



SAN ANTONIO WATER SYSTEM
DSP Clayton Tank Replacement Project
SAWS Job No. 14-6101
Solicitation No. CO-00028

ADDENDUM NO. 5
November 5, 2015

TO BIDDER OF RECORD:

The following changes, additions, and/or deletions are hereby made a part of the Contract Documents for the SAWS DSP Clayton Tank Replacement Project, for the San Antonio Water System, San Antonio, Texas, Dated October 2015, as fully and completely as if the same were set forth therein.

BIDDING AND CONTRACT DOCUMENTS

References

1. CLAYTON TANK BURIED PIPE

INCLUDE the attached Existing Clayton Facility Layout for reference of existing buried pipe at the Clayton Facility. CONTRACTOR is to demolish all below-grade piping and utilities as part of this project. Piping to be removed and plugged five (5) feet beyond property line.

CONTRACTOR shall conduct subsurface underground engineering to verify the locations, size, depths and materials of all existing underground utilities at no cost to the OWNER whether shown on the plans or not. Findings shall be documented by the contractor in the Record Drawings.

2. CLAYTON FACILITY WELLS

INCLUDE the attached Clayton Facility well data sheets for reference only.

Specifications

3. SPECIFICATION – SECTION 02503

REMOVE AND REPLACE Section 02503 – Lead Paint Removal in its entirety with the attached version.

4. SPECIFICATION - SECTION 02504

REMOVE AND REPLACE Section 02504 – Asbestos Containing Material(s) Removal in its entirety with the attached version.

NOTE: Handling of Asbestos Cement Pipe shall also follow SAWS Standard Specification Item No. 3000 – Handling Asbestos Cement Pipe. Where these specifications and the applicable regulations conflict, the more stringent shall apply. There is no separate measurement and payment for Item No. 3000.

5. SPECIFICATION - SECTION 17920

INSERT the following language into Section 17920 – Control Narrative, Part 3.1:

N. *Existing Tank Level Switch (LE-100, LE-101, LE-102) control*

1. *Existing level switch LE-100, LE-101, LE-102 will be relocated at the new ground storage tank.*
2. *Provide same control strategy for station no. 3 as station no. 1 to interlock station valve.*

O. *In the process operation, it only allows one station to provide water to new storage tank. Provide PLC program to interlock station valve to prevent multiple valve open at same time and HMI display on which station is providing water and which station is locked.*

Drawings

6. DOMES SLEEVES

INCLUDE Exhibit D attached as part of Sheet T-SPS-1 for location and details on installing the tank roof dome sleeves for the level electrodes.

7. SHEET C-SPS-17

REMOVE AND REPLACE Sheet C-SPS-17 Proposed Yard Piping Plan & Profile III (Sheet 21 of 99) in its entirety with the attached sheet.

8. SHEET C-SPS-18

REMOVE AND REPLACE Sheet C-SPS-18 Proposed Yard Piping Plan & Profile IV (Sheet 22 of 99) in its entirety with the attached sheet.

9. SHEET E-SPS-4

REMOVE AND REPLACE Sheet E-SPS-4 Electrical Site Plan – Proposed (Sheet 60 of 99) in its entirety with the attached sheet.

10. CONSTRUCTION DRAWINGS

REMOVE AND REPLACE the following sheets in their entirety with the attached sheets. These sheets include a revision to the Texas Professional Engineer's signature date.

- GENERAL SHEETS – G-1 through G-3
- SOMERSET FACILITY CIVIL SHEETS – C-SPS-1 through C-SPS-5
- SOMERSET FACILITY CIVIL SHEETS – C-SPS-8 through C-SPS-16
- SOMERSET FACILITY CIVIL SHEETS – C-SPS-21 through C-SPS-24
- GROUND STORAGE TANK SHEETS – T-SPS-1 through T-SPS-5
- STRUCTURAL SHEETS – S-SPS-10 through S-SPS-11
- SHEET – M-SPS-2
- SHEET – M-SPS-4
- HVAC SHEETS – H-SPS-1 through H-SPS-2
- SHEET – D-SPS-1
- SHEET – C-CPS-1
- CLAYTON FACILITY CIVIL SHEETS – C-CPS-3 through C-CPS-4
- CLAYTON FACILITY CIVIL SHEETS – C-CPS-7 through C-CPS-8
- STANDARD DETAILS – SD-1 through SD-2

ACKNOWLEDGEMENT BY BIDDER

THE UNDERSIGNED ACKNOWLEDGES RECEIPT OF THIS ADDENDUM NO. 5 AND THE BID SUBMITTED HERewith IS IN ACCORDANCE WITH THE INFORMATION AND STIPULATION SET FORTH.

Date

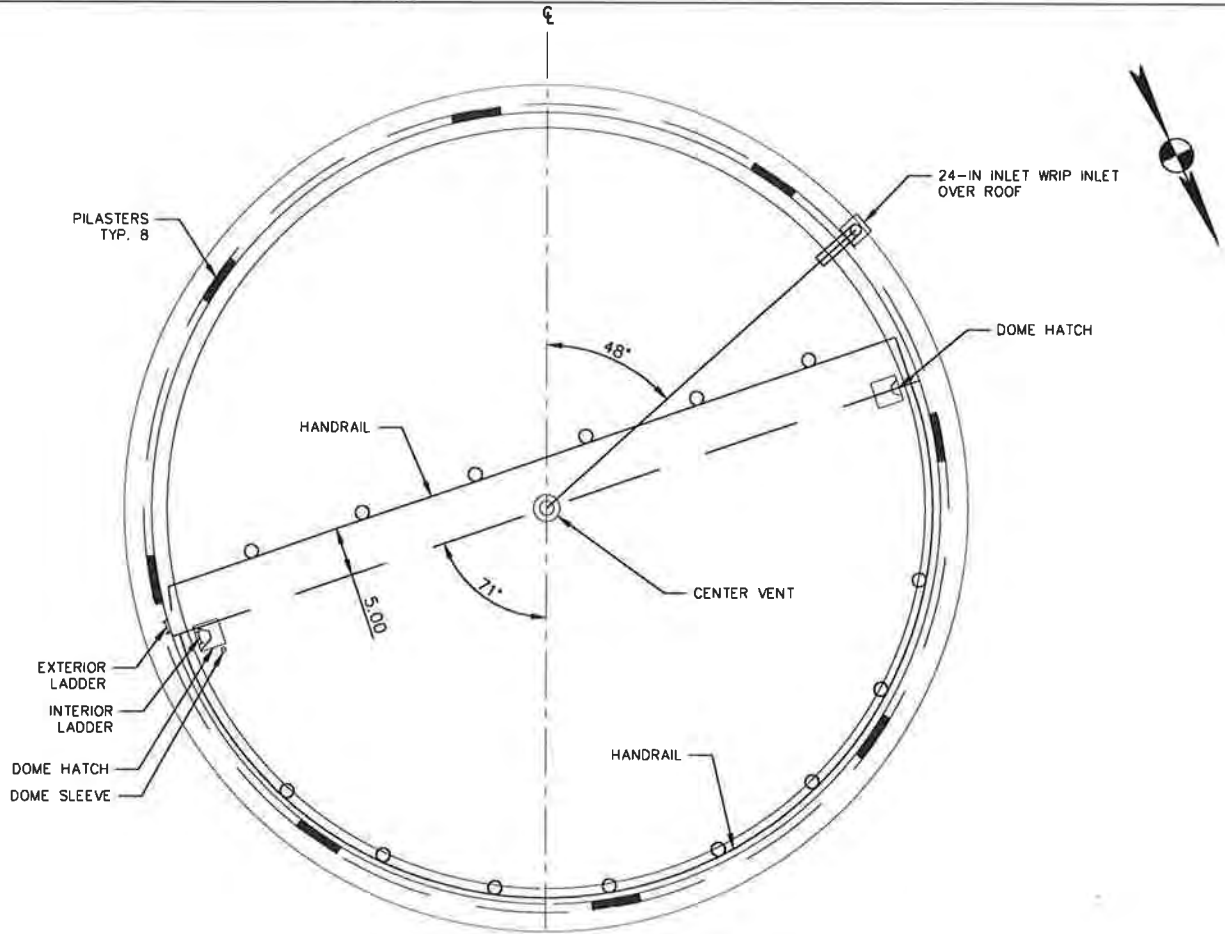
Signature of bidder

Appended hereto and part of Addendum No. 5 is:

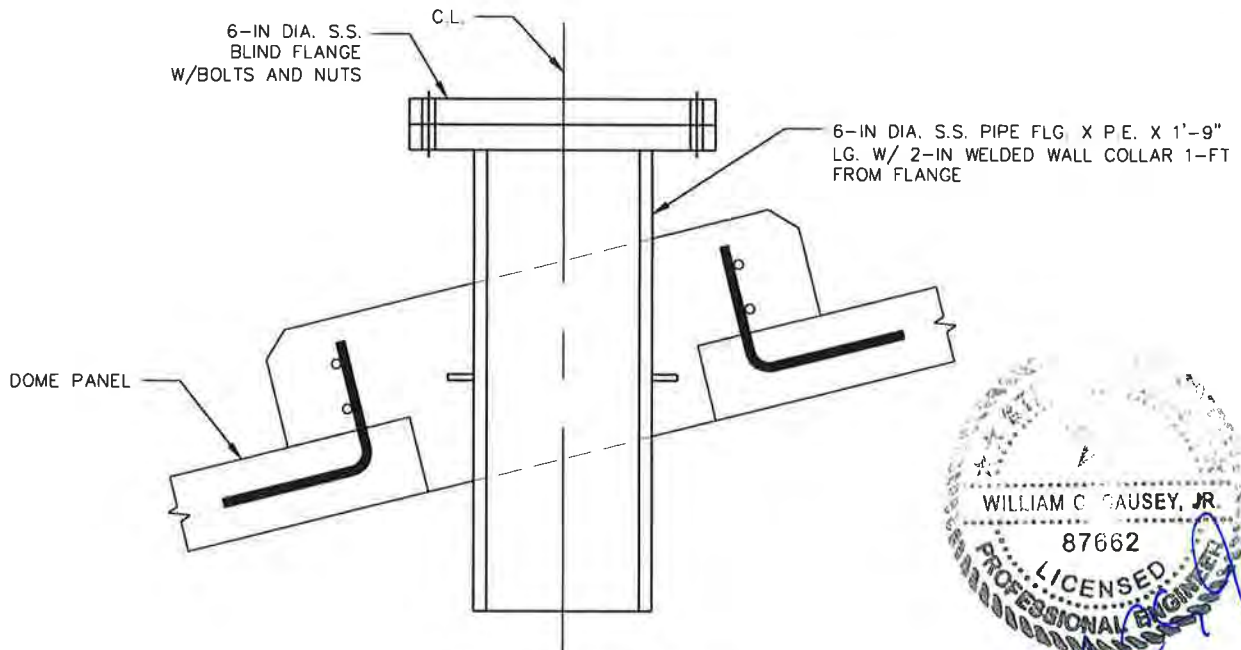
- EXHIBIT D – DOME SLEEVE LOCATION & DETAIL
- CLAYTON FACILITY EXISTING PIPE LAYOUT
- CLAYTON FACILITY WELL SCHEDULE DATA SHEETS
- SECTION 02503
- SECTION 02504
- SHEET C-SPS-17
- SHEET C-SPS-18
- SHEET E-SPS-4
- GENERAL SHEETS – G-1 through G-3
- SOMERSET FACILITY CIVIL SHEETS – C-SPS-1 through C-SPS-5
- SOMERSET FACILITY CIVIL SHEETS – C-SPS-8 through C-SPS-16
- SOMERSET FACILITY CIVIL SHEETS – C-SPS-21 through C-SPS-24
- GROUND STORAGE TANK SHEETS – T-SPS-1 through T-SPS-5
- STRUCTURAL SHEETS – S-SPS-10 through S-SPS-11
- SHEET – M-SPS-2
- SHEET – M-SPS-4
- HVAC SHEETS – H-SPS-1 through H-SPS-2
- SHEET – D-SPS-1
- SHEET – C-CPS-1
- CLAYTON FACILITY CIVIL SHEETS – C-CPS-3 through C-CPS-4
- CLAYTON FACILITY CIVIL SHEETS – C-CPS-7 through C-CPS-8
- STANDARD DETAILS – SD-1 through SD-2

END OF ADDENDUM NO. 5





DOME SLEEVE LOCATION PLAN
 SCALE: N.T.S.



DOME SLEEVE DETAIL
 SCALE: N.T.S.

