CUT-OUT WHITE REFLECTIVE SHEETING APPLIED TO COLORED BACKGROUND OR COMBINATION THEREOF. BACKGROUND SHALL BE REFLECTIVE SHEETING (TYPE C).
3. SIGN BLANKS SHALL BE 0.080" THICK AND ONE PIECE SHEET ALUMINUM ALLOY CONFORMING WITH TXDOT DEPARTMENT SPECIFICATION "ALUMINUM SIGNS (TYPE A)."

SHT 1 OF 2

The City of San Marcos Engineering and Capital Improvements	CURRENT AS OF 1/1/2024	GROUND MOUNTED TRAFFIC AND STREET NAME SIGNS	
RECORDED COPY SIGNED BY LAURIE MOYER, P.E.	3-16-2015 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD	824-2-SM N.T.S. STANDARD DETAIL





NOTES:

1. SIGNS ON STATE FACILITIES SHALL CONFORM TO TXDOT STANDARDS.
2. DISTANCE FROM THE EDGE OF THE STREET POST TO THE FACE OF THE CURB SHALL BE A MINIMUM OF 2'.
3. SLEEVE WILL BE 18" GALVANIZED STEEL PIPE WITH O.D. 2 7/8" AND I.D. 2 5/8"

SHT 2 OF 2

The City of San Marcos Engineering and Capital Improvements	CURRENT AS OF 1/1/2024	GROUND MOUNTED TRAFFIC AND STREET NAME SIGNS	
RECORDED COPY SIGNED BY LAURIE MOYER, P.E.	3-16-2015 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD	824-2-SM N.T.S. STANDARD DETAIL

no.	date	by	ckd	description
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6200 BRIDGE POINT PARKWAY, SUITE 400
AUSTIN, TX 78730
512-872-7130
Burns & McDonnell Engineering Co., Inc.
Firm Reg. No. F-845

date	detailed
4/3/2026	J. GARCIA
designed	checked
D. WILLIAMS	K. KOOIMAN

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY

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187533	

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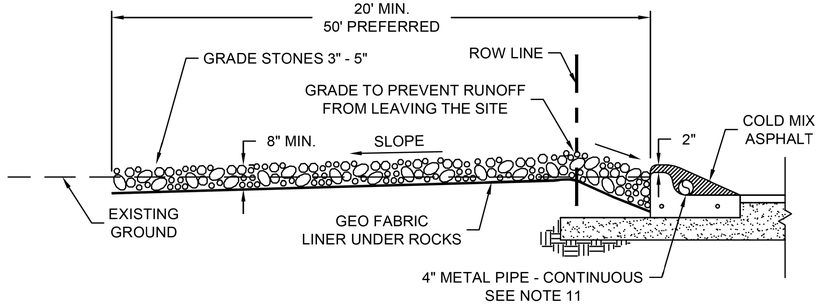
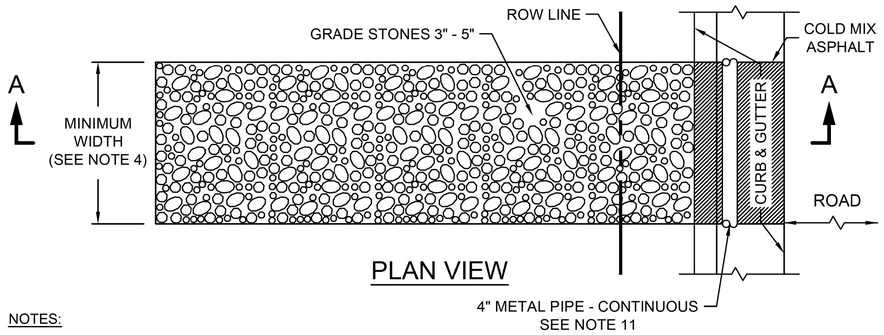


PROFILE SECTION A-A



PLAN VIEW

NOTES:

1. STONE SIZE: 3-5" OPEN GRADED ROCK.
2. LENGTH: 50' PREFERRED OR AS EFFECTIVE BUT NOT LESS THAN 20'.
3. THICKNESS: NOT LESS THAN 8".
4. WIDTH: NOT LESS THAN FULL WIDTH OF ALL POINTS OF INGRESS/EGRESS.
5. DIMENSIONS OF SITE WILL DICTATE THE DIMENSIONS OF THE STABILIZED CONSTRUCTION ENTRANCES IF THE PREFERRED DIMENSIONS ARE NOT POSSIBLE ON SITE.
6. WASHING: WHEN NECESSARY, VEHICLE WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC ROADWAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED TRAP OR SEDIMENT BASIN. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH OR WATERCOURSE USING APPROVED METHODS.
7. MAINTENANCE: THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC ROADWAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND, AS WELL AS REPAIR AND CLEAN OUT OF ANY MEASUREMENT DEVICES USED TO TRAP SEDIMENT. ALL SEDIMENT THAT IS SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC ROADWAY MUST BE REMOVED IMMEDIATELY.
8. DRAINAGE: ENTRANCE MUST BE PROPERLY GRADED OR INCORPORATE A DRAINAGE SWALE TO PREVENT RUNOFF FROM LEAVING THE CONSTRUCTION SITE.
9. WHEN ALL SITE WORK IS COMPLETED, REMOVE STABILIZED CONSTRUCTION ENTRANCE COMPLETELY. REGRADE TO ORIGINAL CONDITION, ELEVATION AND RESTORE TO MATCH EXISTING OR PROPOSED CONDITIONS.
10. TOP OF GRADE STONES SHALL MATCH TOP OF EXISTING PAVEMENT OR CURB. COLD MIX ASPHALT & 4" METAL PIPE OR ALTERNATIVE WILL NOT BE REQUIRED WHERE THERE IS NO CATCH OR SPILL CURB.
11. PRE-FABRICATED CURB RAMPS ARE AN ACCEPTABLE ALTERNATIVE TO COLD MIX ASPHALT AND 4" METAL PIPE.

The City of San Marcos Engineering and Capital Improvements	CURRENT AS OF 1/1/2024	STABILIZED CONSTRUCTION ENTRANCE	
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4/3/2026	J. GARCIA
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THE CITY OF SAN MARCOS

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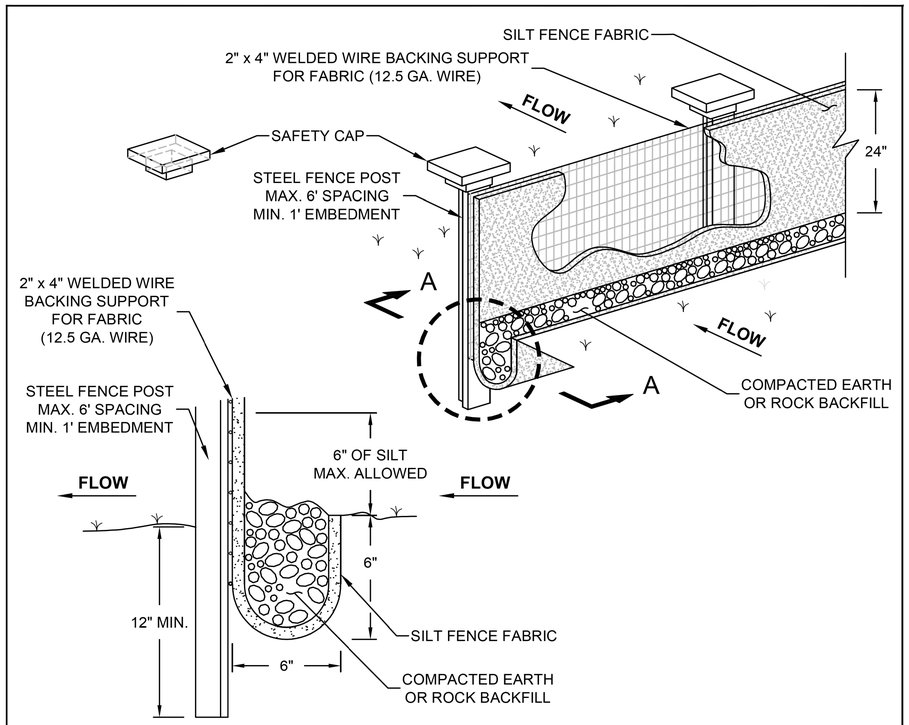
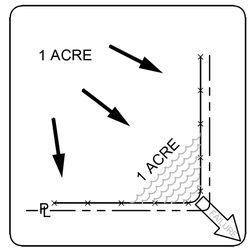


SECTION A-A

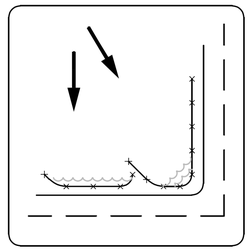
NOTES:

1. STEEL POSTS WHICH SUPPORT THE SILT FENCE SHALL BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POSTS SHALL MATCH THE TOP OF THE FENCE. POSTS MUST BE EMBEDDED A MINIMUM OF 1'.
2. THE TOE OF THE SILT FENCE SHALL BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWNSLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW.
3. THE TRENCH MUST BE A MINIMUM OF 6" DEEP AND 6" WIDE TO ALLOW FOR THE SILT FENCE FABRIC TO BE LAID IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.
4. SILT FENCE SHOULD BE SECURELY FASTENED TO EACH STEEL SUPPORT POST OR TO WOVEN WIRE, WHICH IS IN TURN ATTACHED TO THE STEEL FENCE POST.
5. INSPECTION SHALL BE MADE WEEKLY AND REPAIR OR REPLACEMENT SHALL BE MADE WITHIN 24 HOURS OF INSPECTION.
6. SILT FENCE SHALL BE REMOVED WHEN THE SITE IS PERMANENTLY STABILIZED SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.
7. ACCUMULATED SILT SHALL BE REMOVED WITHIN 24 HOURS WHEN IT REACHES A DEPTH OF 6" OR AS DIRECTED BY OWNER. THE SILT SHALL BE DISPOSED OF ON AN APPROVED SITE AND IN SUCH A MANNER THAT WILL NOT CONTRIBUTE TO ADDITIONAL SILTATION.
8. INSTALL J-HOOK SPACING PER ENGINEER'S DESIGN , BUT NOT TO EXCEED 200'.

The City of San Marcos Engineering and Capital Improvements	CURRENT AS OF 1/1/2024	SILT FENCE	
RECORD COPY SIGNED BY LAURIE MOYER, P.E.	1/1/2020 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 642S-1-SM 1 OF 2

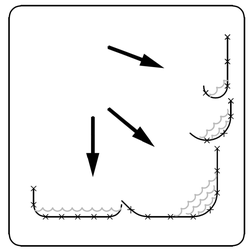


INCORRECT - DO NOT LAYOUT "PERIMETER CONTROL" SILT FENCE ALONG PROPERTY LINES. ALL SEDIMENT LADEN RUNOFF WILL CONCENTRATE AND OVERWHELM THE SYSTEM.



CORRECT - INSTALL J-HOOKS

SILT FENCE TURNBACK DETAIL

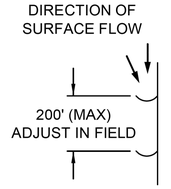


CORRECT - DISCREET SEGMENTS OF SILT FENCE INSTALLED WITH J-HOOKS OR 'SMILES' WILL BE MUCH MORE EFFECTIVE.

SILT FENCE PLACEMENT FOR PERIMETER CONTROL

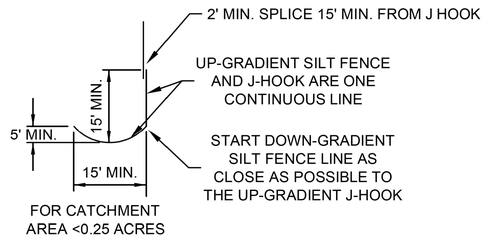
PLAN VIEW

I. SPACING REQUIREMENTS:



NOTE: SEE ENGINEER'S DESIGN PLANS FOR SPACING. MAX SPACING SHALL BE 200'

II. SIZING REQUIREMENTS:



The City of San Marcos Engineering and Capital Improvements	CURRENT AS OF 1/1/2024	SILT FENCE	
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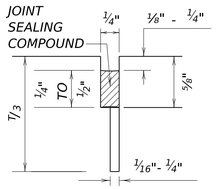
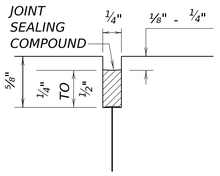
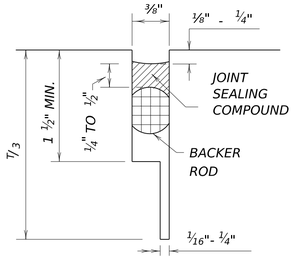
METHOD B: JOINT SEALING COMPOUND



LONGITUDINAL SAWED CONTRACTION JOINT



LONGITUDINAL OR TRANSVERSE CONSTRUCTION JOINT



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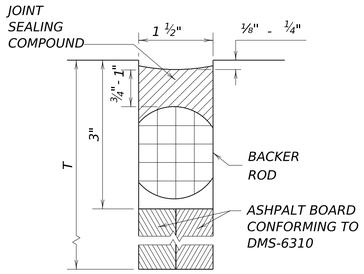
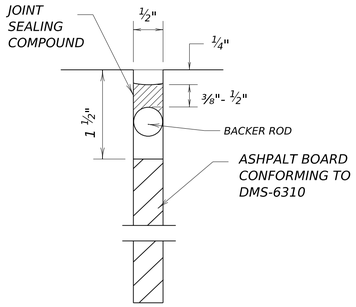
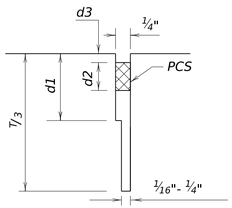