WILLIAM C. GAUSEY, JR.
 87662
 LICENSED PROFESSIONAL ENGINEER
WCC
 11/5/15



GB PRJ #: 103187-00001
 Designed By: FJC
 Drawn By: FJC
 Reviewd By: WCC
 Date: NOVEMBER 2015

**SAN ANTONIO WATER SYSTEM
 DSP CLAYTON TANK REPLACEMENT PROJECT
 DOME SLEEVE LOCATION & DETAIL**

EXHIBIT D



922 Isom Road, Suite 100
 San Antonio, TX 78210
 Tel (210) 526-0286 Fax (210) 526-0325
 TBPE Registration Number F-14629
 Garza Bury, LLC © Copyright 2015

Sta. 11 Somerset

1" = 20'

100,000 GALLON ELEVATED TANK

- 4- 8" MUEBES VAL
- 2- 8" X 8" MITES
- 2- 8" X 1/4 MJ BENDS
- 1- 8" TRANS COUPLING
- 1- 6" X 6" VAULT
- 1- 8" PT. GLANDS

50,000 GAL. TANK

- 2- 8" uni flange
- 2- 8" field box gas
- 2- 8" duct
- 1- MJ 8" CHECK VALVE
- 4- 6" UP VAL. BOX
- 24- 6" PVC PIPE

100-24" poly bag

- 4- 2" poly Tape
- 20- concrete blocks

WORK SHOP

PUMP HOUSE

(13'-3")

PIT

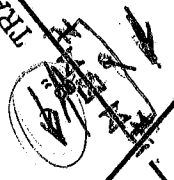
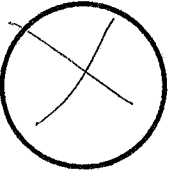
CAST CPLG.

17' OF 8" DU.

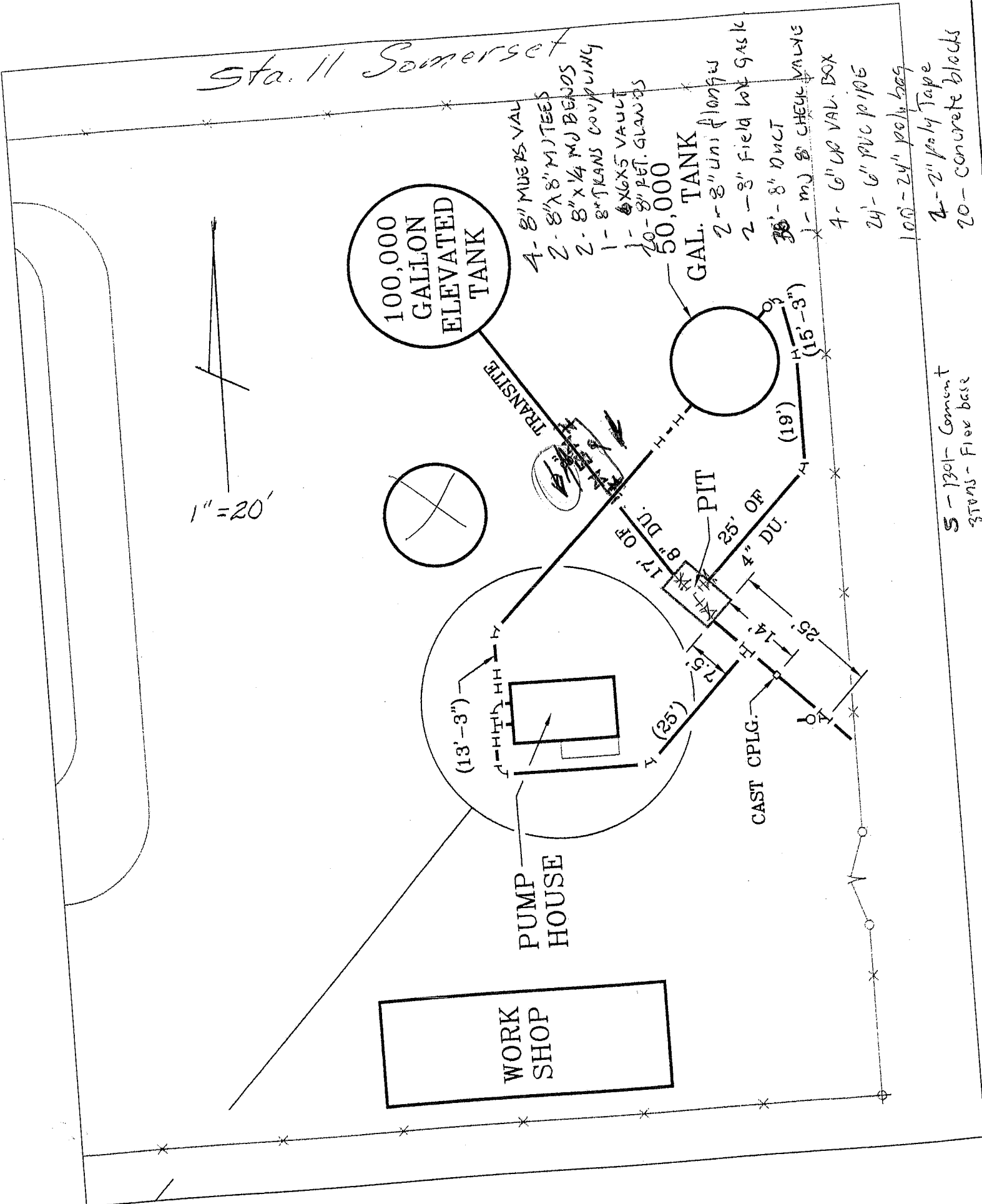
25' OF 4" DU.

(19')

(15'-3")



TRANSITE



- 5- 130#- Cement
- 3TMS- Flex base

COMPLETION SUMMARY

City Well Field, Somerset No. 4

Original Drill: ?
Original T.D.: 400' (?)
Static Level: (9/29/82) - 251'
Worked Over: (?) With 7" Liner From 0-400'
New Completion Depth: 385'
Top of 5" Liner: 362' with Left Turn "J" Tool
Blank 5" Liner: 263' - 365'
Screen: 365' - 385' PVC 5" OD RD Base .010 GA Screen
Pump Set @ 316' (Plus 2' to Suction)
Air Line: 316'
Specific Cap. (10/1/83): 0.89 (gpm/ft D.D.)

City Well Field, Somerset No. 5

Original Depth: 400'
Date: (?)
Static Level: (4/15/83) - 247'
Workover: 7/81 - No Info. Available
New Completion: 5" O.D. Liner to 385'
Screen: 340' - 382' PVC 5" OD RD Base .010 Screen
Blank: 340 to Surface
Pump Set At: 357'
Airline: 357'
Specific Cap: Not Measured

Somerset No. 2

Abandoned 4/22/83: Casing Collapsed @ 232'
Unable to Recover Hole. Original Data Unavailable.

TEXAS WATER DEVELOPMENT BOARD

WELL SCHEDULE

Aquifer Wilcox

Field No. _____

State Well No. 68-51-204

Owner's Well No. #3

County Brewer

1. Location: 1/4, 1/4 Sec., Block, Survey NL 18 EL 2.7

2. Owner: City of Somerset Address: Somerset, Tex

Tenant: _____ Address: _____

Driller: ME Higdon Water Well Dr Address: 121 E Trinity Pearce St

3. Elevation of _____ is 651 ft. above msl, determined by _____

4. Drilled: 11-28 1973; Dug, Cable Tool, Rotary

5. Depth: Rept. 400 ft. Meas. _____ ft.

6. Completion: Open Hole, Straight Wall, Underreamed, Gravel Packed

7. Pump: Mfr. Gould Type Subm

CASINO & BLANK PIPE			
Cemented From <u>50</u> ft. to <u>0</u> ft.			
Diam. (in.)	Type	Setting, ft.	
		from	to
<u>8 5/8</u>	<u>new</u>	<u>0</u>	<u>400</u>

No. Stages _____, Borehole Diam. _____ in., Setting 752 ft.

Column Diam. 3 in., Length Tailpipe _____ ft.

8. Motor: Fuel Elect Make & Model Franklin HP. 10

9. Yield: Flow _____ gpm, Pump 125 gpm, Meas., Rept., Mr. Oliver

10. Performance Test: Date _____ Length of Test _____ Made by _____

Static Level _____ ft. Pumping Level _____ ft. Drawdown _____ ft.

Production _____ gpm Specific Capacity _____ gpm/ft.

11. Water Level: _____ ft. rept. _____ 19 _____ above _____ which is _____ ft. above surface.
 _____ ft. meas. _____ 19 _____ below _____ which is _____ ft. above surface.
 _____ ft. rept. _____ 19 _____ above _____ which is _____ ft. above surface.
 _____ ft. meas. _____ 19 _____ below _____ which is _____ ft. above surface.
 _____ ft. rept. _____ 19 _____ above _____ which is _____ ft. above surface.
 _____ ft. meas. _____ 19 _____ below _____ which is _____ ft. above surface.

12. Use: Dom., Stock, Public Supply Ind., Irr., Waterflooding, Observation, Not Used, _____

13. Quality: (Remarks on taste, odor, color, etc.) _____

Temp. _____ °F, Date sampled for analysis _____ Laboratory _____

Temp. _____ °F, Date sampled for analysis _____ Laboratory _____

Temp. _____ °F, Date sampled for analysis _____ Laboratory _____

14. Other data available as circled: Driller's Log, Radioactivity Log, Electric Log, _____

WELL SCREEN			
Screen Openings			
Diam. (in.)	Type	Setting, ft.	
		from	to
<u>8</u>	<u>Perforated</u>	<u>250</u>	<u>400</u>

Formation Samples, Pumping Test, _____

15. Record by: Eulogio Rodriguez, Jr. Date 9-4 1975

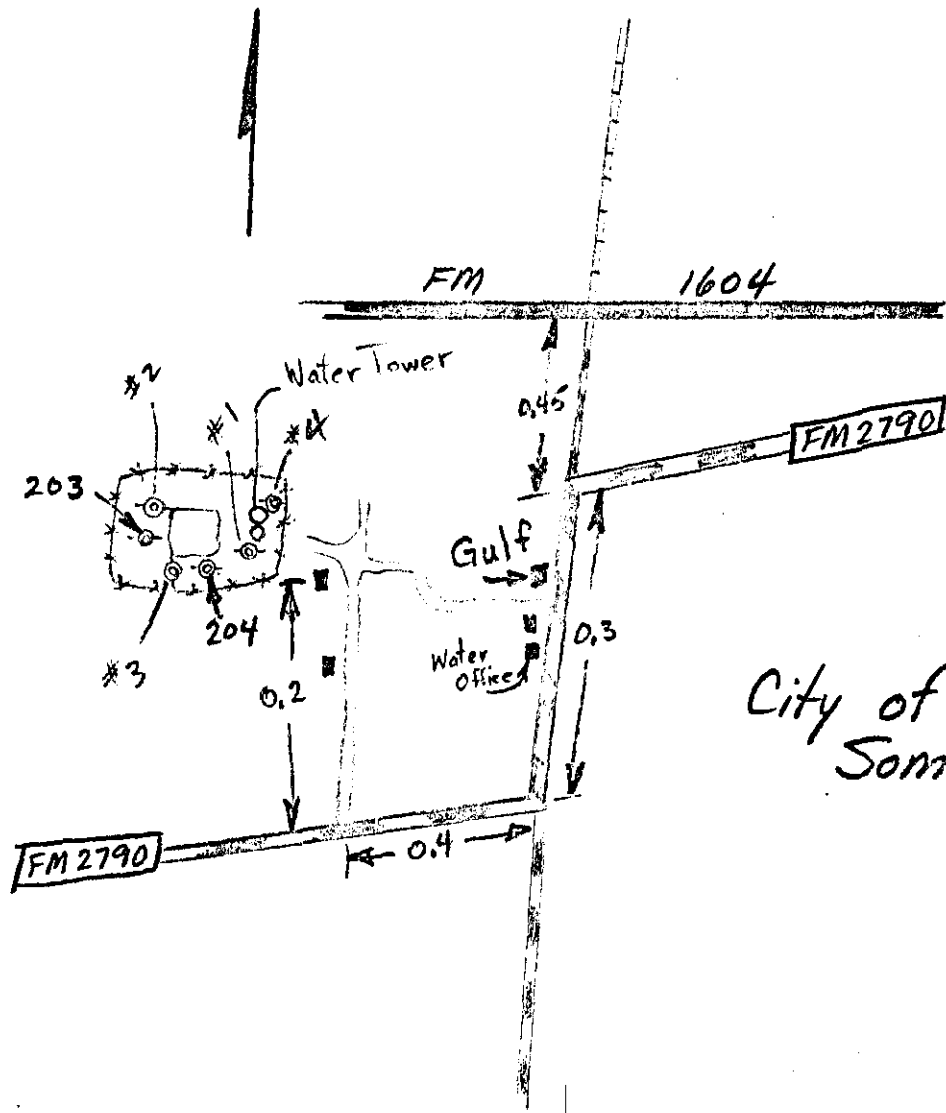
Source of Data Mr. Oliver, Obs and D.L.

16. Remarks: _____

RECEIVED

AUG 23 '79

CR/TDWB



City of
Somerset

RECEIVED
AUG 23 '79
CR/TDWR

AY 68-51-204

SECTION 02503

REMOVAL OF PROTECTIVE COATINGS THAT MAY CONTAIN REGULATED MATERIAL

PART 1 REMOVAL OF PROTECTIVE COATING

1.01 PROJECT DESCRIPTION - SUMMARY OF WORK

- A. This section outlines for scope of work for Protective Coatings that may contain Cadmium, Chromium, and/or Lead Removal at the following buildings/structures: 100,000 gallon elevated storage tank, ground storage tank, chlorine building and associated pumps for the ground tank at the DSP Clayton Tank located at 19845 Clayton Street, Bexar County, Somerset, Texas; and 300,00 gallon ground storage tank, chlorine building, and associated pumps for the ground tank at the DSP Clayton Tank located at 19260 Somerset Road, Bexar County, Somerset, Texas. The Project consists of ~~to~~ Protective Coatings Containing Cadmium, Chromium, and/or Lead Paint component removal and/or Option B Lead-Based Paint and possible chromates in the primer removal on existing materials and equipment. Work is to be performed by trained workers. All recycling of components or waste generated from abatement in the above mentioned facilities must be identified to the San Antonio Water System (SAWS), County of Bexar, San Antonio, Texas as the building owner. The contractor shall dispose of the contaminated materials in accordance of all federal and state hazardous waste regulations.
- B. Plans and location drawings for removal shall be submitted to the SAWS for review.
- C. The work on this Project consists of the removal and/or recycling of identified Lead- or heavy metals (cadmium and chromium) Based Paint from the interior and exterior of buildings and structures located at the DSP Clayton Tank Stations. The contractor shall provide a written removal plan that details proposed methods of abatement while preventing environmental contamination.
- D. Contractor shall follow the requirements identified in 29CFR1926, Construction Standards and in particular 29CFR1926.62, 29CFR1926.1126 & 29CFR1926.1127 as applicable.

1.02 SCOPE OF WORK

- A. The contractor must confine operations to areas within Contract limits established. Temporary barrier tape must be around the work areas in all directions to prevent access.
- B. The contractor must furnish all materials, supplies, labor and equipment to provide for environmental protection and worker protection in accordance with all Federal, State and local laws, regulations and safety practices regarding painting and coating of water tanks.
- C. This project is to be conducted in accordance with the requirements of 29 CFR 1926.62, Safety and Health Regulations for Construction, Occupational Health and Environmental Controls.

PART 2 PROJECT/WORK IDENTIFICATION

2.01 GENERAL:

A. Project Address(s).

SAWS – DSP Clayton Tank
19845 Clayton Street
Somerset, Bexar County, Texas

&

SAWS – DSP Clayton Tank
19260 Somerset Road
Somerset, Bexar County, Texas

B. Project Scope.

1. The purpose of this specification is the removal of Lead or heavy metals (cadmium and chromium)- Based Paint containing materials in specified areas of the building, as identified in the general contract specifications.

2.02 PURPOSE

A. The purpose of the specification can be summarized as follows:

1. The purpose of this project is to remove and dispose of the following identified Lead-Based Paint containing materials (primers may contain cadmium and chromium):

19845 Clayton Street Property

Elevated Tank

- Silver paint on the metal

Pump House Building

- Tan paint on the concrete masonry unit wall pipe
- Orange paint on a metal pump valve

19260 Somerset Road Property

Chlorine Building

- Blue paint on the metal pipe

Pump House Building

- Orange paint on the metal pipe
- Yellow paint on the exterior walls of the chlorine building
- Silver paint on a metal pipe
- Brown paint on the exterior door of the chlorine building

2.03 REMOVAL

- A. The Contractor shall remove and dispose of the above listed material either by manual demolition and recycling or small scale abatement. The contractor shall dispose of the contaminated materials in accordance of all federal and TCEQ hazardous waste regulations. The Contractor will remove the above listed material in a manner that will minimize the creation of particulate material and keep the regulated chemical coatings intact to the maximum extent possible to limit the release of these materials into the environment.

PART 3 PROTECTIVE COATINGS CONTAINING CADMIUM, CHROMIUM, AND/OR LEAD CONTAINING MATERIALS:

The Lead-Based Paint containing materials identified in previous sampling (Lead-Based Paint Survey Reports, RKEI November, 2014) will require abatement or component removal. Sampling for any additional heavy metals is required prior to beginning of removal activities.

END OF SECTION

SECTION 2

CODES AND REGULATIONS

3.01 RULES AND GUIDLINES:

- A. This Section includes the following General Applicability of Codes, Regulations and Standards: Except to the extent that more explicit or more stringent requirements are written directly into the contract documents, all applicable codes, regulations, and standards have the same force and effect (and are made a part of the contract documents by reference) as if copied directly into the contract documents, or as if published copies are bound herewith. The following is a list of applicable requirements to this project. It is not intended to be a complete listing of all laws and regulations to which the Contractor must comply.
- B. Contractor Responsibility: The Contractor will assume full responsibility and liability for the compliance with all applicable Federal, State, and local regulations pertaining to work practices, hauling, disposal, and protection of workers, visitors to the site, and persons occupying areas adjacent to the site. The Contractor is responsible for providing medical examinations and maintaining medical records of personnel as required by the applicable Federal, State, and local regulations. The Contractor will hold SAWS and SAWS's Representative harmless for failure to comply with any applicable work, hauling, disposal, safety, health or other regulation on the part of the contractor, employees, or subcontractors.
- C. Code of Federal Regulations:
1. 29 CFR 1926, "Safety and Health Regulations for Construction" (Construction Industry Standards).
 - a. 29 CFR 1926.62, "Lead".
 - b. 29 CFR 1926.103 "Respiratory Protection".
 - c. 29 CFR 1910.1027 "Cadmium"
 - d. 29 CFR 1926.1127 "Cadmium"
 - e. 29 CFR 1910.1026 "Chromium"
 - f. 29 CFR 1926.1126 "Chromium"
 2. 40 CFR 50, "National Primary and Secondary Ambient Air Quality Standards".
 - a. 40 CFR 50 Appendix B, "Reference Method for the Determination of Suspended Particulate Matter in the Atmosphere (High Volume Method)".
 - b. 40 CFR 50 Appendix G, "Reference Method for the Determination of Lead in Suspended Particulate Matter Collected from Ambient Air".
 3. 40 CFR 58, "Ambient Air Quality Surveillance".
 4. 40 CFR 60 Appendix A, "Visual Determination of Fugitive Emissions from Material Sources and Smoke Emissions from Fires".
 5. 40 CFR 117, "Determination of Reportable Quantities for Hazardous Substances".
 6. 40 CFR 262, "Standards Applicable to Generation of Hazardous Waste".
 7. 40 CFR 263, "Standard Applicable to Transporters of Hazardous Waste".
- D. National Institute for Occupational Health and Safety
1. NIOSH Method 7082, "Lead" (or equivalent).
- E. SSPC Guide 6 (CON), "Guide for Containing Debris Generated During Paint Removal Operations".

- F. SSPC Guide 7 (DIS) "Guide for the Disposal of Lead Contaminated Surface Preparation Debris".
- G. SSPC Publication 91-18, Industrial Lead Paint Removal Handbook.
- H. Texas Air Control Board
 - 1. Texas Administrative Code (TAC) 30, Chapter 101, "General Rules".
 - 2. Texas Administrative Code (TAC) 30, Chapter III, "Control of Air Pollution from Visible Emissions and Particulate Matter".

END OF SECTION

SECTION 3
SUBMITTALS

PART 1 GENERAL

1.01 RELATED DOCUMENTS

- A. General Provisions of Contract, including General and Supplementary Conditions apply to work of this section.

1.02 SUMMARY

- A. This section specifies administrative and procedural requirements for submittals required for performance of the Work, including:
 1. Contractor's construction schedule,
 2. Product data, and
 3. Miscellaneous submittals.

1.03 ADMINISTRATIVE SUBMITTALS

- A. Refer to Contract Documents for requirements for administrative submittals. Such submittals include, but are not limited to:
 1. Applications for Payment,
 2. Insurance Certificates,
 3. Performance and Payments Bonds, and
 4. List of Subcontractors.

1.04 COORDINATION

- A. Coordinate both the listing and timing of reports and activities required by provisions of this section and other sections, so as to provide consistency and logical coordination between reports. Maintain coordination and correlation between separate reports by updating at weekly intervals. Make appropriate distribution of each report and updated report to all parties involved in the work, including SAWS's Representative and SAWS. In particular provide close coordination of the progress schedule, listing of subcontractors, progress reports, and payment.
- B. Coordinate transmittal of different types of submittals for the related elements of the work so processing will not be delayed by the need to review submittals concurrently for coordination.
- C. SAWS's Representative reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

1.05 SUBMITTAL

- A. Prepare a protective coating removal plan that describes the methods to be used that minimally disturb the protective coating during removal.
- B. Allow sufficient review time so that the project will not be delayed as a result of the time required to process submittals, including time for re-submittals.

- C. Allow one week (5 working days) for review. Allow additional time if processing must be delayed to permit coordination with subsequent submittals. SAWS's Representative will promptly advise the Contractor when a submittal must be delayed for coordination.
- D. No extension of the Contract Time will be authorized because of failure to transmit submittals to SAWS's Representative sufficiently in advance of the work to permit processing.

1.06 PROGRESS MEETINGS

- A. Representatives of the Contractor, the Consultant, and SAWS will meet at the building site or at some other designated meeting place at intervals as necessary to maintain an optimum degree of communication for the progress of the work.
- B. Submit a revised schedule after each meeting or activity where revisions have been made. Issue the updated schedule within 3 days of the meeting.

1.07 PRE-ABATEMENT CONFERENCE

- A. Before any abatement work is started, the Contractor will provide to SAWS methods and procedures to be followed for the removal.

1.08 REPORTING

- A. Daily Log: The Contractor will maintain a daily log documenting the dates and time of but not limited to, the following items:
 1. Meetings; purpose, attendees, discussion (brief),
 2. Visitations; authorized and unauthorized,
 3. Personnel, by name, entering and leaving the work area,
 4. Special or unusual events, i.e. barrier breaching, equipment failures,
 5. Test results for exposure assessment if performed.

PART 2 INDEX OF SUBMITTALS

2.01 PRE ABATEMENT SUBMITTALS

- A. PRIOR TO BEGINNING WORK: Submit these in two (2) copies at least 30 working days before work is scheduled to start.
 1. Plan of Action
 2. Site Specific Safety & Health Plan
 3. Contingency Plan
 4. Project Work Schedule
 5. Type and SDS sheet of any paint stripper to be used
 6. Name and address of recycling facility to be used
 7. Disposal site for hazardous waste

2.02 ABATEMENT SUBMITTALS

- A. DURING THE COURSE OF ABATEMENT: These items will be submitted as available or required during the work period.
 1. Daily sign in sheets – submit at the end of each shift.
 2. Any request for change orders – submit as needed.
 3. Report of any accident or injury – within 24 hours of occurrence.
 4. Any incident affecting the ability of the Contractor to complete the project on time.

5. Visit of any official or representative of the media or regulatory agency – within 1 day of visit.

2.03 POST ABATEMENT SUBMITTALS:

- A. AFTER COMPLETION OF WORK: Copies of daily sign-in sheets not previously provided within three working days of project closeout to SAWS or their representative for review and comment prior to final payment.
- B. Copy of all recycling receipts listing items by physical description and number of items.
- C. Copy of all Disposal Waste Manifests – within 10 calendar days of project closeout.

END OF SECTION

SECTION 4
WORKER PROTECTION

PART 1 GENERAL

1.01 COMPLIANCE

- A. The CONTRACTOR shall develop and submit in accordance with SAWS Spec 902 a written Site Specific Health and Safety Plan. The Site Specific Plan will address CONTRACTOR compliance with the applicable OSHA Construction Standards (29CFR1926). The Site Specific plan will also address compliance with the OSHA hazard communication and other safety and health requirements of the project protecting employees from concentrations of lead, chromium VI, and cadmium as regulated by OSHA Construction Standards (29CFR1926.62-lead, 29CFR1926.1126-chromium VI and 29CFR1926.1127-cadmium) as applicable. The CONTRACTOR must comply with all the regulatory requirements for lead, cadmium, and chromium monitoring in accordance with OSHA's, 1926.62, 1926.1126 and 1926.1127 and/or all applicable federal, state and local regulations, and/or the Contract Documents, whichever is more stringent.

END OF SECTION

SECTION 02504

ASBESTOS CONTAINING MATERIAL REMOVAL

PART 1 GENERAL

1.01 PROJECT DESCRIPTION

The project site consists of asbestos removal of U.S. EPA category II, non-friable, asbestos containing material (ACM) at the **Clayton Tank Project** located at 19845 Clayton Street, in the City of Somerset, Bexar County, Texas.

CONTRACTOR shall conduct all work in accordance with this specification, SAWS requirements, and applicable Federal, State and Local regulations. CONTRACTOR shall comply with SAWS specification 902. **Where these specifications and the applicable regulations conflict, the more stringent shall apply.**

ACM quantities will be determined by CONTRACTOR prior to abatement activities.

The scope of work was determined based upon asbestos-containing materials (ACM) identified in a Comprehensive ACM survey(s) conducted by RABA KISTNER ENVIRONMENTAL, INC (RKEI) AND DIOS DADO ENVIRONMENTAL, LTD. (DDE), dated November 5, 2014.

The following non-friable ACM are scheduled for removal or have the potential for disturbance during renovation or demolition practices:

Window Glaze (2% Chrysotile) – all windows

1.02 CONTRACTOR RESPONSIBILITY

Prior to initiation of removal activities, CONTRACTOR shall provide to SAWS for review the specific written procedures to be used to retain the identified ACM in its non-friable, category II condition.

CONTRACTOR is responsible for field verification of ACM quantity and location. Any discrepancy between specified location and quantity of ACM and CONTRACTOR field estimates shall be verified in writing before CONTRACTOR can submit a change order. No change orders will be approved unless additional work is approved by SAWS in writing prior to initiation of work.