TRANSVERSE FORMED EXPANSION JOINT



FORMED ISOLATION JOINT

METHOD A: PREFORMED COMPRESSION SEALS (PCS)(DMS-6310 CLASS 6)



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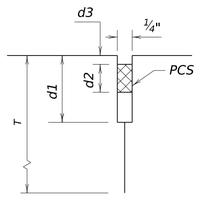
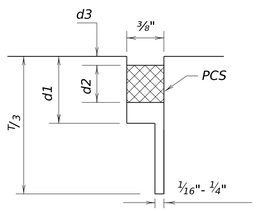


LONGITUDINAL OR TRANSVERSE CONSTRUCTION JOINT



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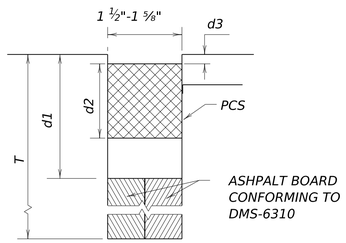

TRANSVERSE FORMED EXPANSION JOINT

GENERAL NOTES

1. UNLESS OTHERWISE SHOWN IN THE PLANS, EITHER METHOD "A" OR METHOD "B" MAY BE USED.
2. THE LOCATION OF JOINTS SHALL BE AS SHOWN ELSEWHERE IN THE PLANS.
3. THE JOINT RESERVOIR FOR SEALANT OR PCS SHALL BE SAWED UNLESS OTHERWISE SHOWN ON THE PLANS FOR THE LONGITUDINAL AND TRANSVERSE CONSTRUCTION JOINTS AND THE SAWED JOINTS.
4. DIMENSIONS d1, d2, AND d3 SHOWN IN METHOD A SHALL BE IN ACCORDANCE WITH THE PREFORMED COMPRESSION SEAL MANUFACTURER'S RECOMMENDATION.
5. REFER TO DMS-6310 "JOINT SEALANTS AND FILLERS" FOR SEALANT CLASSIFICATIONS.
6. FOR ALL METHOD "B" JOINTS, USE JOINT SEALANT CLASS 5 OR 8 UNLESS OTHERWISE SHOWN ON THE PLAN OR APPROVED AT NEW JOINTS.
7. USE JOINT SEALANT CLASS 5 OR 8 AT NEW JOINTS. USE JOINT SEALANT CLASS 4,5,7,OR 8 FOR MAINTANING EXISTING JOINTS.
8. THE JOINTS SHALL BE CLEANED IN ACCORDANCE WITH THE ITEM 438 "CLEANING AND SEALING JOINTS" OR ITEM 713 "CLEANING AND SEALING JOINTS AND CRACKS (CONCRETE PAVEMENT)".

Texas Department of Transportation | Design Division Standard

CONCRETE PAVING DETAILS

JOINT SEALS

JS-25

FILE: js25.dgn	DN: TxDOT	DN: AN	DW: AN	CK:	
©TxDOT: OCTOBER 2025	CONT	SECT	JOB	HIGHWAY	
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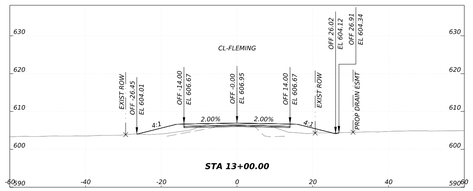

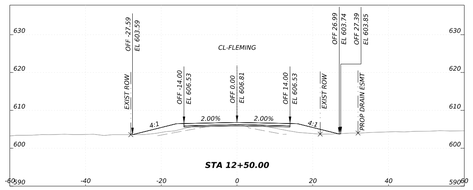

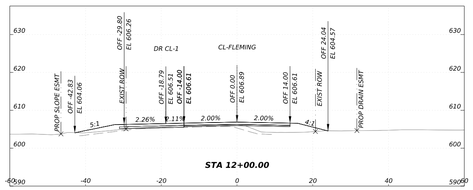

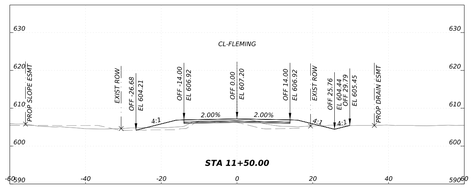

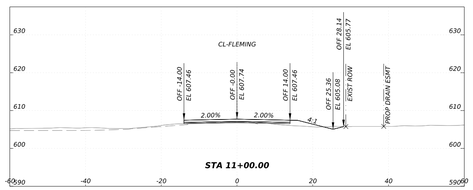

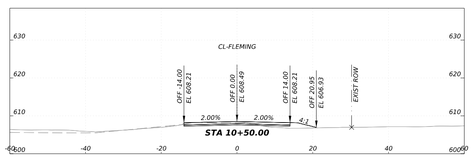

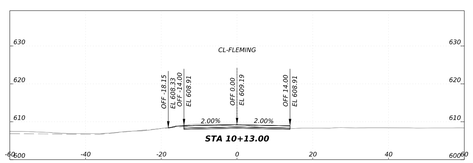

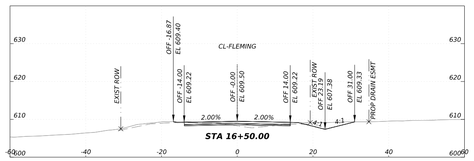

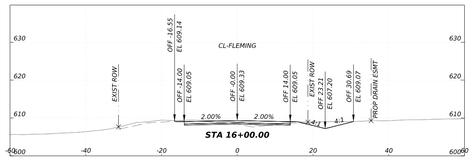

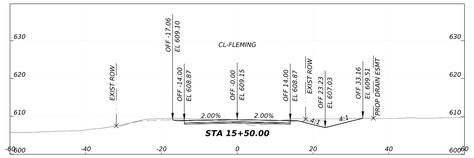

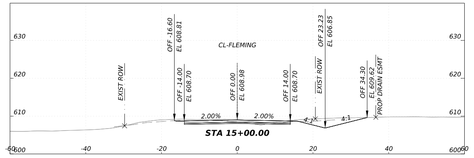

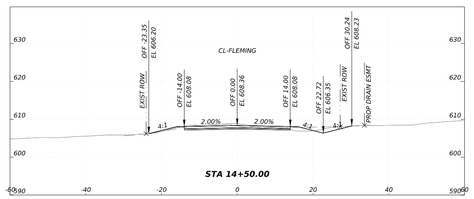

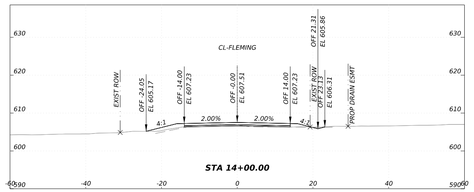

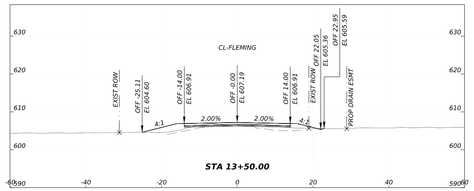

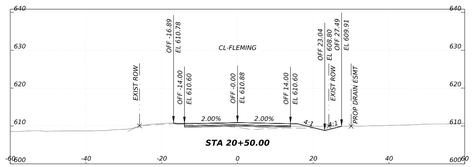

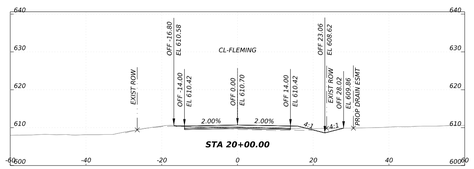

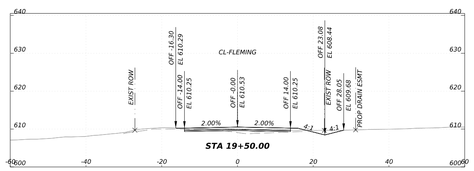

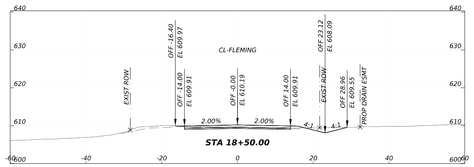

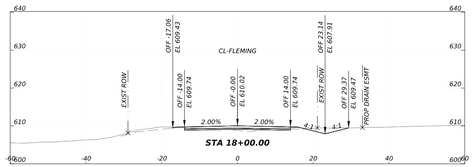

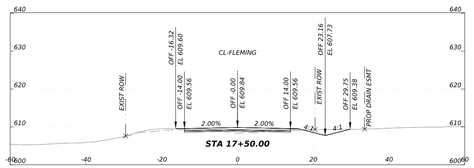

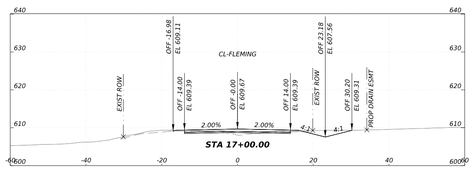

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HORIZONTAL SCALE IN FEET

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VERTICAL SCALE IN FEET

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AUSTIN, TX 78730
512-872-7130
Burns & McDonnell Engineering Co., Inc.
Firm Reg. No. F-845

date	detailed
4/3/2026	J. GARCIA
designed	checked
D. WILLIAMS	K. KOOIMAN

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY

FLEMING PASS
CROSS SECTIONS
BEGIN TO STA 20+50

project	contract
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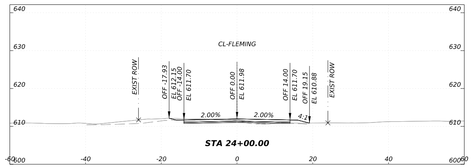

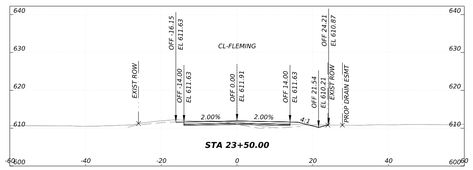

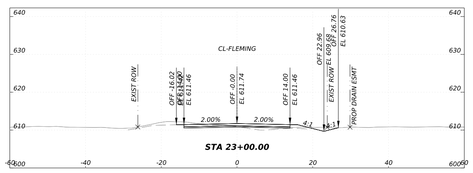

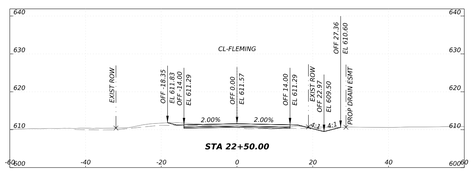

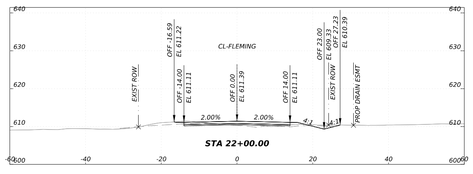

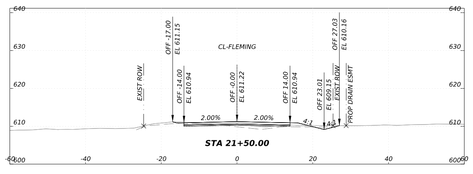

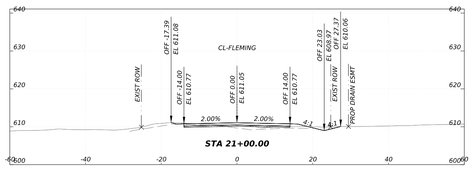

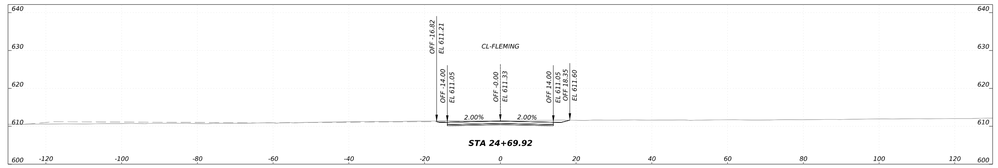

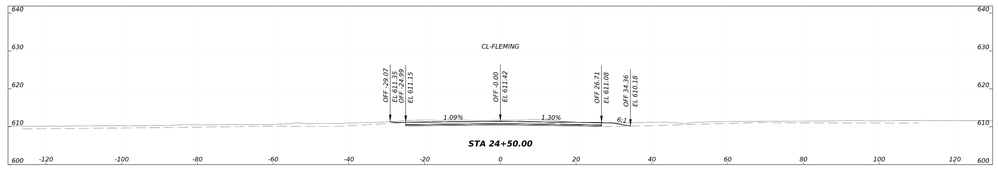

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Firm Reg. No. F-845

date	detailed
4/3/2026	J. GARCIA
designed	checked
D. WILLIAMS	K. KOOIMAN

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY
FLEMING PASS
CROSS SECTIONS
STA 21+00 TO END