CONTRACTOR shall provide all labor, materials, equipment, and supplies to conduct non-friable ACM removal of the identified ACM prior to renovation or demolition activities.

CONTRACTOR may remove non-asbestos containing building materials (ACBM) as a pre-removal activity if completed prior to the start of the non-friable ACM removal, provided non-ACBM does not become contaminated with ACBM or ACBM debris, and ACBM will not be disturbed during the process.

CONTRACTOR shall monitor for and respond to water leaks, fires and other incidents that may occur while CONTRACTOR is in the Work Area.

CONTRACTOR shall limit on-site work to the hours permitted by SAWS.

CONTRACTOR shall place asbestos waste dumpster in area(s) designated by SAWS.

CONTRACTOR shall produce and deliver all copies of waste manifest within 10 calendar days for project closeout to SAWS.

1.03 WORKER PROTECTION - COMPLIANCE

The CONTRACTOR shall develop a written Site Specific Safety and Health Plan to establish and implement practices and procedures that include maintaining employee exposures to asbestos at concentrations equal to or less than the OSHA permissible exposure limit (PEL), time-weighted average limit (TWA), or excursion limit. This program is in addition to other OSHA Construction Standards requirements identified in the Site Specific Safety and Health Plan for the project.

CONTRACTOR shall:

- 1) Comply with all the regulatory requirements for asbestos monitoring in accordance with 29 CFR 1926.1101 and/or all applicable federal, state and local regulations, and/or the Contract Documents, whichever is more stringent.
- 2) Prior to commencement of work, instruct all workers in the procedures to be used for personnel protection and asbestos removal for this project. Verify workers are knowledgeable in these procedures.
- 3) Acknowledge and agree to sole responsibility for enforcing worker protection requirements at least equal to those specified in this Section.

1.04 REMOVAL OF ASBESTOS-CONTAINING MATERIALS

CONTRACTOR shall remove and dispose of the identified ACM according to Texas asbestos statutes and administrative codes. CONTRACTOR shall define specific ACM handling procedures that maintain all identified materials in the Category II, non-friable classification, in accordance with 40 CFR 61.141, and dispose of all waste in accordance with Texas waste disposal requirements.

1.05 CONTAINMENT – REGULATED AREAS

CONTRACTOR shall demarcate the regulated area in a manner that minimizes the number of personnel within the area and protects personnel outside the area from exposure to airborne asbestos.

CONTRACTOR shall post an approximately 20" x 14" danger sign at each entrance to the Work Area displaying the following general legend with letter sizes and styles of a visibility required by 29 CFR 1926.1101:

DANGER
ASBESTOS
MAY CAUSE CANCER
CAUSES DAMAGE TO LUNGS
AUTHORIZED PERSONNEL ONLY

If the Category II, non-friable ACM will have forces applied to it that would make it friable, then the following shall be included on the sign:

WEAR RESPIRATORY PROTECTION AND PROTECTIVE CLOTHING IN THIS AREA

CONTRACTOR shall completely separate the Work Area from other non-ACM area(s) and establish barrier tape along any publicly accessible surfaces.

1.06 DISPOSAL OF ASBESTOS-CONTAINING MATERIALS

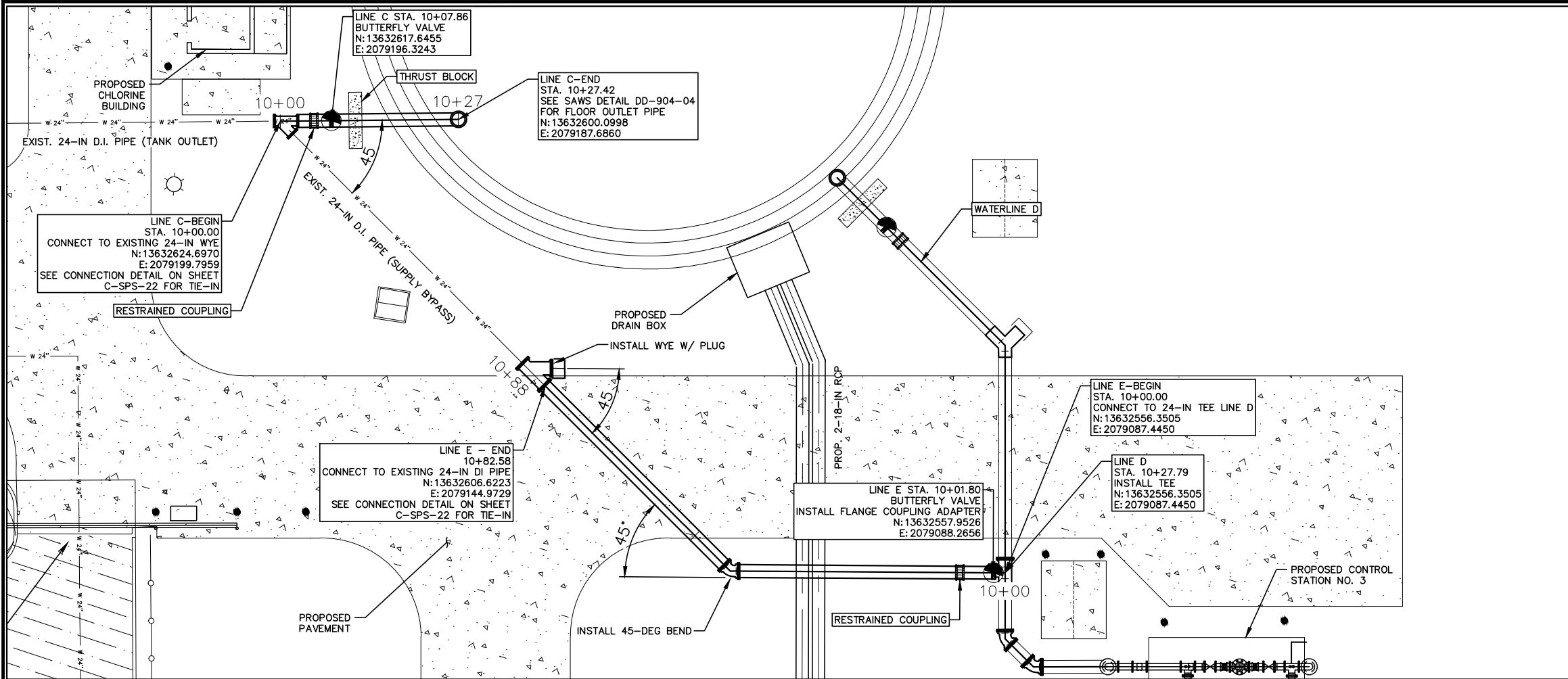
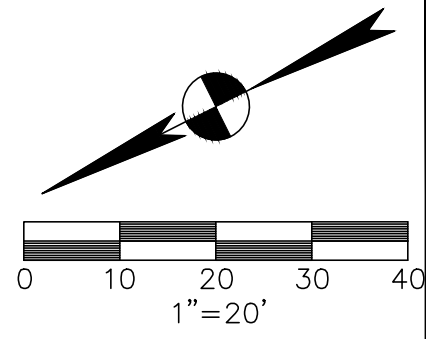
Material shall be removed intact and not made friable. ACM is regulated as a special waste under TCEQ statues and administrative code.

The waste must be disposed of at a permitted landfill facility designed to receive such wastes. CONTRACTOR shall dispose of the all ACM waste following applicable federal and state disposal regulations regulating special waste. CONTRACTOR shall include in their asbestos removal plan the name and asbestos transporter license number plus identify the permitted landfill where the ACM will be taken.

CONTRACTOR shall retain receipts from landfill for disposed materials.

CONTRACTOR shall provide copies of Generator and final disposal manifests to SAWS.