project	contract
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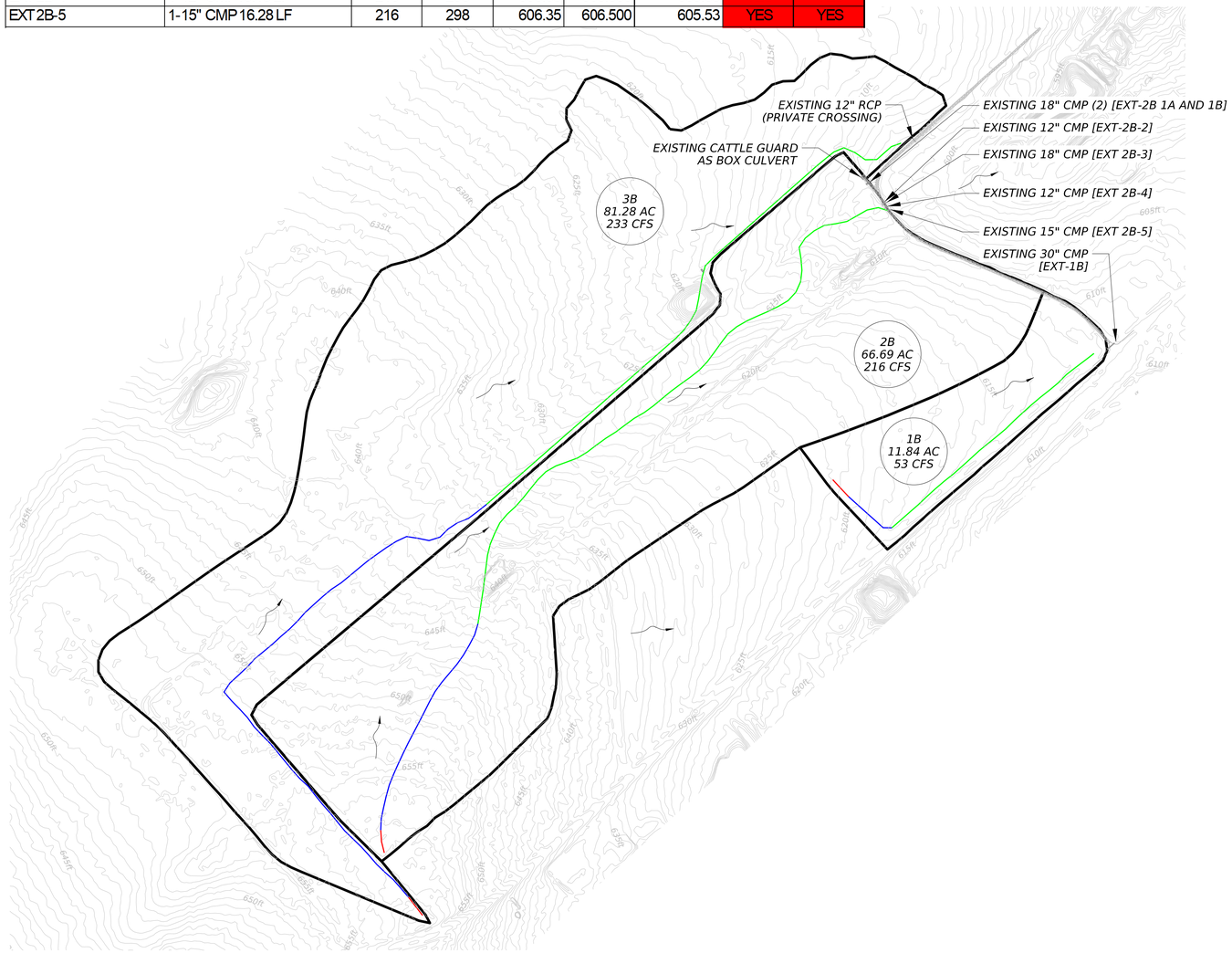
Hydraulic Analysis

Existing Condition

Crossing Name	Existing Structure	Peak Flow for [CFS] Storm Events		Upstream HW [FT]		Top of Roadway (min) [FT]	Does it overtop (Y/N)	
		25-Yr	100-Yr	25-Yr	100-Yr		25-Yr	100-Yr
EXT-1B	1-18" CMP 30 LF	53	72	612.05	612.090	610.73	YES	YES
Cattle Guard	1-6'x2' Box	216	298	606.35	606.500	605.53	YES	YES
EXT 2B-1A/1B	2-18" CMP 20 LF	216	298	606.35	606.500	605.53	YES	YES
EXT 2B-2	1-12" RCP 17.2 LF	216	298	606.35	606.500	605.53	YES	YES
EXT 2B-3	1-18" CMP 24.3 LF	216	298	606.35	606.500	605.53	YES	YES
EXT 2B-4	1-12" CMP 19.18 LF	216	298	606.35	606.500	605.53	YES	YES
EXT 2B-5	1-15" CMP 16.28 LF	216	298	606.35	606.500	605.53	YES	YES



LEGEND

- MAJOR CONTOUR
- MINOR CONTOUR
- DRAINAGE AREA BOUNDARY
- SHEET FLOW
- SHALLOW CONCENTRATION FLOW
- OPEN CHANNEL FLOW
- DRAINAGE FLOW DIRECTION
- DA / ACRES / CFS — DRAINAGE AREA NAME, DRAINAGE AREA (ACRES), 25 YEAR FLOW (CFS)

NOTES

1. DRAINAGE ANALYSIS IS PERFORMED IN ACCORDANCE WITH CITY OF SAN MARCOS STORM WATER TECHNICAL MANUAL (2020).

2. DESIGN STORM IS ASSUMED TO BE 25YR AND CHECK FLOW IS ASSUMED TO BE 100 YR.

3. FLOW IS ASSUMED TO BE SAME IN ULTIMATE DEVELOPMENT CONDITIONS AS IT IS IN EXISTING CONDITIONS. IT IS ASSUMED THAT THAT DEVELOPER WILL MANAGE THE FLOW ON-SITE FOR ANY FUTURE DEVELOPMENT.

4. HYDRAULIC ANALYSIS WAS COMPLETED USING HY-8 (V8) USING THE PEAK FLOW HYDROLOGICAL ANALYSIS AND SURVEY DATA PROVIDED BY SURVEYOR FOR ALL EXISTING DRAINAGE STRUCTURES AND RESULTS ARE SHOWN IN TABLE. EXISTING CATTLE GUARD IS ASSUMED TO BOX CULVERT AND FLOWING FROM WEST TO EAST AS PER THE SURVEY.

5. FLOW FROM DA 3B ASSUMED TO FOLLOW THE FLOW PATH AS SHOWN AS PER THE CITY'S CONTOUR DATA 2024 AND SURVEY DATA PROVIDED BY THE SURVEYOR.

6. REFER TO SEPERATE DRAINAGE MEMO FOR THE DETAILED ASSUMPTIONS OF HYDROLOGICAL AND HYDRAULIC ANALYSIS.

no.	date	by	ckd	description
0	04/03/26	GK	RWC	GMP 1/2: ISSUED FOR BID

NORTH

0 300' 600'
HORIZONTAL SCALE IN FEET

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AUSTIN, TX 78730
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Burns & McDonnell Engineering Co., Inc.
Firm Reg. No. F-845

date	detailed
4/3/2026	J. GARCIA
designed	checked
G. KARKI	R. CASTOR

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY

EXISTING OVERALL DRAINAGE AREA MAP

project	contract
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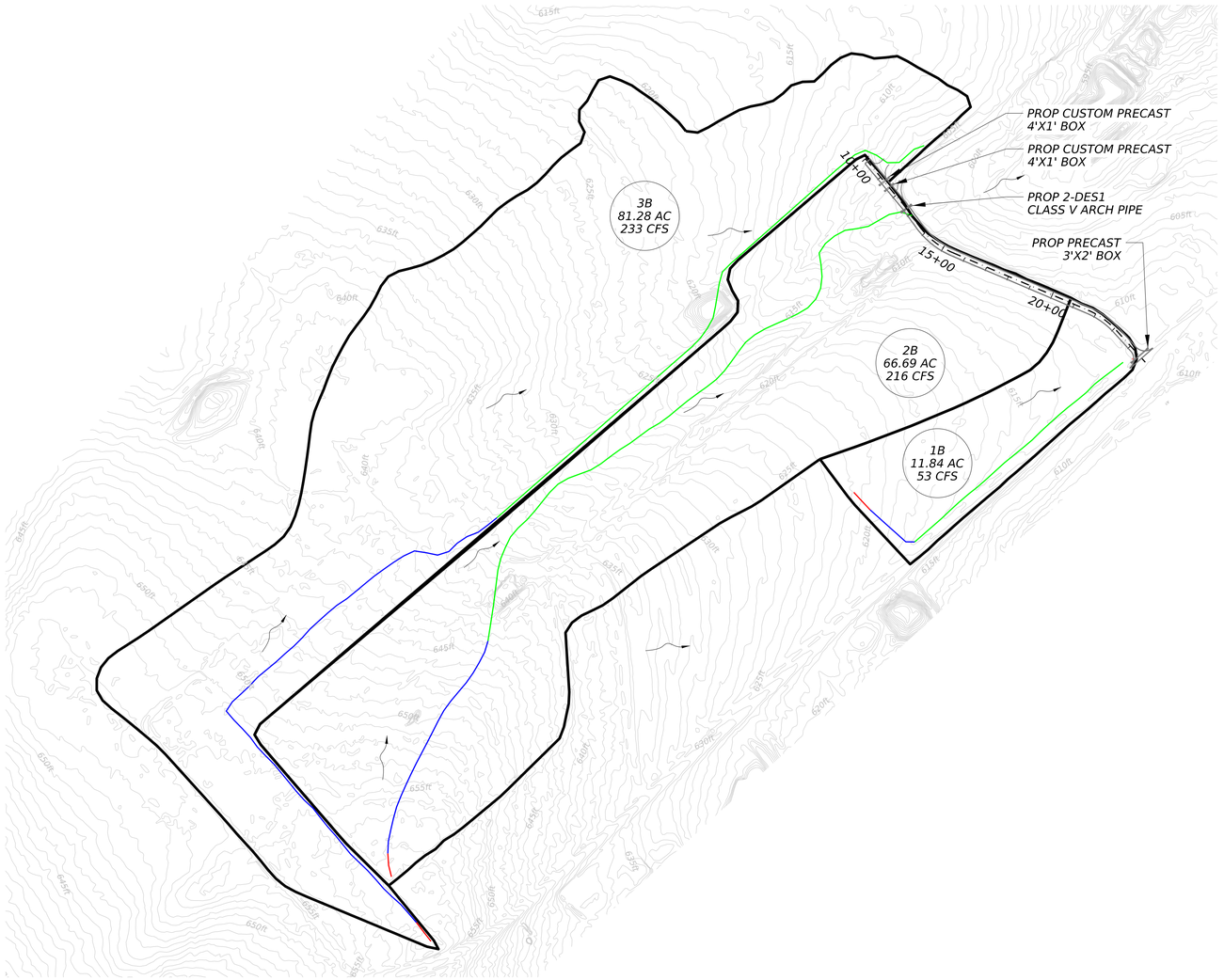
Hydraulic Analysis

Proposed Condition

Crossing Name	Proposed Structure	Peak Flow for [CFS] Storm Events		Upstream HW [FT]		Top of Roadway (min) [FT]	Does it overtop (Y/N)	
		25-Yr	100-Yr	25-Yr	100-Yr		25-Yr	100-Yr
PROP-1B	1-3'x2' RCP 78 LF	53	72	611.43	611.47	611.50	NO	NO
PROP 2B-1	1-4'x1' RCB 45 LF	216	298	606.78	606.92	606.81	NO	YES
PROP 2B-2	1-4'x1' RCB 41 LF	216	298	606.78	606.92	606.81	NO	YES
PROP 2B-3	2-13.5"x22" Arch Pipe 57LF	216	298	606.78	606.92	606.81	NO	YES



LEGEND

- MAJOR CONTOUR
- MINOR CONTOUR
- DRAINAGE AREA BOUNDARY
- SHEET FLOW
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- DA / ACRES / CFS — DRAINAGE AREA NAME, DRAINAGE AREA (ACRES), 25 YEAR FLOW (CFS)

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4/3/2026	J. GARCIA
designed	checked
G. KARKI	R. CASTOR

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY

PROPOSED OVERALL DRAINAGE AREA MAP

project	contract
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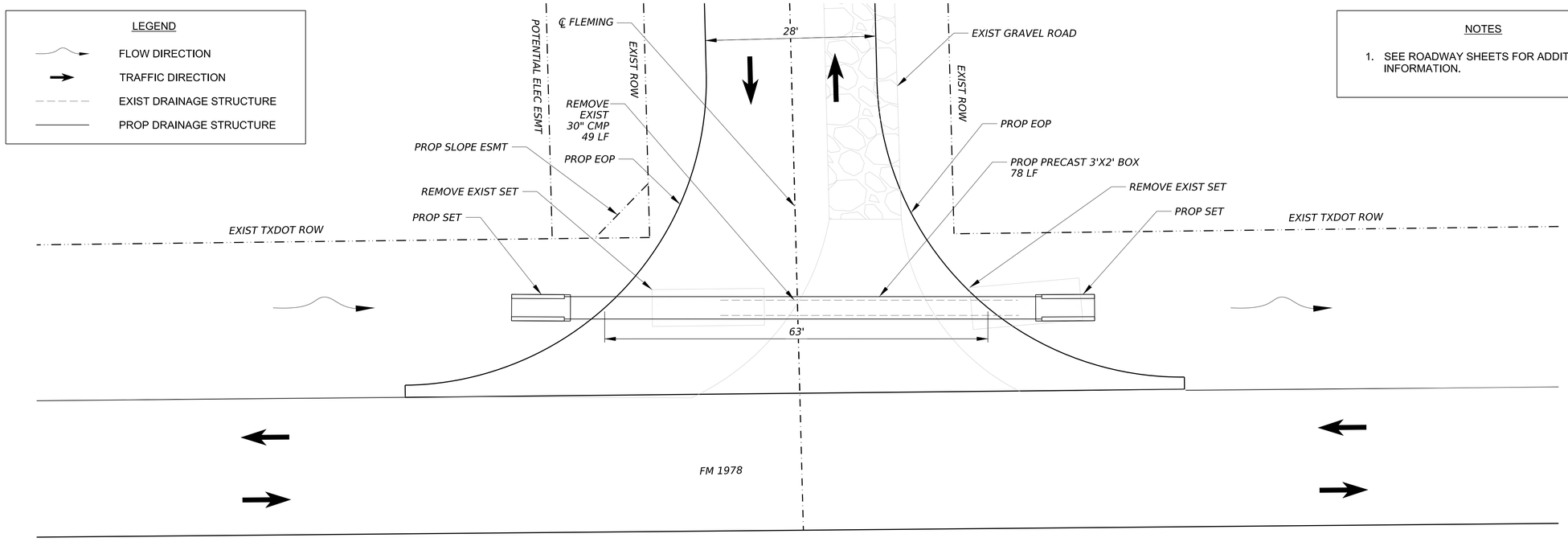

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1. SEE ROADWAY SHEETS FOR ADDITIONAL INFORMATION.

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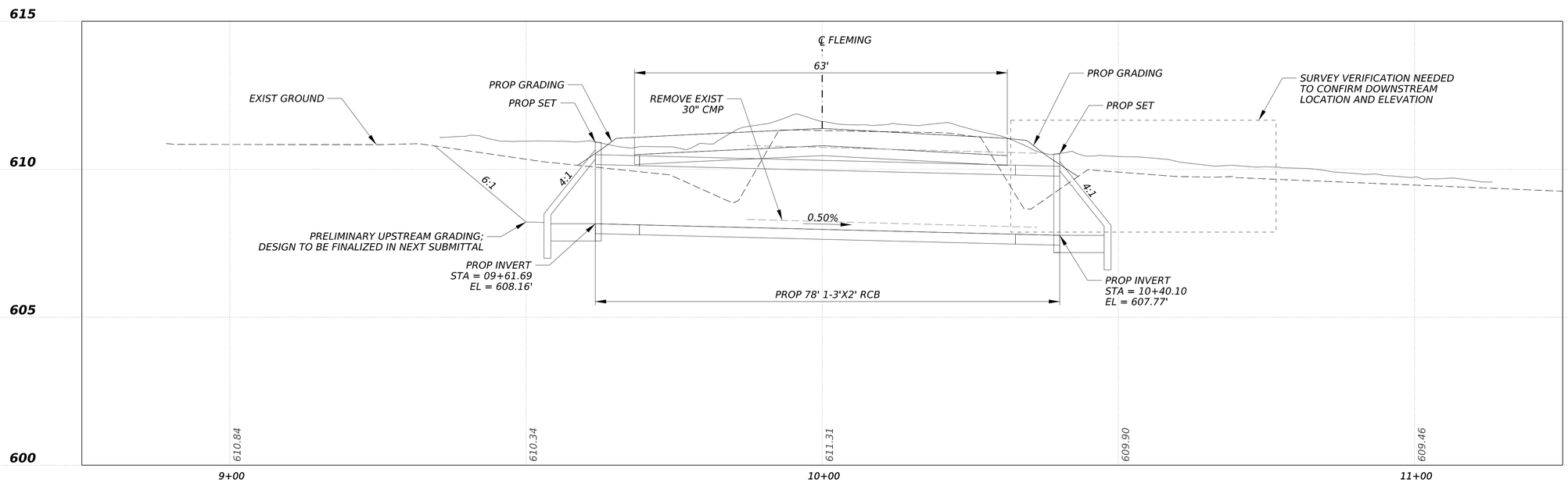

NORTH

0 10' 20'
HORIZONTAL SCALE IN FEET

0 2' 4'
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THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY
CULVERT 1B
PLAN AND PROFILE

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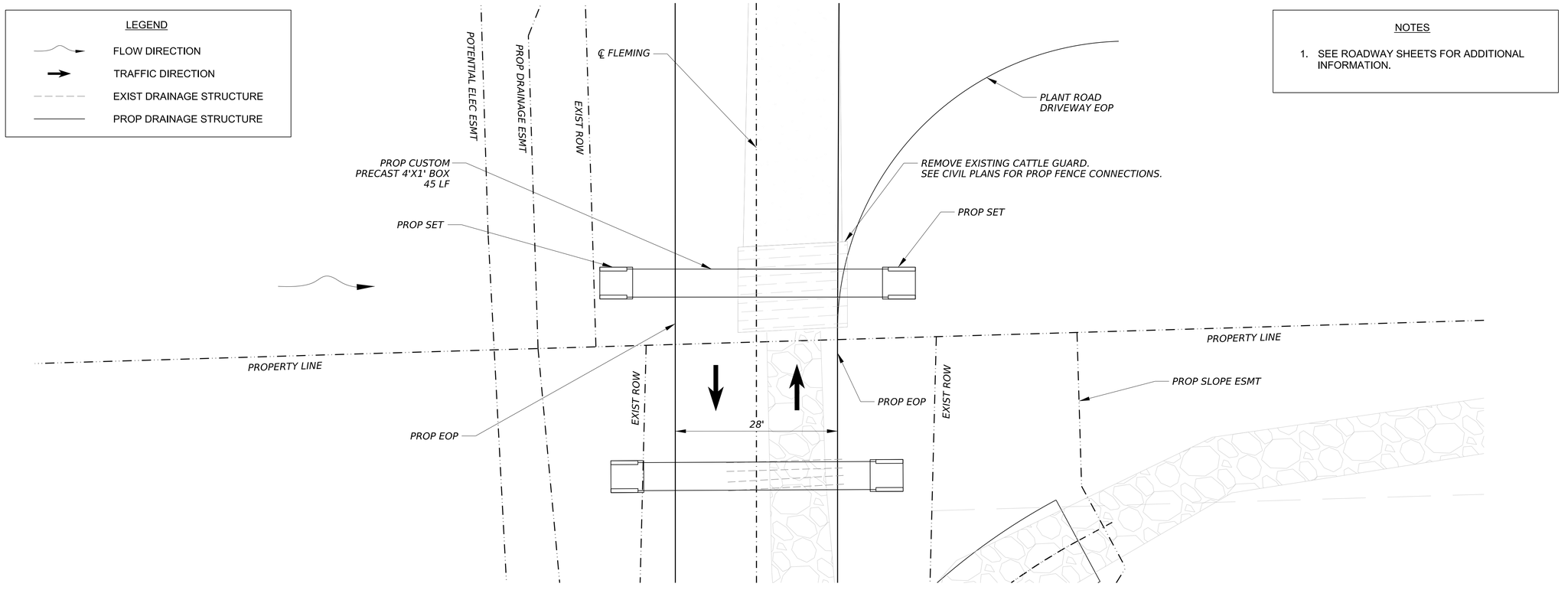

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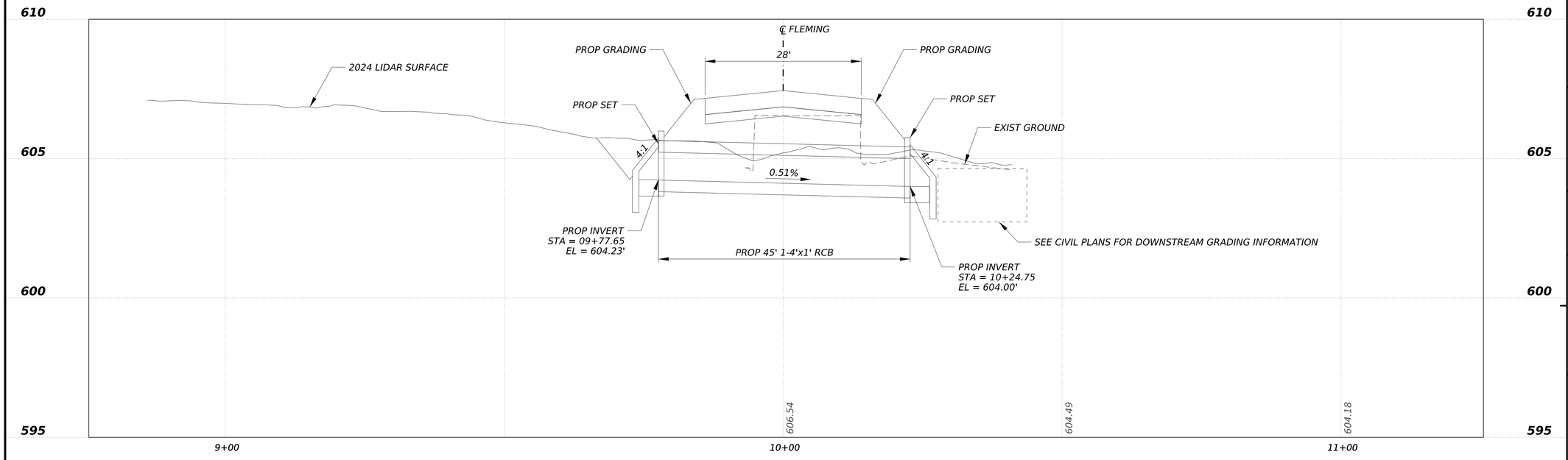

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FM 1978 WATER RECLAMATION FACILITY

CULVERT 2B-1
PLAN AND PROFILE

project	contract
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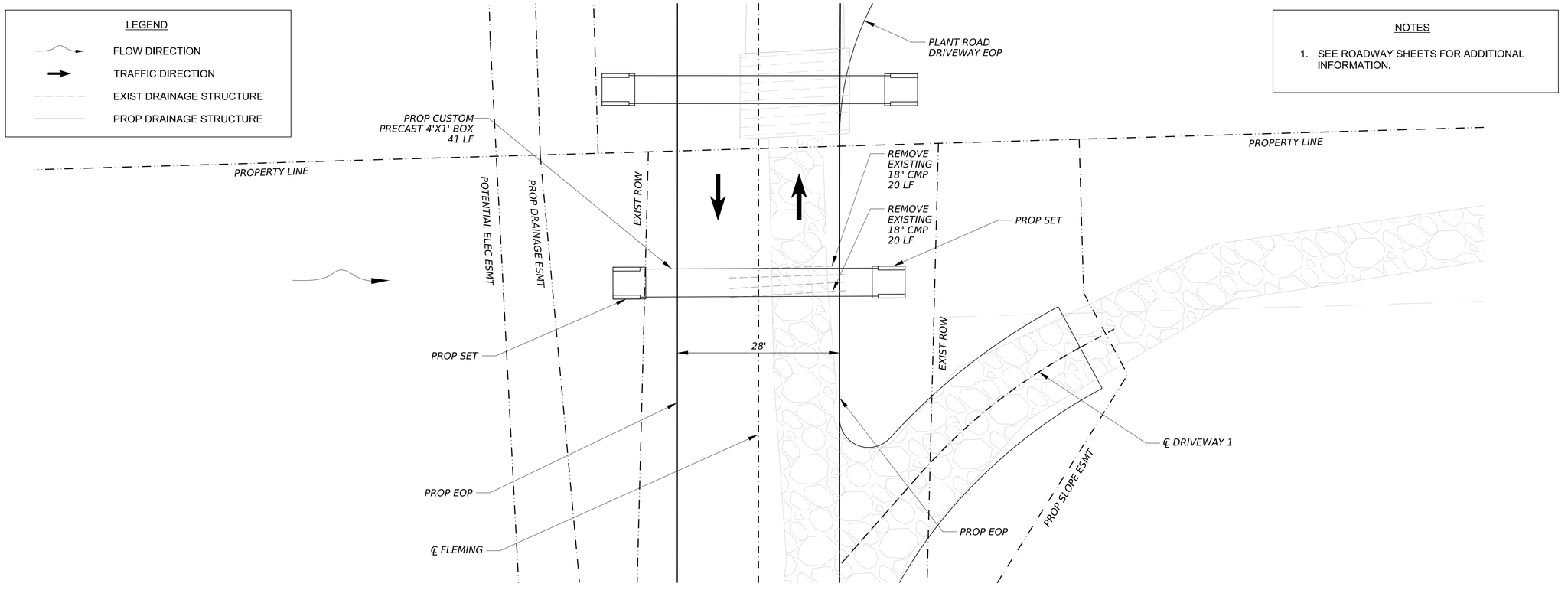