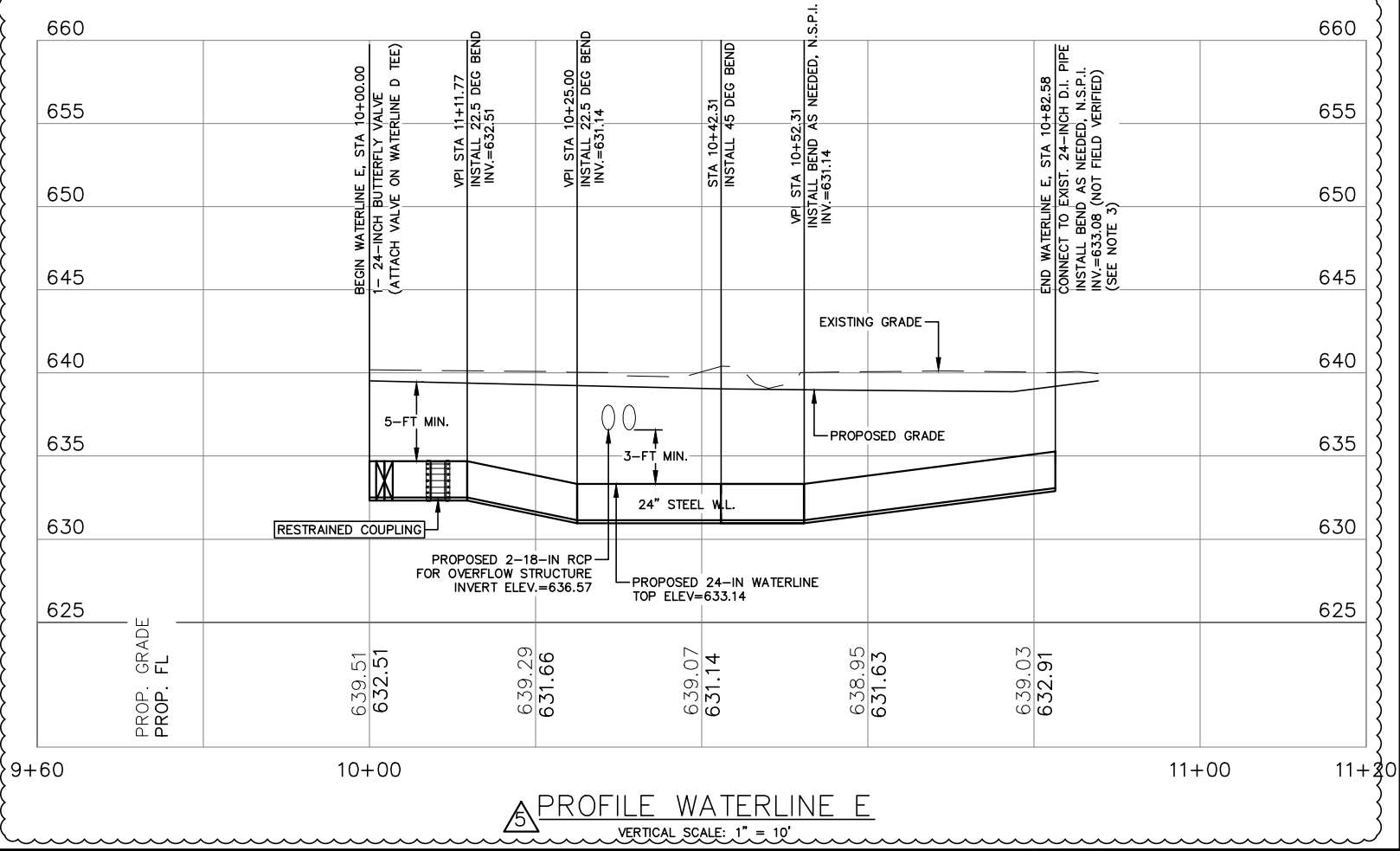
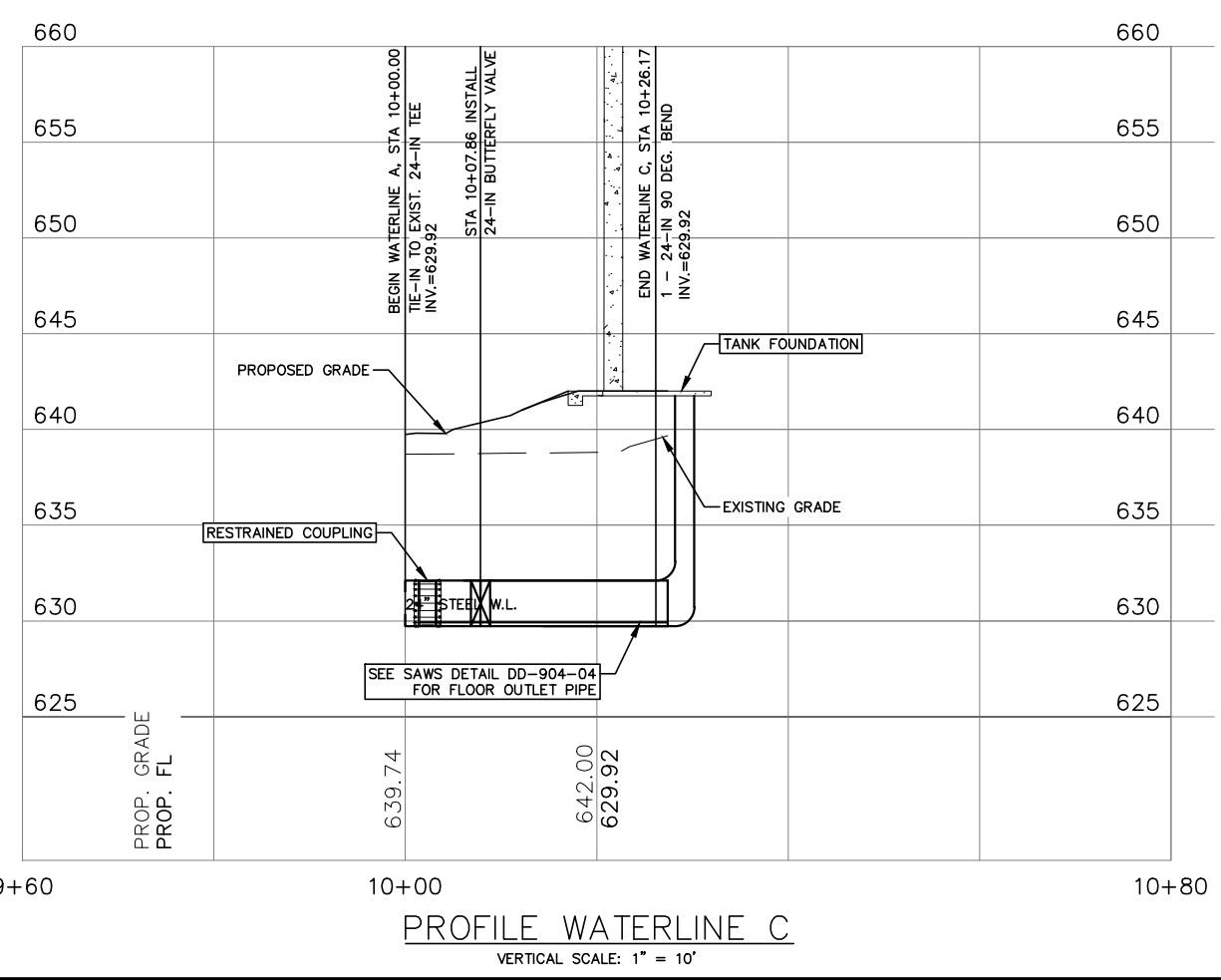
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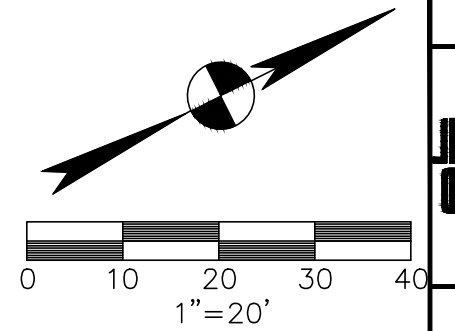
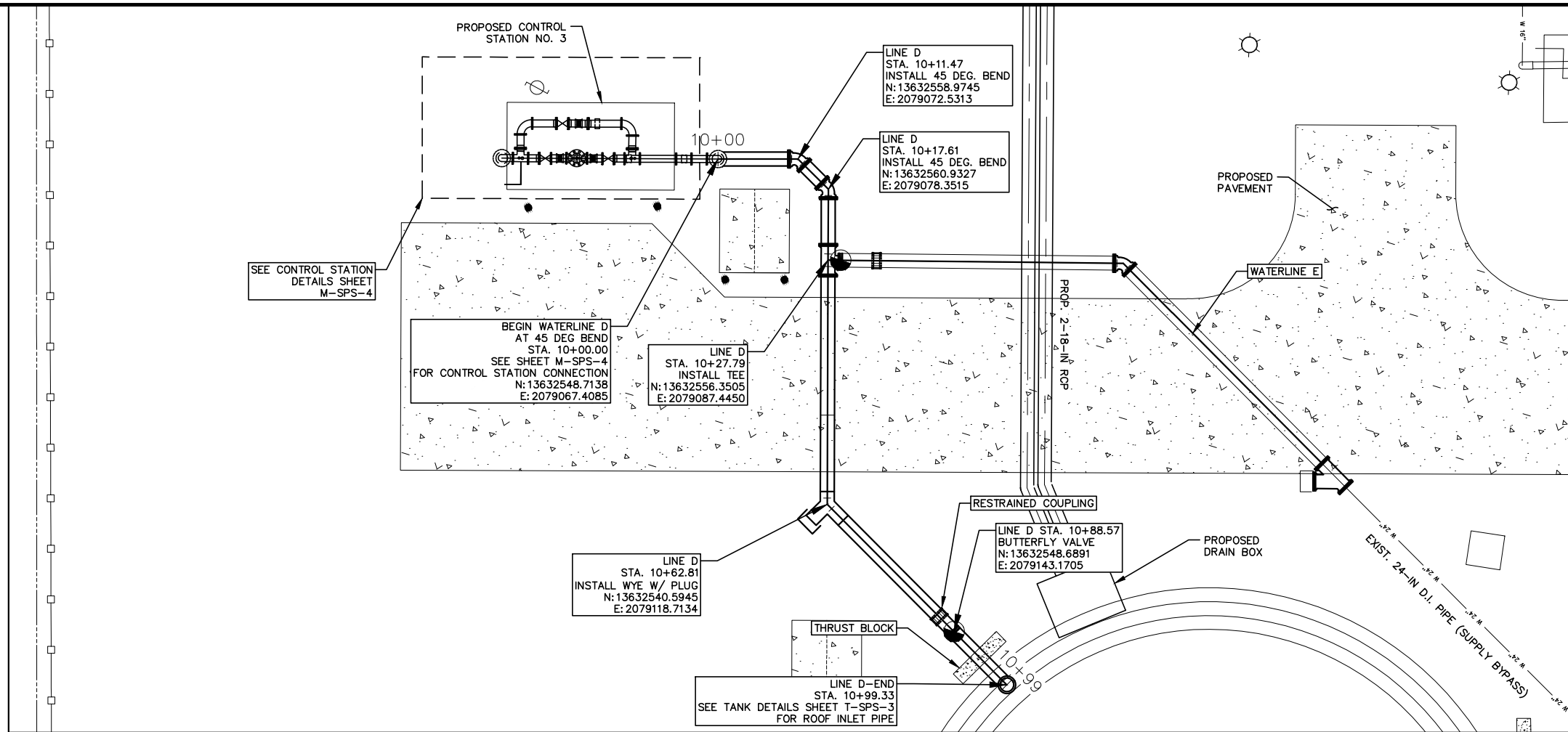
- NOTES:**
- PROPOSED BUTTERFLY VALVES SHALL BE A MINIMUM OF 10- FEET FROM THE GROUND STORAGE FOUNDATION.
 - NO FLANGE COUPLINGS ADAPTERS OR HARNESS RESTRAINED COUPLINGS SHALL BE INSTALLED BETWEEN THE GROUND STORAGE TANK AND ANY BUTTERFLY VALVES.
 - CONTRACTOR TO FIELD VERIFY HORIZONTAL & VERTICAL LOCATIONS OF EXISTING WATER MAIN PRIOR TO CONSTRUCTION. CONTRACTOR SHALL INCLUDE FIELD LOCATES IN SHOP DRAWING SUBMITTAL.



5	ADDENDUM NO. 5 P.E. SEAL DATE	11.04.2015	W.C.C.	11.04.2015					
5	REVISED WATERLINE E		W.C.C.	11.04.2015					
No.	Revision		Approved	Date					



Date: Nov. 04, 2015, 4:41pm User ID: fcantero
 File: G:\103187\00001\10318700001SPS_WPP03.dwg



SAWS JOB NO.
P-14-6101



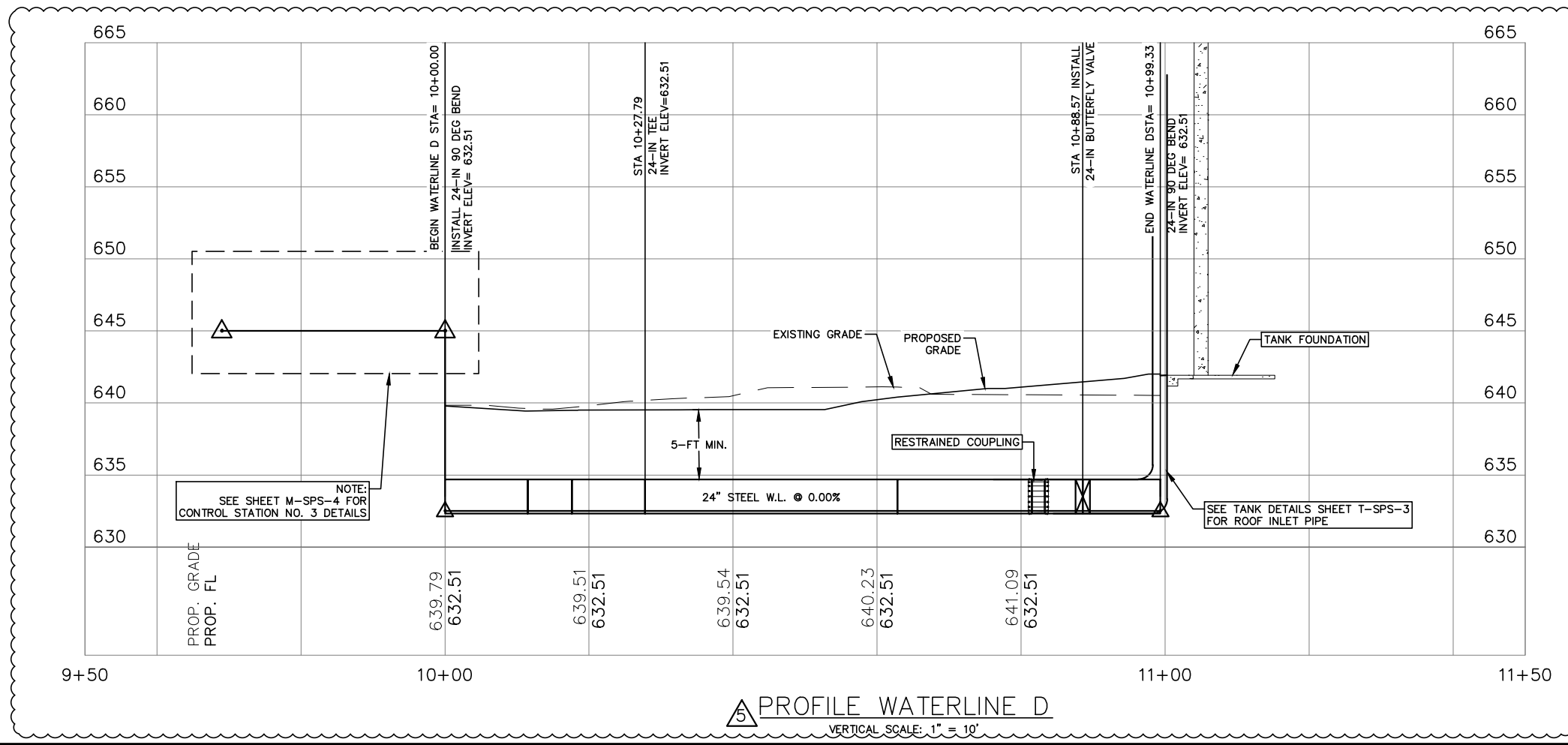
5	ADDENDUM NO. 5 P.E. SEAL DATE	11.04.2015	W.C.C.	
5	REVISED WATERLINE D	11.04.2015	W.C.C.	
No.	Revision		Approved	Date