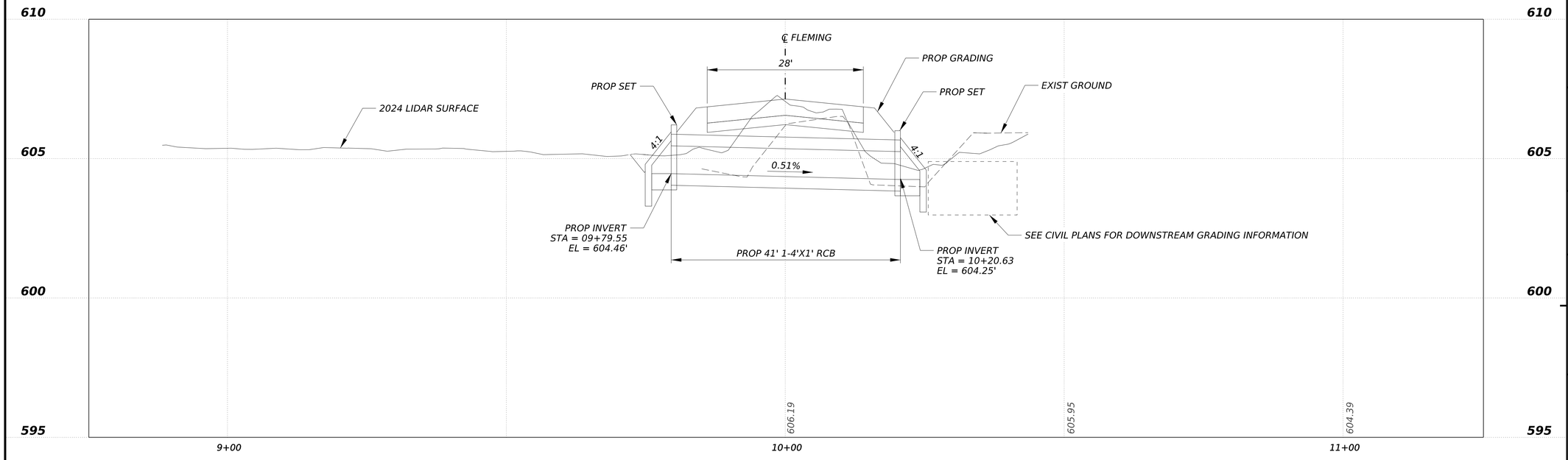

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512-872-7130
Burns & McDonnell Engineering Co., Inc.
Firm Reg. No. F-845

date	detailed
4/3/2026	J. GARCIA
designed	checked
G. KARKI	R. CASTOR

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY
CULVERT 2B-2
PLAN AND PROFILE

project	contract
187533	

drawing 001C001 — rev. 0

sheet X of X sheets

file 187533_XXXCXXX.DGN

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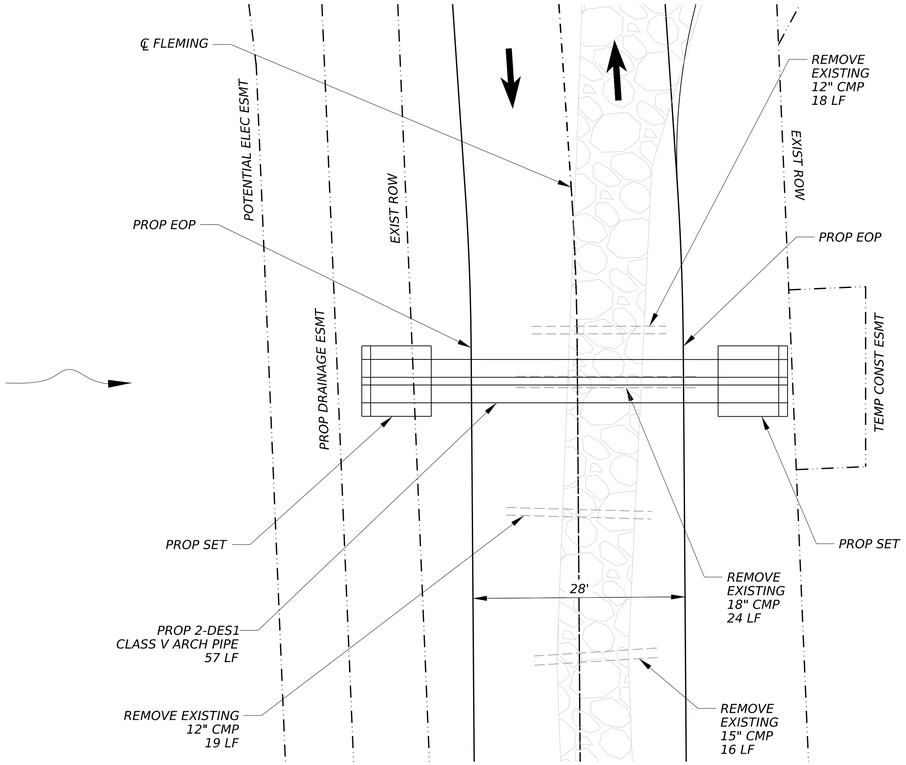
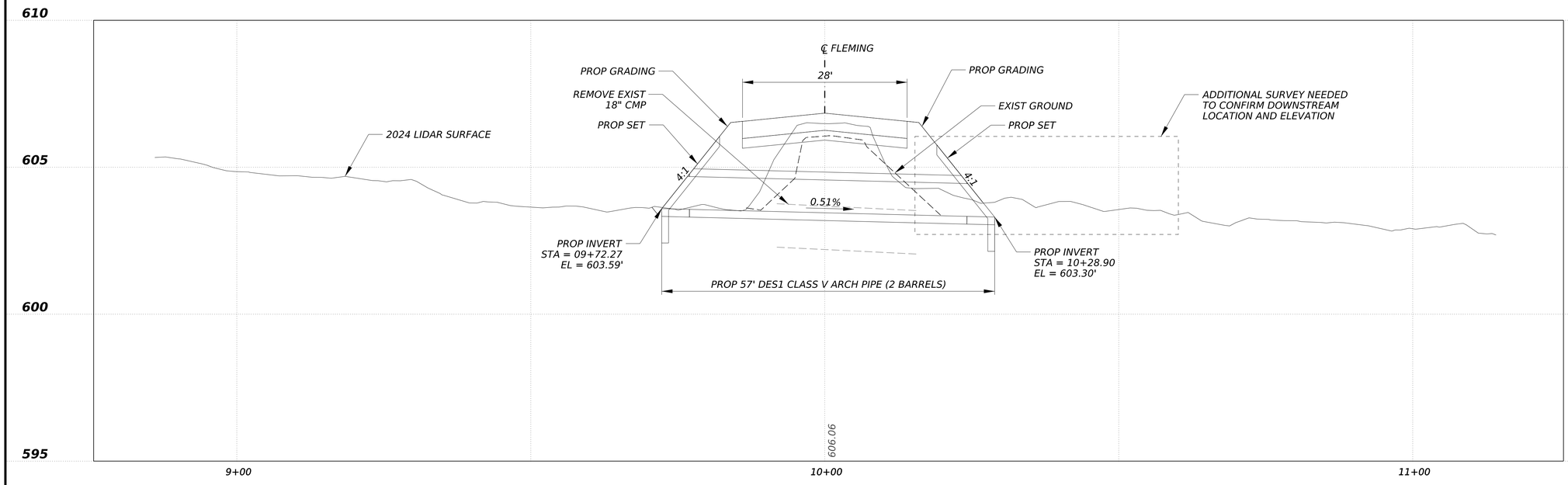
LEGEND

- FLOW DIRECTION
- TRAFFIC DIRECTION
- EXIST DRAINAGE STRUCTURE
- PROP DRAINAGE STRUCTURE



NOTES

1. SEE ROADWAY SHEETS FOR ADDITIONAL INFORMATION.



no.	date	by	ckd	description
0	04/03/26	GK	RWC	GMP 1/2: ISSUED FOR BID

NORTH

0 10' 20'
HORIZONTAL SCALE IN FEET

0 2' 4'
VERTICAL SCALE IN FEET

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G. KARKI	R. CASTOR

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY
CULVERT 2B-3
PLAN AND PROFILE

project	contract
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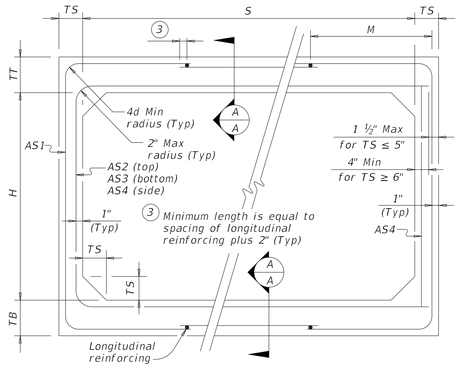
BOX DATA

SECTION DIMENSIONS					Fill Height	M (Min)	REINFORCING (sq. in. / ft.) (2)							(1) Lift Weight
S (ft.)	H (ft.)	TT (in.)	TB (in.)	TS (in.)	(ft.)	(in.)	AS1	AS2	AS3	AS4	AS5	AS7	AS8	(tons)
3	2	7	6	4	< 2	-	0.17	0.25	0.16	0.10	0.17	0.17	0.14	3.3
3	2	4	4	4	2 < 3	31	0.13	0.19	0.18	0.10	-	-	-	2.4
3	2	4	4	4	3 - 5	31	0.10	0.11	0.12	0.10	-	-	-	2.4
3	2	4	4	4	10	31	0.10	0.10	0.10	0.10	-	-	-	2.4
3	2	4	4	4	15	31	0.10	0.13	0.13	0.10	-	-	-	2.4
3	2	4	4	4	20	31	0.11	0.17	0.17	0.10	-	-	-	2.4
3	2	4	4	4	25	31	0.14	0.21	0.21	0.10	-	-	-	2.4
3	2	4	4	4	30	31	0.17	0.25	0.25	0.10	-	-	-	2.4
3	2	4	4	4	35	31	0.20	0.29	0.30	0.10	-	-	-	2.4
3	3	7	6	4	< 2	-	0.17	0.27	0.17	0.10	0.17	0.17	0.14	3.7
3	3	4	4	4	2 < 3	31	0.10	0.22	0.21	0.10	-	-	-	2.8
3	3	4	4	4	3 - 5	31	0.10	0.14	0.14	0.10	-	-	-	2.8
3	3	4	4	4	10	31	0.10	0.11	0.11	0.10	-	-	-	2.8
3	3	4	4	4	15	31	0.10	0.14	0.15	0.10	-	-	-	2.8
3	3	4	4	4	20	31	0.10	0.18	0.19	0.10	-	-	-	2.8
3	3	4	4	4	25	31	0.10	0.23	0.23	0.10	-	-	-	2.8
3	3	4	4	4	30	31	0.12	0.27	0.28	0.10	-	-	-	2.8
3	3	4	4	4	35	31	0.14	0.32	0.32	0.10	-	-	-	2.8

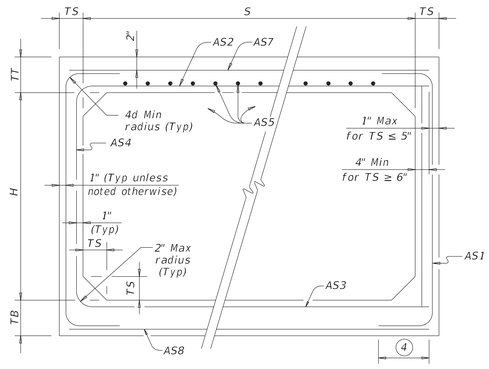
(1) For box length = 8'-0"

(2) AS1 thru AS4, AS7 and AS8 are minimum required areas of reinforcement per linear foot of box length. AS5 is minimum required area of reinforcement per linear foot of box width.



CORNER OPTION "A" CORNER OPTION "B"

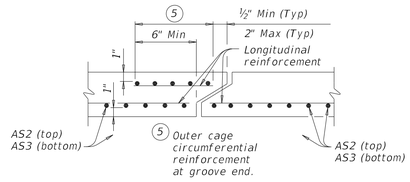
FILL HEIGHT 2 FT AND GREATER



CORNER OPTION "A" CORNER OPTION "B"

FILL HEIGHT LESS THAN 2 FT

(4) Length is equal to spacing of longitudinal reinforcing plus 2". (10" Min) (Typ)



SECTION A-A

(Showing top and bottom slab joint reinforcement.)

MATERIAL NOTES:

Provide 0.03 sq. in./ft. minimum longitudinal reinforcement at each face in slabs and walls. This minimum requirement may be met by the transverse wires when wire mesh reinforcement is used.

Provide Class H concrete (f'c = 5,000 psi).

GENERAL NOTES:

Designs shown conform to ASTM C1577. Refer to ASTM C1577 for information or details not shown.

See Box Culverts Precast Miscellaneous Details (SCP-MD) standard sheet for details and notes not shown.

In lieu of furnishing the designs shown on this sheet, the contractor may furnish an alternate design that is equal to or exceeds the box design for the design fill height in the table. Submit shop plans for alternate designs in accordance with Item "Precast Concrete Structural Members (Fabrication)."

HL93 LOADING

Texas Department of Transportation | Bridge Division Standard

SINGLE BOX CULVERTS PRECAST 3'-0" SPAN

SCP-3

FILE:	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT February 2020	CONT	SECT	JOB	HIGHWAY
REVISIONS				
	DIST	COUNTY		SHEET NO.

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512-872-7130
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date	detailed
4/3/2026	J. GARCIA
designed	checked
G. KARKI	R. CASTOR

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY

CIVIL
TxDOT REF STANDARD DETAIL SHEET X

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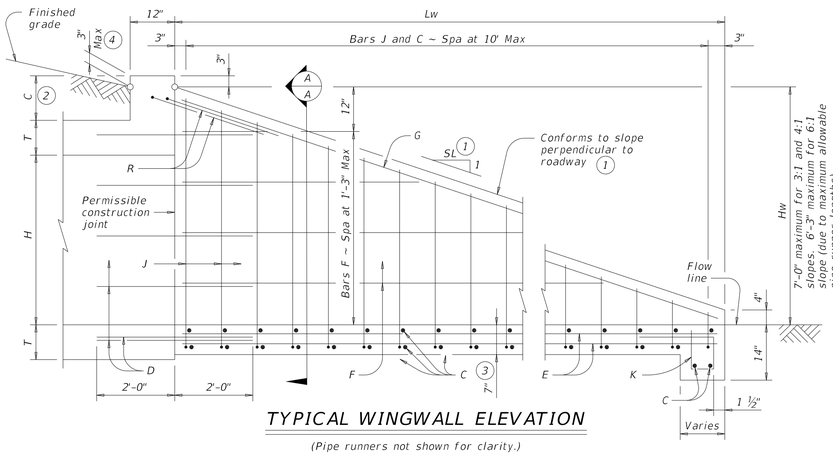
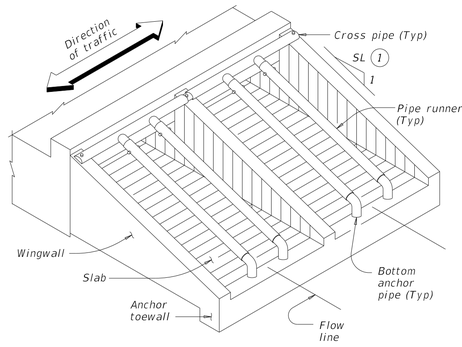


TYPICAL WINGWALL ELEVATION

(Pipe runners not shown for clarity.)



ISOMETRIC VIEW OF TYPICAL INSTALLATION

WING DIMENSION CALCULATIONS:

$Hw = H + T + C - 0.250'$

$Lw = (Hw - 0.333') (SL)$

For cast-in-place culverts:

$Atw = (N) (S) + (N + 1) (U)$

For precast culverts:

$Atw = (N) (2U + S) + (N - 1) (0.500')$

Total Wingwall Area (SF)
$= (0.5) (Hw + 0.333') (Lw) (N + 1)$

Total Concrete Volume (CY)
$= [(\text{Wingwall Area}) (0.583') +$
$(Lw) (Atw) (0.583') +$
$(Atw) (1.167') (1.167' - 0.583')] \div (27)$

PIPE RUNNER DIMENSION CALCULATIONS:

Pipe Runner Length
$= (Lw) (K1) - (1.917')$

Total Reinforcing (Lb)
$= (1.55) (Lw) (Atw) +$
$(4.43) (Atw) +$
$(K2) (Hw) (N + 1) (\sqrt{Lw})$

C = Height of curb above top of top slab (feet)
Hw = Height of wingwall (feet)
K = Constant value for use in formulas

Slope SL:1	K1	K2
3:1	~ 1.054 ~	7.45
4:1	~ 1.031 ~	8.49
6:1	~ 1.014 ~	10.30

Atw = Anchor toewall length (feet)
Lw = Length of wingwall (feet)
N = Number of culvert barrels
SL:1 = Side slope ratio (horizontal : 1 vertical)

See applicable box culvert standard for H, S, T, and U values.

MATERIAL NOTES:

Provide Grade 60 reinforcing steel.

Provide galvanized reinforcing steel if required elsewhere in the plans.

Adjust reinforcing as necessary to provide a minimum clear cover of 1 ½".

Provide Class "C" concrete (f'c = 3,600 psi).

Provide pipe runners, cross pipes, and anchor pipes meeting the requirements of ASTM A53 (Type E or S, Gr B), ASTM A500 Gr B, or API 5LX52.

Provide ASTM A307 bolts.

Galvanize all steel components, except the concrete reinforcing, unless required elsewhere in the plans, after fabrication.

Repair galvanizing damaged during transport or construction in accordance with the Item 445, "Galvanizing."

GENERAL NOTES:

Designed according to AASHTO LRFD Bridge Design Specifications.

The safety end treatments shown herein are intended for use in those installations where out of control vehicles are likely to traverse the openings approximately perpendicular to the pipe runners.

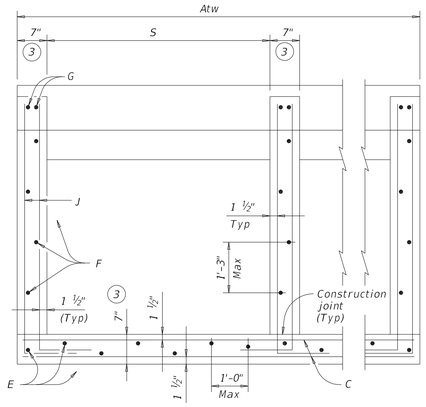
Pipe runners are designed for a traversing load of 1,800 pounds at yield as recommended by Research Report 280-1, "Safety Treatment of Roadside Cross-Drainage Structures", Texas Transportation Institute, March 1981.

The quantities for pipe runners, reinforcing steel, and concrete resulting from the formulas given herein are for Contractor's information only.

See the Box Culvert Supplement (BCS) standard sheet for additional dimensions and information.

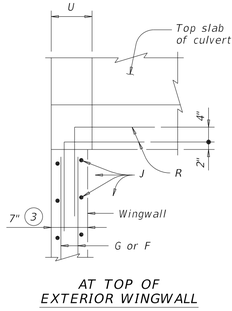
Alternate design drawings bearing the seal of a professional engineer will be acceptable for precast construction of the safety end treatments.

Cover dimensions are clear dimensions, unless noted otherwise. Reinforcing dimensions are out-to-out of bars.



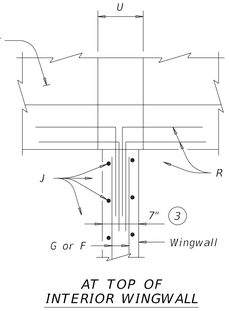
SECTION A-A

(Showing typical wingwall and wing slab reinforcing. Pipe runners not shown for clarity.)



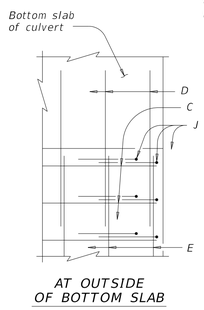
AT TOP OF EXTERIOR WINGWALL

(Cast-in-place culvert)



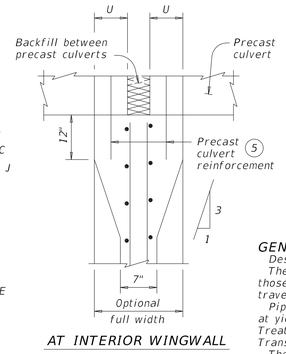
AT TOP OF INTERIOR WINGWALL

(Cast-in-place culvert)



AT OUTSIDE OF BOTTOM SLAB

(Cast-in-place culvert)



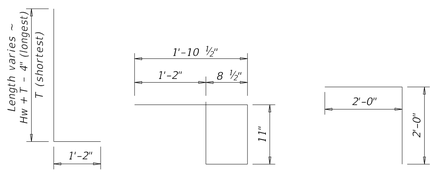
AT INTERIOR WINGWALL

(Precast culvert)

TABLE OF REINFORCING BAR SIZES AND SPACING		
Bar	Size	Spacing
C	#4	10" Max
D	#4	Match F and E
E	#4	1'-0" Max
F	#4	1'-3" Max
G	#6	As shown
J	#4	10" Max
K	#4	1'-0" Max
R	#4	As shown

PLAN VIEWS OF CORNER DETAILS

1. Recommended values of slope are: 3:1, 4:1, and 6:1. Provide 3:1 or flatter slope.
2. 0" Min to 5'-0" Max. Estimated curb heights are shown elsewhere in the plans. For structures without railing and curbs taller than 1'-0", refer to the Extended Curb Details (ECD) standard sheet.
3. Wingwall and slab thicknesses may be the same as the adjacent culvert wall and slab thicknesses (7" minimum). If thicknesses greater than the minimum (7") are used, no changes will be made in quantities and no additional compensation will be allowed.
4. For vehicle safety, reduce curb height, if necessary, to provide a maximum 3" projection. No changes will be made in quantities and no additional compensation will be allowed for this work.
5. For culverts with C = 0", the precast culvert reinforcing may extend 1'-0" minimum into wingwall. Wingwall Bars D and R may be omitted. Otherwise, refer to the Wingwall Connection detail on the Box Culvert Precast Miscellaneous Details (SCP-MD) standard sheet.



BARS J | BARS K (Length = 4'-3") | BARS R

SHEET 1 OF 2

Texas Department of Transportation — Bridge Division Standard

SAFETY END TREATMENT
FOR 0° SKEW BOX CULVERTS (MAXIMUM Hw = 7'-0") TYPE I ~ CROSS DRAINAGE
SETB-CD

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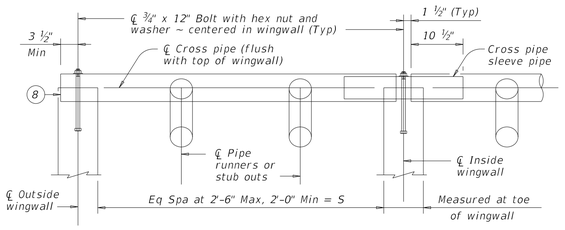
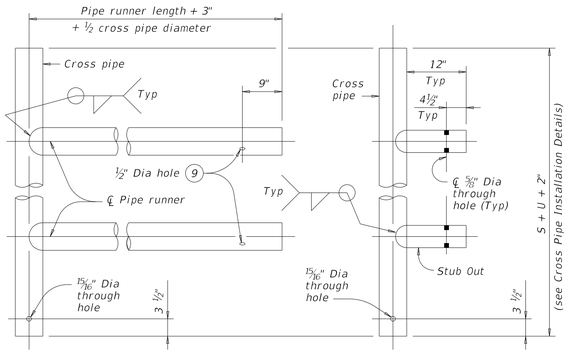


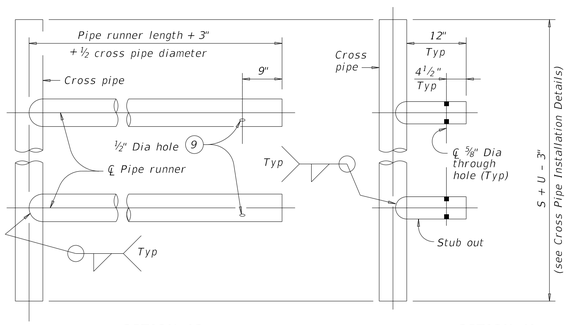
NOTE: At Contractor's option, make the cross pipe continuous across the inside wingwalls. If option is selected, omit the sleeve pipe and make a $^{15}/_{16}$" diameter through hole in the cross pipe to accept the anchor bolt at the centerline of each inside wingwall.

CROSS PIPE INSTALLATION DETAILS



OPTION A2 OPTION A1

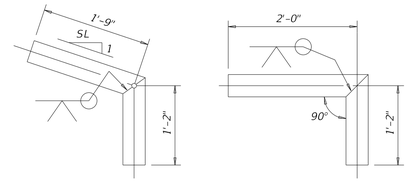
FOR USE IN OUTSIDE CULVERT BAY



OPTION A2 OPTION A1

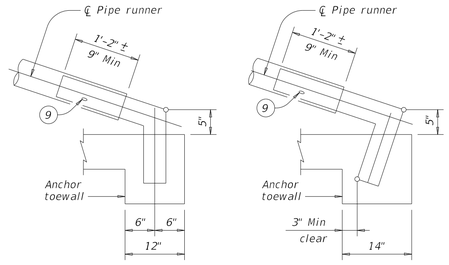
FOR USE IN INSIDE CULVERT BAY

CROSS PIPE AND CONNECTIONS DETAILS



OPTION A OPTION B (10)

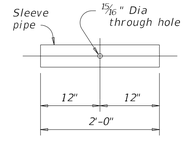
BOTTOM ANCHOR PIPE DETAILS



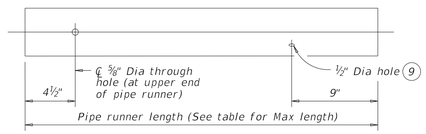
OPTION B1 OPTION B2

BOTTOM ANCHOR TOEWALL DETAILS

(Wingwall not shown for clarity.)



CROSS PIPE SLEEVE PIPE DETAILS



NOTE: The separate pipe runner shown is required when Cross Pipe Connection Option A1 is used.

PIPE RUNNER DETAILS

(6) Cross pipe is the same size as the pipe runner. Cross pipe stub out is the same size as the anchor pipe.

(7) Note that actual slope of safety pipe runner may vary slightly from side slope.

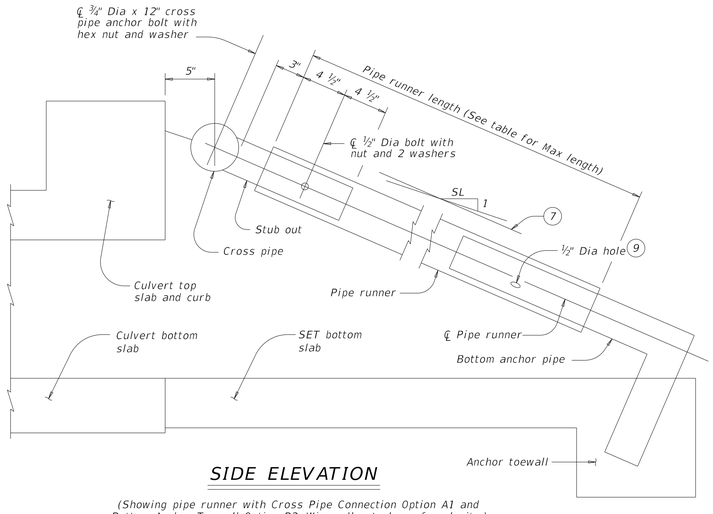
(8) Take care to ensure that riprap concrete does not flow into the cross pipe so as to permit disassembly of the bolted connection to allow cleanout access.