SAN ANTONIO WATER SYSTEM
 DSP CLAYTON TANK REPLACEMENT PROJECT
 PROPOSED YARD PIPING
 PLAN & PROFILE IV

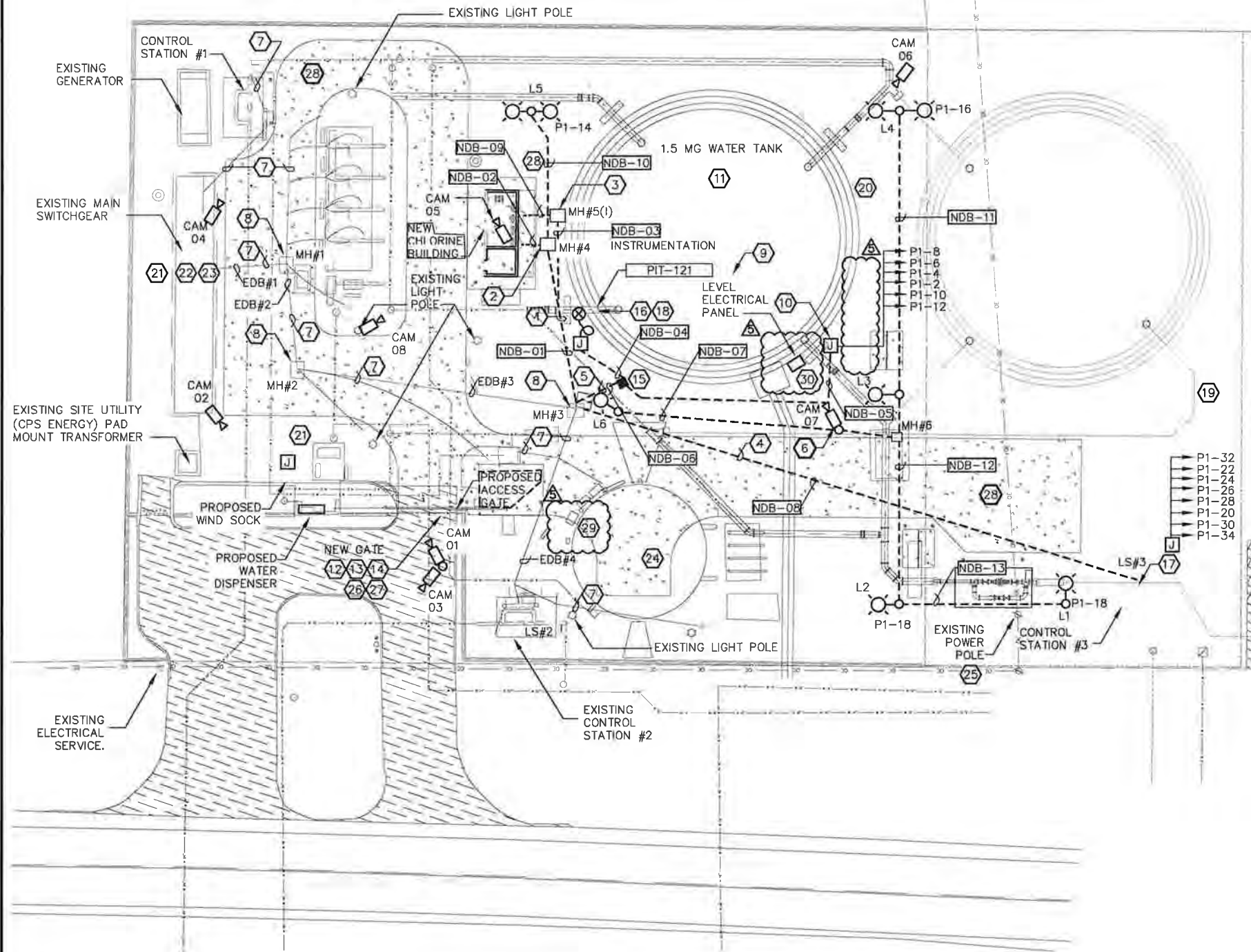
DATE:	OCTOBER 2015
DESIGNED BY:	BAL
DRAWN BY:	FJC
REVIEWED BY:	WCC
GB PRJ.#:	103187-00001

SHEET
C-SPS-18
SHEET 22 OF 99

- NOTES:
- PROPOSED BUTTERFLY VALVES SHALL BE A MINIMUM OF 10- FEET FROM THE GROUND STORAGE FOUNDATION.
 - NO FLANGE COUPLINGS ADAPTERS OR HARNESS RESTRAINED COUPLINGS SHALL BE INSTALLED BETWEEN THE GROUND STORAGE TANK AND ANY BUTTERFLY VALVES.



Date: Nov 04, 2015, 2:15pm User ID: kweldemariam
 File: C:\pwworking\kweldemariam\d0380024\SAWS14037 - SPS-E-3.dwg



ELECTRICAL SITE PLAN-PROPOSED



LEGEND

- NDB-* NEW DUCTBANK-*
- NEW LED LIGHT FIXTURE
- NEW SECURITY CAMERA ON PEDESTAL

NOTES BY SYMBOL

1. NEW DUCT BANK: "NDB-1"
2. NEW ELECTRICAL MANHOLE TO SERVE NEW CHEMICAL BUILDING'S POWER SYSTEM.
3. NEW ELECTRICAL COMMUNICATIONS MANHOLE TO SERVE NEW CHEMICAL BUILDING'S CONTROL SYSTEM.
4. NEW DUCTBANK "NDB-8" TO SERVE GST STATION.
5. NEW DUCTBANK "NDB-6" TO SERVE NEW TANK.
6. ADJUST CAMERA ANGLE AS NEEDED TO COVER THE LADDER ON TANK.
7. EXISTING DUCTBANK TO REMAIN.
8. EXISTING MANHOLE TO REMAIN.
9. COORDINATE MIXER EQUIPMENT CONDUITS ROUTING WITH TANK CONTRACTOR. USE EXTERIOR TANK LADDER TO ROUTE CONDUITS TO THE TOP OF THE TANK. CONTRACTOR SHALL AVOID ANY MOUNTING TO THE STRUCTURE OF THE TANK.
10. PROVIDE MOUNTING STAND FOR J-BOX AND 2 DUPLEX RECEPTACLES, STUB UP SPARE CONDUIT/CONTROL CONDUIT INTO J-BOX. STUB UP SPARE POWER CONDUIT ADJACENT TO RECEPTACLE. DUPLEX RECEPTACLE SHALL BE GFI/WP.
11. PROVIDE A NEW GROUNDING SYSTEM TO THE NEW STORAGE TANK AND STRUCTURE PER SPECIFICATION 16450. PROVIDE A MINIMUM OF SIX GROUNDING TEST WELLS AROUND THE TANK AND SUFFICIENT GROUND RODS AROUND THE TANK TO ACCOMPLISH A RESISTANCE EQUAL OR LESS THAN 1 OHM. CONNECT TO EXISTING GROUNDING SYSTEM. FIELD VERIFY CONDITIONS.
12. PROVIDE A NEW GROUNDING SYSTEM FOR THE NEW GATE AND NEW FENCE PER SPECIFICATION 16450 AND THE NEC.
13. PROVIDE A NEW FIRE DEPARTMENT EMERGENCY ACCESS LOCK BOX AT THE GATE ACCESS STATION. PROVIDE ALL NECESSARY HARDWARE AS REQUIRED. COORDINATE WITH MANUFACTURER.
14. PROVIDE ALL NECESSARY WIRES/CONDUITS AS REQUIRED FOR OBSTRUCTION LOOPS FOR BOTH SIDES OF THE ENTRANCE GATE. COORDINATE WITH SUPPLIER FOR ALL REQUIREMENTS.
15. PROVIDE NEW HAND HOLE PER NEC.
16. PROVIDE ELECTRICAL RACK FOR, HEAT TRACE, LIGHTING, ETC AND J-BOX.
17. PROVIDE ELECTRICAL RACK FOR J-BOX AND POWER FOR 2 DUPLEX RECEPTACLES, BW LEVEL CONTROL, FLOW METER, LIGHTING. REFER TO PANEL SCHEDULE FOR MORE INFORMATION.
18. CONNECT WATER TANK BOOSTER PUMP TO CIRCUIT P-20, WITH A 30AMP 316SS DISCONNECT.
19. PROVIDE GROUNDING TO NEW FENCE AREAS AS TO PROVIDE A COMPLETE & FUNCTIONAL SYSTEM.
20. COORDINATE WITH INSTRUMENTATION THE LOCATION OF FIELD MOUNTED CONTROL CABINET.
21. PROVIDE A 15KVA 480V PRIMARY, 208/120V, 3Ø, SECONDARY MINI POWER CENTER TO FEED THIS AREA. PROVIDE A NEW 40AMP CONNECTION IN THE EXISTING MAIN SWITCHGEAR.
22. ROUTE MAIN FEEDER CONDUIT FOR NEW CHLORINE BUILDING FROM MCC BUS "A" THROUGH EXISTING DUCTBANK #1 TO MANHOLE #1. FROM MANHOLE #1 THROUGH EXISTING DUCTBANK #2 TO MANHOLE #2. FROM MANHOLE #2 THROUGH EXISTING DUCTBANK #3 TO MANHOLE #3. FROM MANHOLE #3 THROUGH (NEW DUCTBANK) NDB-01 TO NEW MANHOLE #4 TO NEW CHLORINE BUILDING. FIELD VERIFY THAT THE EXISTING DUCTBANKS HAVE THE AVAILABLE SPACE FOR THE NEW CONDUIT PRIOR TO ANY WORK. IF THERE ISN'T ENOUGH ROOM IN THE EXISTING DUCTBANK, RUN A NEW DUCTBANK FOR THE MAIN FEEDER PARALLEL TO THE EXISTING DUCTBANK FOLLOWING THE ROUTE MENTIONED ABOVE.
23. NEW SECURITY PANEL FOR INSTRUMENTATION LOCATED HERE. COORDINATE WITH THE EXACT LOCATION OF PANEL PRIOR TO ANY WORK. PROVIDE A 40 AMP 120C SINGLE POLE CONNECTION FROM THE MINI POWER CENTER FOR POWER TO SECURITY PANEL.
24. RELOCATE(2) EXISTING ANTENNA FROM THE EXISTING TANK TO THE NEW WATER TANK. COORDINATE WHICH ANTENNA(S) WILL BE RELOCATED AND EXACT LOCATION ON THE NEW TANK WITH CONSTRUCTION MANAGER AND INSTRUMENTATION PRIOR TO ANY WORK.
25. RELOCATED EXISTING UTILITY POLE. COORDINATE LOCATION WITH OWNER PRIOR TO ANY WORK.
26. PROVIDE A 15KVA, 480V, 3Ø NEMA 4X MINI POWER ZONE TO POWER GATE AND ALL ITEMS ASSOCIATED WITH THE GATE. RUN (3)Ø#6, (1)ØG IN 2" C DIRECT BURIED FROM PANEL H1 TO MINI POWER ZONE LOCATION. COORDINATE LOCATION WITH CONSTRUCTION MANGER PRIOR TO ANY WORK.
27. PROVIDE 2" SPARE EMPTY CONDUIT WITH NYLON PULL STRING FOR CONTROL WIRING TO GATE.
28. COORDINATE LOCATION OF LEAK DETECTORS PRIOR TO ANY WORK.
29. DEMOLISH LEVEL SWITCH LE-100, LE-101, LE-102. RETURN SWITCHES TO THE OWNER. RELOCATE LEVEL CONTROL PANEL AT NEW TANK SHOW ON NOTE 30. DEMOLISH LEVEL CONTROL PANEL POWER CABLES AND CONTROL WIRES.
30. PROVIDE NEW LEVEL SWITCHES AND INSTALL ON TANK. SWITCH SHALL BE B/W CONTROLS SERIES 6012-E554-13E ELECTRODE HOLDER. 6012-E554-13. CHECK MECHANICAL SHEET FOR ELEVATION. RELOCATE LEVEL CONTROL PANEL. PROVIDE POWER CABLES AND CONTROL WIRES CONTROL. WIRES SHALL BE (14)Ø#14 IN 1 1/2" C. PROVIDE ALL LEVEL CONTROL FUNCTION TEST.



SAWS JOB NO. P-14-6101
 garzabury inc.
 822 Leavelle Road, Suite 100
 San Antonio, TX 78210
 TBPE Registration Number: F-16289
 Garza & Y, LLC © Copyright 2015

GENERAL NOTES

1. EXISTING SPARES CONDUITS IN THE EXISTING ELECTRICAL & COMMUNICATIONS DUCT BANKS TO BE USED AND TO BE EXTENDED AS NEEDED.
2. REFER TO EXISTING MECHANICAL AND CIVIL DRAWINGS FOR EXISTING UTILITY CONDITIONS.
3. CONTRACTOR SHALL VISIT THE PROJECT SITE TO VERIFY EXISTING CONDITIONS AND INCLUDE ALL RELATED WORK IN THEIR BID.
4. CONTRACTOR SHALL FIELD VERIFY EXISTING UTILITIES AND UNDERGROUND DUCT BANKS BEFORE COMMENCING FABRICATION OF MATERIALS OR ERECTION OF THE WORK WITHIN 15 FEET OF SUCH DUCTBANKS, UTILITIES, OR PIPES AND IS TO BE RESPONSIBLE FOR ANY DAMAGES TO THE EXISTING CONDITIONS.
5. DUCTBANKS MAY INTERSECT WITH PIPES OR EXISTING DUCTBANKS AT VARIOUS LOCATIONS. CONTRACTOR MAY CHOOSE TO GO UNDER OR OVER AS REQUIRED, WHILE MAINTAINING THE MINIMUM DEPTH REQUIRED PER NEC. A MINIMUM SEPARATION OF 1 FOOT SHALL BE MAINTAINED BETWEEN EACH.
6. CONTRACTOR SHALL UPDATE AS-BUILT DRAWINGS WITH THE EXACT CIRCUIT NUMBERS USED AND PROVIDE TYPED WRITING DIRECTORY CARD IN PANELBOARD REFLECTING THE CORRECT INSTALLATION. ALL SPACE CIRCUIT BREAKERS SHALL BE TURNED TO THE "OFF" POSITION.
7. ALL EXTERIOR RECEPTACLES SHALL BE GFI/UP RATED.
8. COORDINATE DEPTH AND EXACT LOCATION OF NEW DUCT BANKS WITH OTHER TRADES PRIOR TO ANY WORK. IF A CONFLICT OCCURS PLACE DUCT BANK TAPING/MARKING POINT A MINIMUM OF 36" BELOW THE LOWEST PIPE.
9. ALL ELECTRICAL INSTALLATIONS TO COMPLY WITH NATIONAL AND LOCAL CODES AND TO BE INSTALLED IN A FIRST CLASS WORKMANLIKE MANNER.