(9) After installation, inspect the 1#2" hole to ensure that the lap of the safety pipe runner with the bottom anchor pipe is adequate.

(10) At fabricator's option, a heat bend to a smooth 5" radius or a manufactured elbow (of the same material as the runner) may be substituted for the mitered and welded joint in the bottom anchor pipe.

MAXIMUM PIPE RUNNER LENGTHS AND (6) REQUIRED PIPE RUNNER AND ANCHOR PIPE SIZES

Maximum Pipe Runner Length	Required Pipe Runner Size			Required Anchor Pipe Size		
	Pipe Size	Pipe O.D.	Pipe I.D.	Pipe Size	Pipe O.D.	Pipe I.D.
10'- 0"	3" STD	3.500"	3.068"	2" STD	2.375"	2.067"
19'- 8"	4" STD	4.500"	4.026"	3" STD	3.500"	3.068"
34'- 2"	5" STD	5.563"	5.047"	4" STD	4.500"	4.026"



SIDE ELEVATION

(Showing pipe runner with Cross Pipe Connection Option A1 and Bottom Anchor Toewall Option B2. Wingwall not shown for clarity.)

SHEET 2 OF 2

Texas Department of Transportation | Bridge Division Standard

SAFETY END TREATMENT
FOR 0° SKEW BOX CULVERTS (MAXIMUM Hw = 7'-0") TYPE I ~ CROSS DRAINAGE
SETB-CD

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AUSTIN, TX 78730
512-872-7130
Burns & McDonnell Engineering Co., Inc.
Firm Reg. No. F-845

date	detailed
4/3/2026	J. GARCIA
designed	checked
G. KARKI	R. CASTOR

THE CITY OF SAN MARCOS

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TxDOT REF STANDARD DETAIL SHEET X

project	contract
187533	

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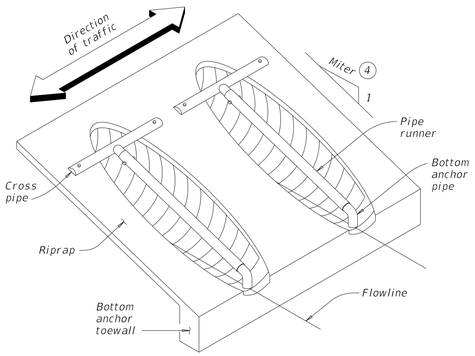
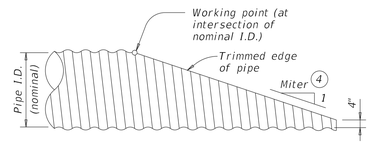


ISOMETRIC VIEW OF TYPICAL INSTALLATION

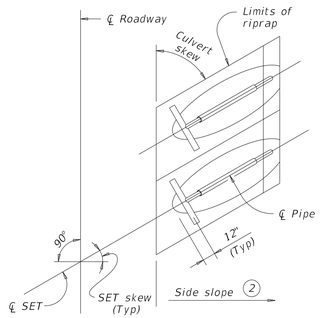
(Showing installation with no skew.)



NOTE: All pipe runners, calculations, and dimensions are based on the pipe culverts mitered as shown in this detail. Alternate styles of mitered ends will require that appropriate adjustments be made to the values presented on this standard.

SIDE ELEVATION OF TYPICAL PIPE CULVERT MITER

(Showing corrugated metal pipe (CMP) culvert. Details of reinforced concrete pipe (CMP) culvert are similar.)



PLAN OF SKEWED INSTALLATION

CROSS PIPE LENGTHS AND PIPE RUNNER LENGTHS (1) (3)

Corrugated Metal Pipe (CMP) Culverts

Design	Pipe Culvert Span	Pipe Culvert Rise	Pipe Culvert Spa ~ G	Cross Pipe Length	Pipe Runner Length											
					3:1 Side Slope				4:1 Side Slope				6:1 Side Slope			
					0° Skew	15° Skew	30° Skew	45° Skew	0° Skew	15° Skew	30° Skew	45° Skew	0° Skew	15° Skew	30° Skew	45° Skew
1	17"	13"	1' – 0"	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2	21"	15"	1' – 2"	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3	28"	20"	1' – 5"	3' – 9"	N/A	N/A	3' – 5"	4' – 7"	N/A	N/A	4' – 11"	6' – 5"	N/A	N/A	7' – 11"	10' – 2"
4	35"	24"	1' – 8"	4' – 4"	3' – 10"	4' – 0"	4' – 7"	6' – 0"	5' – 5"	5' – 8"	6' – 6"	8' – 4"	8' – 8"	9' – 1"	10' – 3"	12' – 11"
5	42"	29"	1' – 11"	4' – 11"	5' – 1"	5' – 4"	6' – 1"	7' – 10"	7' – 2"	7' – 5"	8' – 6"	10' – 9"	11' – 2"	11' – 8"	13' – 2"	16' – 6"
6	49"	33"	2' – 2"	5' – 6"	6' – 2"	6' – 5"	7' – 4"	N/A	8' – 6"	8' – 10"	10' – 0"	N/A	13' – 3"	13' – 9"	15' – 6"	N/A
7	57"	38"	2' – 5"	6' – 2"	7' – 6"	7' – 9"	N/A	N/A	10' – 2"	10' – 7"	N/A	N/A	15' – 9"	16' – 4"	N/A	N/A

Reinforced Concrete Pipe (RCP) Culverts

Design	Pipe Culvert Span	Pipe Culvert Rise	Pipe Culvert Spa ~ G	Cross Pipe Length	Pipe Runner Length											
					3:1 Side Slope				4:1 Side Slope				6:1 Side Slope			
					0° Skew	15° Skew	30° Skew	45° Skew	0° Skew	15° Skew	30° Skew	45° Skew	0° Skew	15° Skew	30° Skew	45° Skew
1	22"	13 1/2"	1' – 0"	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2	26"	15 1/2"	1' – 2"	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3	28 1/2"	18"	1' – 5"	3' – 9 1/2"	N/A	N/A	2' – 10"	3' – 10"	N/A	N/A	4' – 2"	5' – 5"	N/A	N/A	6' – 9"	8' – 9"
4	36 1/4"	22 1/2"	1' – 8"	4' – 5 1/4"	3' – 5"	3' – 7"	4' – 2"	5' – 6"	4' – 11"	5' – 1"	5' – 11"	7' – 7"	7' – 11"	8' – 3"	9' – 5"	11' – 11"
5	43 3/4"	26 5/8"	1' – 11"	4' – 0 3/4"	4' – 6"	4' – 8"	5' – 5"	6' – 11"	6' – 4"	6' – 7"	7' – 6"	9' – 7"	10' – 0"	10' – 5"	11' – 9"	14' – 10"
6	51 1/16"	31 5/16"	2' – 2"	5' – 8"	5' – 9"	6' – 0"	6' – 10"	N/A	7' – 11"	8' – 3"	9' – 4"	N/A	12' – 4"	12' – 10"	14' – 6"	N/A
7	58 1/2"	36"	2' – 5"	6' – 3 1/2"	6' – 11"	7' – 3"	N/A	N/A	9' – 6"	9' – 11"	N/A	N/A	14' – 9"	15' – 4"	N/A	N/A

TYPICAL PIPE CULVERT MITERS (4)

Side Slope	0° Skew	15° Skew	30° Skew	45° Skew
3:1	3:1	3.106:1	3.464:1	4.243:1
4:1	4:1	4.141:1	4.619:1	5.657:1
6:1	6:1	6.212:1	6.928:1	8.485:1

STANDARD PIPE SIZES AND MAX PIPE RUNNER LENGTHS (1)

Pipe Size	Pipe O.D.	Pipe I.D.	Max Pipe Runner Length
2" STD	2.375"	2.067"	N/A
3" STD	3.500"	3.068"	10' – 0"
4" STD	4.500"	4.026"	19' – 8"
5" STD	5.563"	5.047"	34' – 2"

CONDITIONS WHERE PIPE RUNNERS ARE NOT REQUIRED (3)

Design	Single Pipe Culvert	Multiple Pipe Culverts
1 and 2	Skews thru 45°	Skews thru 45°
3	Skews thru 35°	Skews thru 10°
4	Normal (no skew)	Always required
5 thru 7	Always required	Always required

(1) Provide pipe runner of the size shown in the tables. Provide cross pipe of the same size as the pipe runner. Provide cross pipe stub out and bottom anchor pipe of the next smaller size pipe as shown in the Standard Pipe Sizes and Max Pipe Runners Lengths table.

(2) Recommended values of slope are 3:1, 4:1, and 6:1. All quantities, calculations, and dimensions shown herein are based on these recommended values. Slope of 3:1 or flatter is required for vehicle safety.

(3) This standard allows for the placement of only one pipe runner across each culvert pipe opening. In order to limit the clear opening to be traversed by an errant vehicle, the following conditions must be met:

For Design 1 through 5 culvert pipe sizes, the skew must not exceed 45°.
For Design 6 culvert pipes, the skew must not exceed 30°.
For Design 7 culvert pipes, the skew must not exceed 15°.

If the above conditions cannot be met, the designer should consider using a safety end treatment with flared wings. For further information, refer to the TxDOT "Roadway Design Manual."

(4) Miter = slope of mitered end of pipe culvert.

MATERIAL NOTES:

Synthetic fibers listed on the "Fibers for Concrete" Material Producer List (MPL) may be used in lieu of steel reinforcing in riprap concrete unless noted otherwise.

Provide pipe runners, cross pipes, and anchor pipes that meet the requirements of ASTM A53 (Type E or S, Gr B), ASTM A500 Gr B, or API 5LX52.

Provide ASTM A307 bolts and nuts.

Galvanize all steel components, except concrete reinforcing, after fabrication. Repair galvanizing damaged during transport or construction in accordance with the specifications.

GENERAL NOTES:

Pipe runners are designed for a traversing load of 1,800 pounds at yield as recommended by Research Report 280-1, "Safety Treatment of Roadside Cross-Drainage Structures", Texas Transportation Institute, March 1981.

Safety end treatments (SET) shown herein are intended for use in those installations where out of control vehicles are likely to traverse the openings approximately perpendicular to the Pipe Runners.

Construct concrete riprap and all necessary inverts in accordance with the requirements of Item 432, "Riprap."

Payment for riprap and toewall is included in the price bid for each safety end treatment.

Texas Department of Transportation | Bridge Division Standard

SAFETY END TREATMENT
FOR DESIGN 1 TO 7 ARCH PIPE CULVERTS TYPE II ~ CROSS DRAINAGE
SETP-CD-A

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designed	checked
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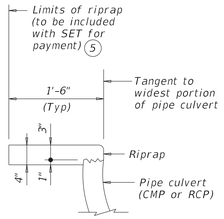
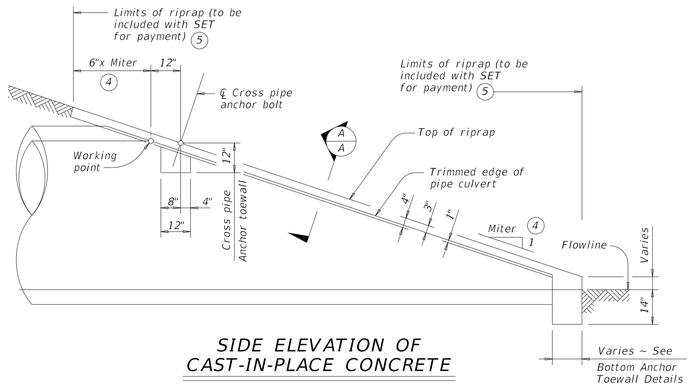


SHOWING TYPICAL PIPE CULVERT AND RIPRAP

SECTION A-A



SIDE ELEVATION OF CAST-IN-PLACE CONCRETE

(Showing reinforced concrete pipe (RCP) culvert. Details of corrugated metal pipe (CMP) culvert are similar. Pipe runners not shown for clarity.)

ESTIMATED CONCRETE RIPRAP QUANTITIES (CY) (6)

FOR BOTH CORRUGATED METAL PIPE CULVERTS AND CONCRETE PIPE CULVERTS

Design	3:1 Side Slope				4:1 Side Slope				6:1 Side Slope			
	0° Skew	15° Skew	30° Skew	45° Skew	0° Skew	15° Skew	30° Skew	45° Skew	0° Skew	15° Skew	30° Skew	45° Skew
1	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.8	0.9
2	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.8	0.8	1.0
3	0.6	0.6	0.7	0.8	0.7	0.7	0.8	0.9	0.9	1.0	1.0	1.2
4	0.7	0.7	0.8	0.9	0.8	0.9	0.9	1.0	1.1	1.1	1.2	1.4
5	0.8	0.8	0.9	1.0	1.0	1.0	1.1	1.2	1.3	1.3	1.4	1.7
6	0.9	1.0	1.0	N/A	1.1	1.1	1.2	N/A	1.4	1.5	1.6	N/A
7	1.0	1.1	N/A	N/A	1.3	1.3	N/A	N/A	1.7	1.7	N/A	N/A

(4) Miter = slope of mitered end of pipe culvert.

(5) Riprap placed beyond the limits shown will be paid for as concrete riprap in accordance with Item 432, "Riprap."