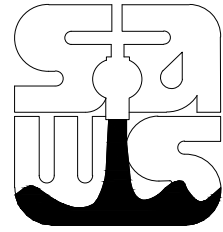


ADDENDUM #5	ADDENDUM #4	Revision	Approved	Date
			JLW	11/2/15
			JLW	10/30/15

SAN ANTONIO WATER SYSTEM
 DSP CLAYTON TANK REPLACEMENT PROJECT
 ELECTRICAL SITE PLAN-PROPOSED

DATE:	NOVEMBER 2015
DESIGNED BY:	KW
DRAWN BY:	KYW
REVIEWED BY:	JLW
GB PRJ#:	103817-00001

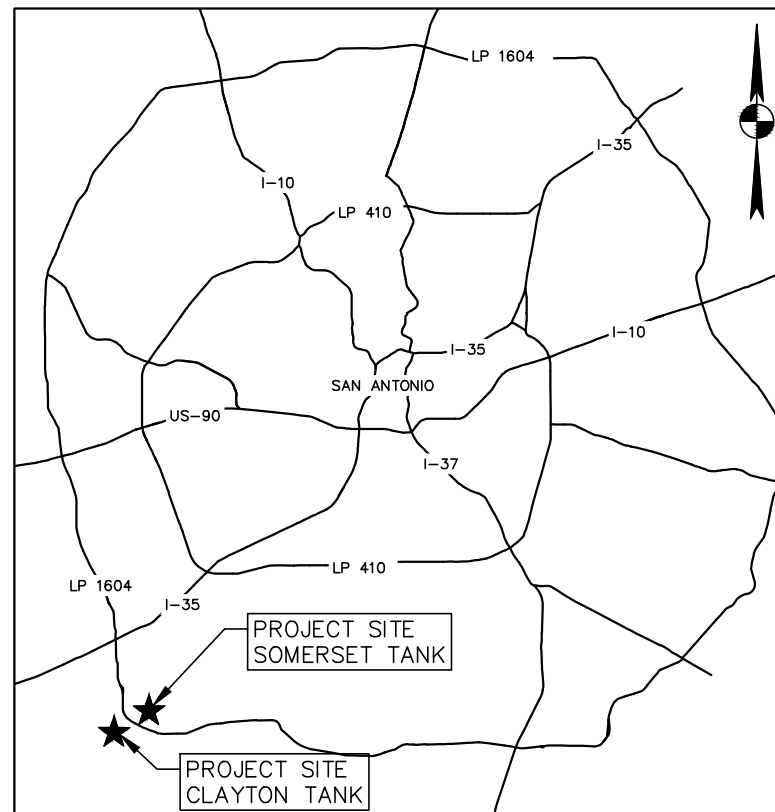
John Lee West
 11/04/15
 JOHN LEE WEST
 92480
 LICENSED PROFESSIONAL ENGINEER



San Antonio Water System

SAWS JOB NO.: P-14-6101

DSP CLAYTON TANK REPLACEMENT PROJECT



LOCATION MAP
N.T.S.

OCTOBER 2015

PREPARED BY



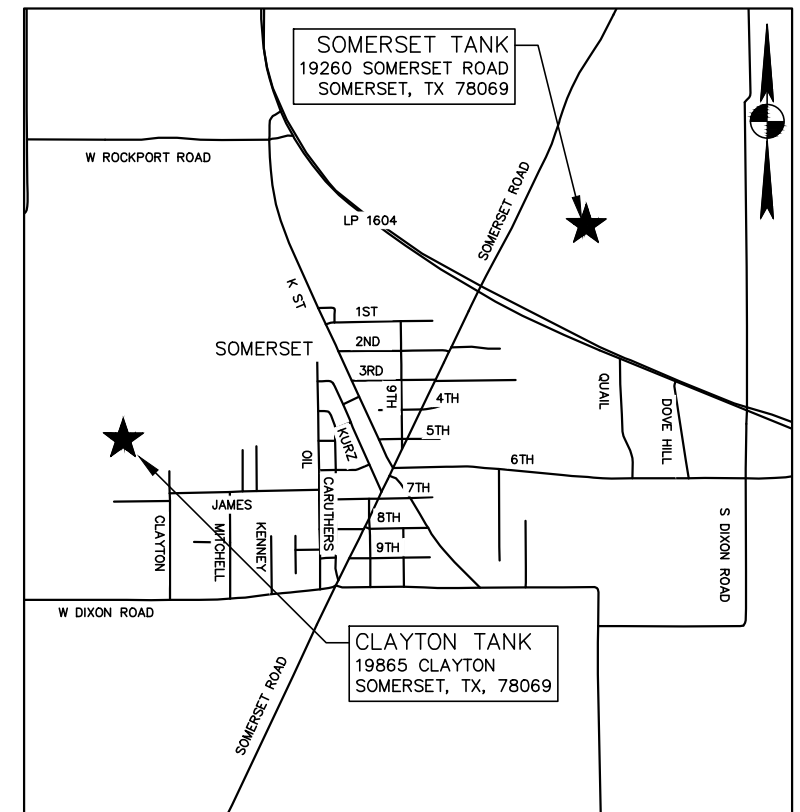
GARZABURY, LLC.
TBPE REGISTRATION NO.: F-14629
922 ISOM ROAD, SUITE 100
SAN ANTONIO, TEXAS 78216
TEL. (210) 526-0286

IN ASSOCIATION WITH

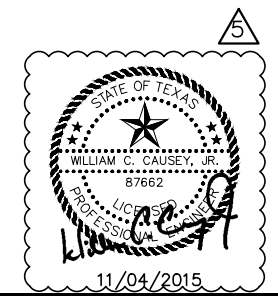
CP&Y, INC
TBPE REGISTRATION NO.: F-1741
300 EAST SONTERRA BLVD. SUITE 1250
SAN ANTONIO, TEXAS 78258
TEL. (210) 494-8004

RABA KISTNER CONSULTANTS, INC.
TBPE REGISTRATION NO.: F-3257
12821 W. GOLDEN LANE
SAN ANTONIO, TEXAS 78249
TEL. (210) 699-9090

BURY, INC.
TBPE REGISTRATION NO.: F-1048
922 ISOM ROAD SUITE 100
SAN ANTONIO, TEXAS 78216
TEL. (210) 525-9090



VICINITY MAP
N.T.S.



SHEET INDEX

SEQ #	SHEET #	SHEET TITLE
GENERAL		
G-1	1	COVERSHEET, VICINITY MAP AND LOCATION MAP
G-2	2	SHEET INDEX
G-3	3	GENERAL NOTES
G-4	4	ABBREVIATIONS, DRAFTING SYMBOLS, LEGEND, & FLUID CODES
SOMERSET FACILITY		
CIVIL		
C-SPS-1	5	EXISTING SITE PLAN
C-SPS-2	6	PROPOSED SITE PLAN
C-SPS-3	7	HORIZONTAL & VERTICAL CONTROL PLAN
C-SPS-4	8	STORM WATER POLLUTION PREVENTION PLAN
C-SPS-5	9	RESIDENTIAL UTILITY RELOCATION PLAN
C-SPS-6	10	OVERALL DEMOLITION PLAN & EXISTING YARD PIPING
C-SPS-7	11	DEMOLITION DETAILS
C-SPS-8	12	CONSTRUCTION SEQUENCE PHASE I
C-SPS-9	13	CONSTRUCTION SEQUENCE PHASE II
C-SPS-10	14	CONSTRUCTION SEQUENCE PHASE III
C-SPS-11	15	CONSTRUCTION SEQUENCE PHASE IV
C-SPS-12	16	CONSTRUCTION SEQUENCE PHASE V
C-SPS-13	17	GRADING PLAN & PAVEMENT CONTROL JOINT LAYOUT
C-SPS-14	18	PROPOSED YARD PIPING PLAN
C-SPS-15	19	PROPOSED YARD PIPING PLAN & PROFILE I
C-SPS-16	20	PROPOSED YARD PIPING PLAN & PROFILE II
C-SPS-17	21	PROPOSED YARD PIPING PLAN & PROFILE III
C-SPS-18	22	PROPOSED YARD PIPING PLAN & PROFILE IV
C-SPS-19	23	CHEMICAL YARD PIPING PLAN
C-SPS-20	24	CHEMICAL YARD PIPING SHEET INSET
C-SPS-21	25	PAVEMENT & FENCING PLAN
C-SPS-22	26	DRAINAGE STRUCTURE PIPE PLAN & PROFILE
C-SPS-23	27	WATERLINE DETAILS I
C-SPS-24	28	WATERLINE DETAILS II
GROUND STORAGE TANK (GST)		
T-SPS-1	29	GST PLAN, ELEVATION, AND TANK DETAIL
T-SPS-2	30	GST DETAILS I
T-SPS-3	31	GST DETAILS II
T-SPS-4	32	GST DETAILS III
T-SPS-5	33	GST DETAILS IV
STRUCTURAL		
S-SPS-1	34	GENERAL STRUCTURAL NOTES
S-SPS-2	35	GENERAL STRUCTURAL NOTES
S-SPS-3	36	CONTROL STATION
S-SPS-4	37	CHLORINE BUILDING FOUNDATION
S-SPS-5	38	CHLORINE BUILDING DETAILS
S-SPS-6	39	CHLORINE BUILDING ROOF
S-SPS-7	40	WATER DISPENSING STATION
S-SPS-8	41	STRUCTURAL CONTROL PANEL SHELTER
S-SPS-9	42	STRUCTURAL CONTROL PANEL SHELTER
S-SPS-10	43	WATER DISPENSER PLANS, SECTIONS, & ELEVATIONS
S-SPS-11	44	WATER DISPENSER DETAILS

SHEET INDEX

SEQ #	SHEET #	SHEET TITLE
PROCESS/MECHANICAL		
M-SPS-1	45	MECHANICAL SYMBOLS
M-SPS-2	46	EXISTING SYSTEM PMID
M-SPS-3	47	PROPOSED SYSTEM PMID
M-SPS-4	48	CONTROL STATION NO. 3 PLAN & PROFILE
M-SPS-5	49	EXISTING CHLORINE SYSTEM PMID
M-SPS-6	50	PROPOSED CHLORINE SYSTEM PMID
M-SPS-7	51	PROPOSED CHLORINE BUILDING PLAN
M-SPS-8	52	PROPOSED CHLORINE BUILDING SECTIONS
M-SPS-9	53	STANDARD MECHANICAL DETAILS I
M-SPS-10	54	STANDARD MECHANICAL DETAILS II
HVAC		
H-SPS-1	55	HVAC EQUIPMENT LAYOUT
H-SPS-2	56	HVAC EQUIPMENT TABLE
ELECTRICAL/INSTRUMENTATION		
E-SPS-1	57	ELECTRICAL DEMOLITION
E-SPS-2	58	ELECTRICAL ABBREVIATIONS
E-SPS-3	59	ELECTRICAL SYMBOLS
E-SPS-4	60	ELECTRICAL SITE PLAN - PROPOSED
E-SPS-5	61	CHEMICAL BUILDING GROUNDING PLAN
E-SPS-6	62	CHEMICAL BUILDING POWER PLAN
E-SPS-7	63	CHEMICAL BUILDING CONTROL PLAN
E-SPS-8	64	NEW CHEMICAL BUILDING LIGHTING AND RECEPTACLE PLAN
E-SPS-9	65	EXISTING ELECTRICAL ONE-LINE DIAGRAM
E-SPS-10	66	PANELBOARD AND LIGHTING FIXTURE SCHEDULE
E-SPS-11	67	CONTROL SCHEMATICS I
E-SPS-12	68	CONTROL SCHEMATICS II
E-SPS-13	69	EXISTING DUCT BANK DETAILS I
E-SPS-14	70	EXISTING/NEW DUCT BANK DETAILS II
E-SPS-15	71	ELECTRICAL DETAILS I
E-SPS-16	72	ELECTRICAL DETAILS II
E-SPS-17	73	ELECTRICAL DETAILS III
E-SPS-18	74	ELECTRICAL DETAILS IV
E-SPS-19	75	ELECTRICAL DETAILS V
I-SPS-1	76	INSTRUMENTATION SYMBOLS AND LEGENDS
I-SPS-2	77	PLC NETWORK PLAN
I-SPS-3	78	INSTRUMENTATION LOOP DIAGRAM I
I-SPS-4	79	INSTRUMENTATION LOOP DIAGRAM II
I-SPS-5	80	PLC PANEL
I-SPS-6	81	LEAK DETECTION SYSTEM
I-SPS-7	82	SECURITY SYSTEM I
I-SPS-8	83	SECURITY SYSTEM II
I-SPS-9	84	INSTRUMENTATION DETAILS I
I-SPS-10	85	INSTRUMENTATION DETAILS II
SOMERSET FACILITY STANDARD DETAILS		
D-SPS-1	86	SOMERSET MISCELLANEOUS DETAILS
D-SPS-2	87	TRAFFIC CONTROL PLAN TCP (1-1)-12
D-SPS-3	88	SAFETY END TREATMENT SETB-CD (1 OF 2)
D-SPS-4	89	SAFETY END TREATMENT SETB-CD (2 OF 2)