(6) Quantities shown are for one end of one pipe culvert. For multiple pipe culverts, quantities will need to be adjusted. Riprap quantities are for Contractor's information only.

SHEET 2 OF 3

Texas Department of Transportation | Bridge Division Standard

SAFETY END TREATMENT
FOR DESIGN 1 TO 7
ARCH PIPE CULVERTS
TYPE II ~ CROSS DRAINAGE

SETP-CD-A

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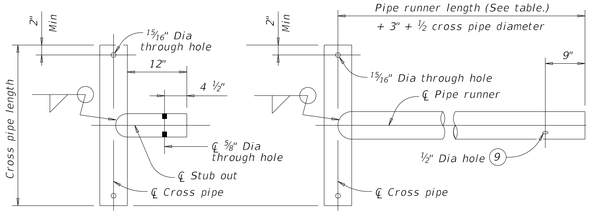
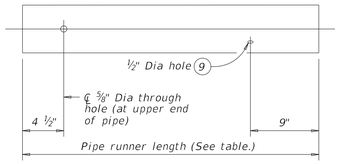


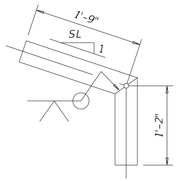
OPTION A1 OPTION A2

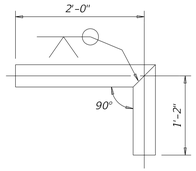
CROSS PIPE AND CONNECTIONS DETAILS



NOTE: The separate pipe runner shown is required when Cross Pipe Connection Option A1 is used.

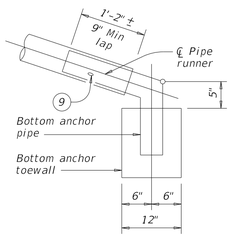
PIPE RUNNER DETAILS

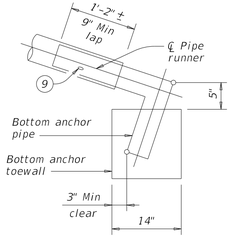




OPTION B1 OPTION B2

BOTTOM ANCHOR PIPE DETAILS (10)

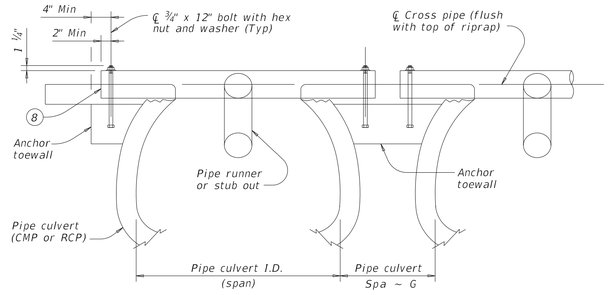




OPTION B1 OPTION B2

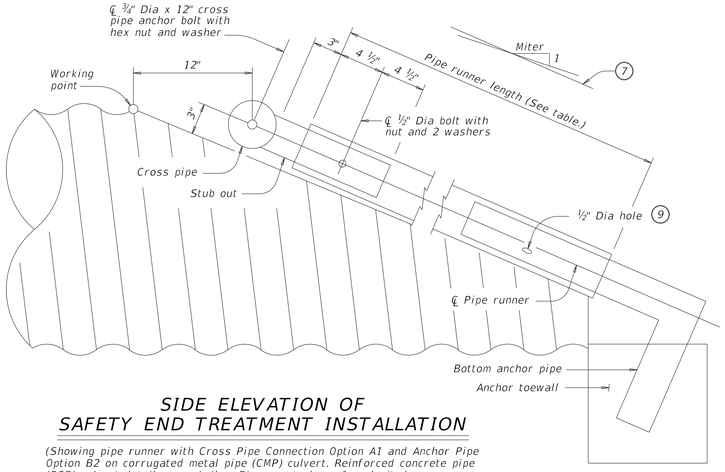
BOTTOM ANCHOR TOEWALL DETAILS

(Culvert and riprap not shown for clarity.)



SHOWING CROSS PIPE AND ANCHOR TOEWALL

SECTION A-A



SIDE ELEVATION OF SAFETY END TREATMENT INSTALLATION

(Showing pipe runner with Cross Pipe Connection Option A1 and Anchor Pipe Option B2 on corrugated metal pipe (CMP) culvert. Reinforced concrete pipe (RCP) culvert details are similar. Riprap not shown for clarity.)

(7) Note that actual slope of pipe runner may vary slightly from side slope of riprap and trimmed culvert pipe edge.

(8) Ensure that riprap concrete does not flow into the cross pipe so as to permit disassembly of the bolted connection to allow cleanout access.

(9) After installation, inspect the 1#2" hole to ensure that the lap of the pipe runner with the bottom anchor pipe is adequate.

(10) At fabricator's option, a heat bend to a smooth 5" radius or a manufactured elbow (of the same material as the runner) may be substituted for the mitered and welded joint in the bottom anchor pipe.

SHEET 3 OF 3

Texas Department of Transportation | Bridge Division Standard

SAFETY END TREATMENT
FOR DESIGN 1 TO 7 ARCH PIPE CULVERTS TYPE II ~ CROSS DRAINAGE
SETP-CD-A

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TABLE OF VARIABLE DIMENSIONS (5) AND QUANTITIES FOR ONE HEADWALL

Slope	Design	Size of Pipe Arch Span	Size of Pipe Arch Rise	Values for One Pipe W	Values for One Pipe Reinf (Lbs) (1)	Values for One Pipe Conc (CY) (2)	Values To Be Added for Each Addt'l Pipe W	Values To Be Added for Each Addt'l Pipe Reinf (Lbs) (1)	Values To Be Added for Each Addt'l Pipe Conc (CY) (2)
2:1	1	17"	13"	9' – 9"	130	1.1	2' – 5"	28	0.3
	2	21"	15"	10' – 9"	139	1.3	2' – 11"	33	0.3
	3	28"	20"	13' – 0"	184	1.8	3' – 9"	43	0.5
	4	35"	24"	14' – 11"	249	2.2	4' – 7"	50	0.6
	5	42"	29"	17' – 2"	311	3.2	5' – 5"	69	0.9
	6	49"	33"	19' – 1"	342	3.8	6' – 3"	77	1.1
	7	57"	38"	21' – 5"	438	4.7	7' – 2"	86	1.4
	8	64"	43"	23' – 8"	508	5.6	8' – 2"	110	1.6
	9	71"	47"	25' – 7"	577	6.5	9' – 1"	120	2.0
3:1	1	17"	13"	13' – 11"	182	1.6	2' – 5"	28	0.3
	2	21"	15"	15' – 3"	196	1.8	2' – 11"	33	0.3
	3	28"	20"	18' – 4"	270	2.6	3' – 9"	42	0.5
	4	35"	24"	20' – 11"	356	3.2	4' – 7"	50	0.6
	5	42"	29"	24' – 0"	434	4.5	5' – 5"	70	0.9
	6	49"	33"	26' – 7"	499	5.4	6' – 3"	77	1.1
	7	57"	38"	29' – 9"	628	6.7	7' – 2"	87	1.4
	8	64"	43"	32' – 10"	715	7.9	8' – 2"	111	1.6
	9	71"	47"	35' – 5"	798	9.2	9' – 1"	120	2.0
4:1	1	17"	13"	18' – 1"	236	2.1	2' – 5"	28	0.3
	2	21"	15"	19' – 9"	268	2.4	2' – 11"	33	0.3
	3	28"	20"	23' – 8"	336	3.3	3' – 9"	42	0.5
	4	35"	24"	26' – 11"	460	4.2	4' – 7"	50	0.6
	5	42"	29"	30' – 10"	557	5.8	5' – 5"	69	0.9
	6	49"	33"	34' – 1"	653	6.9	6' – 3"	78	1.1
	7	57"	38"	38' – 1"	819	8.6	7' – 2"	87	1.4
	8	64"	43"	42' – 0"	950	10.2	8' – 2"	111	1.7
	9	71"	47"	45' – 3"	1,053	11.9	9' – 1"	120	2.0
6:1	1	17"	13"	26' – 5"	343	3.1	2' – 5"	29	0.3
	2	21"	15"	28' – 9"	381	3.5	2' – 11"	33	0.3
	3	28"	20"	34' – 4"	504	4.9	3' – 9"	42	0.5
	4	35"	24"	38' – 11"	673	6.1	4' – 7"	50	0.6
	5	42"	29"	44' – 6"	823	8.5	5' – 5"	70	0.9
	6	49"	33"	49' – 1"	945	10.1	6' – 3"	78	1.1
	7	57"	38"	54' – 9"	1,227	12.5	7' – 2"	87	1.4
	8	64"	43"	60' – 4"	1,407	14.8	8' – 2"	110	1.7
	9	71"	47"	64' – 11"	1,571	17.3	9' – 1"	119	2.0

(1) Total quantities include one 3'–1" lap for bars over 60 ft in length.

(2) Quantities shown are for metal pipe and will decrease slightly for concrete pipe installations.

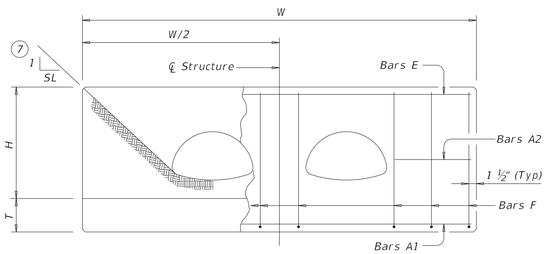
(3) For vehicle safety, construct curbs no more than 3" above finished grade. Reduce curb heights if necessary, to meet these requirements. No changes will be made in quantities and no additional compensation will be allowed for this work.

(4) K is measure from top of curb to inside face of pipe.

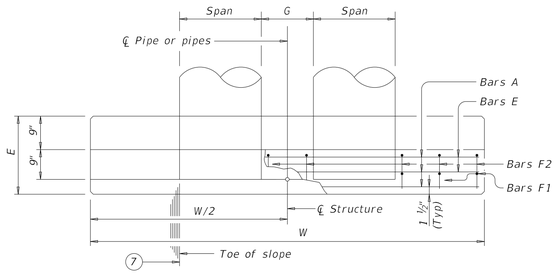
(5) Dimensions shown are usual and maximum.

(6) Quantities shown are for one structure end only (one headwall).

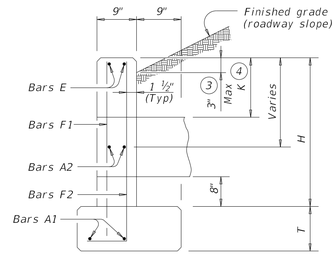
(7) Indicated slope is perpendicular to centerline pipe or pipes.



ELEVATION



PLAN



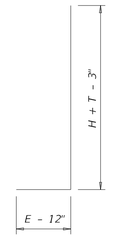
SECTION AT CENTER OF PIPE

TABLE OF CONSTANT DIMENSIONS

Design	Size of Pipe Arch Span	Size of Pipe Arch Rise	G	K (5)	H	T	E
1	17"	13"	1' – 0"	1' – 0"	2' – 7"	0' – 10"	1' – 6"
2	21"	15"	1' – 2"	1' – 0"	2' – 9"	0' – 10"	1' – 6"
3	28"	20"	1' – 5"	1' – 0"	3' – 2"	0' – 10"	1' – 10"
4	35"	24"	1' – 8"	1' – 0"	3' – 6"	0' – 10"	2' – 0"
5	42"	29"	1' – 11"	1' – 0"	3' – 11"	1' – 0"	2' – 4"
6	49"	33"	2' – 2"	1' – 0"	4' – 3"	1' – 0"	2' – 6"
7	57"	38"	2' – 5"	1' – 0"	4' – 8"	1' – 0"	2' – 10"
8	64"	43"	2' – 10"	1' – 0"	5' – 1"	1' – 0"	3' – 0"
9	71"	47"	3' – 2"	1' – 0"	5' – 5"	1' – 0"	3' – 4"

TABLE OF (6) REINFORCING STEEL

Bar	Size	Spa	No.
A1	#5	~	2
A2	#5	1' – 6"	~
E	#5	~	2
F	#5	1' – 0"	~



BARS F2

MATERIAL NOTES:
Provide Grade 60 reinforcing steel.
Provide Class C concrete (f'c = 3,600 psi).

GENERAL NOTES:
Designed according to AASHTO LRFD Bridge Design Specifications.
Do not mount bridge rails of any type directly to these culvert headwalls.
This standard may not be used for wall heights, H, exceeding the values shown.

Cover dimensions are clear dimensions, unless noted otherwise. Reinforcing dimensions are out-to-out of bars.

Texas Department of Transportation — Bridge Division Standard

CONCRETE HEADWALLS WITH PARALLEL WINGS FOR NON-SKEWED ARCH PIPE CULVERTS

CH-PW-A-0

FILE:	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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REVISIONS				
	DIST	COUNTY		SHEET NO.

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BURNS McDONNELL
6200 BRIDGE POINT PARKWAY, SUITE 400
AUSTIN, TX 78730
512-872-7130
Burns & McDonnell Engineering Co., Inc.
Firm Reg. No. F-845

date	detailed
4/3/2026	J. GARCIA
designed	checked
G. KARKI	R. CASTOR

THE CITY OF SAN MARCOS

FM 1978 WATER RECLAMATION FACILITY

CIVIL
TxDOT REF STANDARD DETAIL SHEET X

project	contract
187533	

drawing 006C5XX – rev. 0

sheet of sheets

file 187533_XXXCXXX.DGN

jagarcia2
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