SHEET INDEX

SEQ #	SHEET #	SHEET TITLE
CLAYTON FACILITY		
CIVIL		
C-CPS-1	90	EXISTING SITE PLAN
C-CPS-2	91	PROPOSED SITE PLAN
C-CPS-3	92	HORIZONTAL & VERTICAL CONTROL PLAN
C-CPS-4	93	STORM WATER POLLUTION PREVENTION PLAN
C-CPS-5	94	OVERALL DEMOLITION PLAN & EXISTING YARD PIPING
C-CPS-6	95	DEMOLITION DETAILS I
C-CPS-7	96	CONSTRUCTION SEQUENCE
C-CPS-8	97	GRADING LAYOUT
STANDARD DETAILS		
SD-1	98	EROSION CONTROL NOTES & DETAILS
SD-2	99	MISCELLANEOUS DETAILS

SHEET NOMENCLATURE

- X-XXX-XX
DISCIPLINE - PUMP STATION - NUMBER
- DISCIPLINE
 G - GENERAL
 C - CIVIL
 T - TANK
 S - STRUCTURAL
 M - MECHANICAL
 H - HVAC
 E - ELECTRICAL/INSTRUMENTATION
 SD - STANDARD DETAILS
- PUMP STATION
 SPS - SOMERSET PUMP STATION
 CPS - CLAYTON PUMP STATION

SAWS JOB NO.
P-14-6101

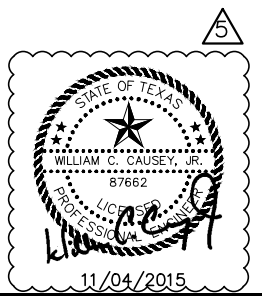


5	ADDENDUM NO.	5	P.E. SEAL DATE	11.04.2015
	W.C.C.		Approved	Date
	No.		Revision	

SAN ANTONIO WATER SYSTEM
DSP CLAYTON TANK REPLACEMENT PROJECT

SHEET INDEX

DATE: OCTOBER 2015	DESIGNED BY: BAL	DRAWN BY: FJC	REVIEWED BY: WCC	GB PRJ.#: 103187-00001
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GENERAL NOTES

- 1 THE WORK UNDER THIS CONTRACT SHALL BE PERFORMED IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS AND ALL APPLICABLE LOCAL, STATE, AND FEDERAL LAWS AND REGULATIONS.
- 2 TOLERANCES:
PIPELINE AND DUCT BANKS ALIGNMENT: ±1.0'/100'
PIPELINE AND DUCT BANKS GRADE: ±3"/100'
- 3 OTHER CONTRACTORS MAY BE WORKING ON THE SITE IN CONJUNCTION WITH OTHER CONCURRENT CONTRACTS. CONTRACTOR SHALL COORDINATE ACTIVITIES WITH OTHER CONTRACTORS ON SITE, THE OWNER AND THE OWNER'S CONSTRUCTION REPRESENTATIVE.
- 4 EXCAVATION BY "BLASTING," UNDER ANY CIRCUMSTANCES, IS NOT ALLOWED ON THIS PROJECT
- 5 GROUNDWATER AT THE PROPOSED SITE WILL VARY DEPENDING ON SEASONAL VARIATIONS AND SUBSURFACE CONDITIONS. GROUNDWATER LEVELS PROVIDED IN THE BORING LOGS AND SHOWN ON THE DRAWINGS ARE ONLY AN INDICATION OF GROUNDWATER LEVELS AT THE TIME OF DRILLING THE BORINGS. THE CONTRACTOR IS RESPONSIBLE FOR THE ADDITIONAL WORK RESULTING FROM ENCOUNTERING GROUNDWATER DURING CONSTRUCTION AT NO ADDITIONAL COST TO OWNER.
- 6 EXISTING VALVES AND PIPELINES MAY LEAK IN CLOSED POSITION. CONTRACTOR SHALL PROVIDE WHATEVER MEANS AND EQUIPMENT NECESSARY TO CONTROL WATER DURING CONSTRUCTION AT NO ADDITIONAL COST TO OWNER.
- 7 THE LOCATIONS AND DEPTHS OF ALL EXISTING UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE APPROXIMATE, BASED ON AVAILABLE INFORMATION, AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE ENGINEER, THE OWNER, OR THE OWNER'S REPRESENTATIVE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE SIZE AND DEPTH OF EXISTING UTILITIES, AND DRAINAGE STRUCTURES AT LEAST 48 HOURS PRIOR TO SUBMITTING SHOP DRAWINGS AND COMMENCING FABRICATION OF MATERIALS, WHETHER SHOWN ON PLAN OR NOT, AND TO PROTECT THE SAME DURING CONSTRUCTION. FINDINGS SHALL BE DOCUMENTED BY CONTRACTOR IN AS-BUILTS. THE CONTRACTOR SHALL NOTIFY ENGINEER AND SAWS INSPECTOR OF ANY CONFLICTS WITH PROPOSED WORK. THE CONTRACTOR AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR BY FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
- 8 CONTRACTOR SHALL NOTIFY, AT LEAST 48 HOURS PRIOR TO STARTING CONSTRUCTION, THE FOLLOWING:

SAWS (WATER & SEWER):	210-704-7297
CITY OF PUBLIC SERVICE (GAS & ELECTRIC):	800-545-6005
TEXAS DEPARTMENT OF TRANSPORTATION:	210-669-2649
CITY OF SOMERSET:	830-701-4100
TEXAS STATEWIDE ONE CALL LOCATOR:	811
- 9 CONTRACTOR MUST MAINTAIN CITY PUBLIC SERVICE'S ACCESS TO CITY PUBLIC SERVICE TRANSFORMERS AT ALL TIMES. THE CONTRACTOR MUST PROTECT AND WORK AROUND ANY CITY PUBLIC SERVICE TRANSFORMERS THAT ARE IN THE PROTECTED AREA.
- 10 CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS, ANY AVAILABLE GEOTECHNICAL INFORMATION, AND THE ANTICIPATED INSTALLATION SITE(S) WITHIN THE PROJECT WORK AREA IN ORDER TO DEVELOP THE CONTRACTOR'S PLANS TO IMPLEMENT THE PROJECT SPECIFIC TRENCH SAFETY PLAN DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S PLANS SHALL PROVIDE FOR ADEQUATE TRENCH SAFETY SYSTEMS THAT COMPLY WITH, AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL DEVELOP AND IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION. THE SAFETY PROGRAM SHALL BE SUBMITTED FOR RECORD TO SAWS AND NO CONSTRUCTION OR MOBILIZATION SHALL OCCUR PRIOR TO ACCEPTANCE OF THE SAFETY PROGRAM.
- 11 CONTRACTOR SHALL PROVIDE SITE SECURITY AND YARD MAINTENANCE IN ACCORDANCE WITH SPECIFICATION SECTION 01110.
- 12 IN THE EVENT THAT SUBTERRANEAN VOIDS OR KARST FEATURES ARE ENCOUNTERED, THE CONTRACTOR SHALL STOP WORK IMMEDIATELY AND NOTIFY THE OWNER.
- 13 THE CONTRACTOR SHALL PROVIDE A COURSE OF ACTION PLAN FOR THE OCCURRENCE OF AN ACCIDENTAL SPILL OF FUEL OR OTHER SUBSTANCE DURING CONSTRUCTION. THE ACTION PLAN SHALL BE SUBMITTED FOR REVIEW TO SAWS. NO CONSTRUCTION OR MOBILIZATION SHALL OCCUR PRIOR TO ACCEPTANCE OF THE ACTION PLAN.
- 14 CONTRACTOR SHALL VIDEO TAPE AND PHOTOGRAPH ALL EXISTING PLANT ROADS, FENCING, WELLS, PUMPS, STORAGE TANKS, CHEMICAL BUILDINGS, AND AREAS SURROUNDING THE PROPOSED WORK PRIOR TO MOBILIZATION TO DOCUMENT THE CONDITION OF THESE ROADS AND FACILITIES. CONTRACTOR SHALL SUBMIT VIDEO TAPE AND PHOTOGRAPHS PRIOR TO MOBILIZATION.
- 15 THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING TO ITS ORIGINAL OR BETTER CONDITION FROM DAMAGES DONE TO EXISTING FENCES, CURBS, STREETS, DRIVEWAYS, SIDEWALKS, LANDSCAPING AND STRUCTURES.
- 16 NO EXTRA PAY ITEM WILL BE ALLOWED FOR WORK CALLED FOR ON THE PLANS BUT NOT INCLUDED ON THE BID SCHEDULE. THIS INCIDENTAL WORK WILL BE REQUIRED AND SHALL BE INCLUDED IN THE PAY ITEM TO WHICH IT RELATES.
- 17 THE CONTRACTOR IS RESPONSIBLE FOR ACQUIRING TEMPORARY EASEMENT, IF ANY ADDITIONAL WORK AREA IS NEEDED, OUTSIDE OF THE SAWS EASEMENT OR ROW.
- 18 ALL MATERIAL AND CONSTRUCTION PROCEDURES WITHIN THE SCOPE OF THIS CONTRACT SHALL BE APPROVED BY THE SAWS AND COMPLY WITH THE PROJECT PLANS AND SPECIFICATIONS UNDER THIS CONTRACT AND THE FOLLOWING AS APPLICABLE:
 A. CURRENT TEXAS COMMISSION ON ENVIRONMENTAL QUALITY DESIGN CRITERIA
 B. CURRENT TXDOT "STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MAINTENANCE OF HIGHWAYS, STREETS, AND BRIDGES."
 C. CURRENT SAN ANTONIO WATER SYSTEM STANDARD SPECIFICATIONS FOR CONSTRUCTION.
 D. THE LAWS OF THE STATE OF TEXAS, INTERNATIONAL FIRE CODE, INTERNATIONAL BUILDING CODE, AND OSHA STANDARDS
 E. IN CASE OF CONFLICTS AMONG ABOVE LISTED SPECIFICATIONS AND STANDARDS, THE STRICTEST REQUIREMENTS SHALL GOVERN.

- 19 THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING, SUPPORTING, AND PROTECTING THE INTEGRITY OF UNDERGROUND UTILITIES, THRUST BLOCKING AND POWER POLES DURING CONSTRUCTION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO EXCAVATE OVER, UNDER AND AROUND SUCH UTILITY AND IF NECESSARY, PROVIDE A TEMPORARY BRIDGING/BRACING DURING CONSTRUCTION SO AS TO MAINTAIN CONTINUOUS SERVICE WHILE CONSTRUCTING THE PROPOSED SAWS FACILITIES. IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO BACKFILL AROUND THE UTILITY AND TO COMPLETE CONSTRUCTION IN A MANNER SUCH AS TO LEAVE THE UTILITY SECURELY BEDDED IN ITS POSITION. ALL THIS WORK SHALL BE AT NO ADDITIONAL COST TO SAWS.
- 20 THE CONTRACTOR SHALL ALSO COMPLY WITH THE PROVISIONS IN ITEM 550, TRENCH EXCAVATION SAFETY PROTECTION, OF THE CURRENT SAN ANTONIO WATER SYSTEM SPECIFICATIONS FOR WATER AND SANITARY SEWER CONSTRUCTION
- 21 WHERE OVERHEAD POWER LINES ARE IN CLOSE PROXIMITY TO THE PROPOSED WORK, THE CONTRACTOR SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS ESTABLISHED BY CHAPTER 752, TEXAS HEALTH & SAFETY CODE.
- 22 ALL UNPAVED DISTURBED AREAS SHALL BE SEEDED AS INDICATED IN THE SPECIFICATIONS. ALL DISTURBED PAVED AREAS SHALL BE REPAVED AS INDICATED AND AS SPECIFIED. ALL DISTURBED SIDEWALKS SHALL BE REPLACED
- 23 CONTRACTOR TO DISINFECT NEW WATER MAINS PRIOR TO PLACING IN SERVICE
- 24 PROJECT WORK AREAS CONTAIN LEAD AND ASBESTOS. PRIOR TO CONSTRUCTION, CONTRACTOR SHALL IDENTIFY LOCATIONS CONTAINING LEAD AND ASBESTOS AND DEVELOP A LEAD AND ASBESTOS REMEDIATION PLAN IN ACCORDANCE WITH SPECIFICATION SECTION 02503 AND 02504. CONTRACTOR SHALL USE A LICENSED SUBCONTRACTOR QUALIFIED FOR THE REMOVAL OF HAZARDOUS MATERIALS TO A LEGAL DISPOSAL SITE.
- 25 THE WORDS DEMOLITION, DEMOLISH, AND REMOVE IN THIS CONTRACT REFER TO ITEMS THAT WILL BE REMOVED AND PROPERLY DISPOSED OF FROM THE CONSTRUCTION SITE. NO ITEMS MARKED DEMOLITION OR DEMOLISH SHALL BE GROUND, CRUSHED, OR PULVERIZED. ITEMS REQUIRED TO BE DEMOLISHED OR REMOVED TO COMPLETE REQUIREMENTS OF THIS CONTRACT SHALL BE COORDINATED WITH THE OWNER FOR EQUIPMENT TO BE SALVAGED. ITEMS AGREED TO BE DEMOLISHED OR REMOVED SHALL BE REMOVED AND DISPOSED OF OFF SITE.
- 26 THE DETAILS DESIGNATED AS "TYPICAL DETAILS" OR "STANDARD DETAILS" APPLY GENERALLY TO THE DRAWINGS IN ALL AREAS WHERE CONDITIONS ARE SIMILAR TO THOSE DESCRIBED IN THE DETAILS.
- 27 ALL VALVES INSTALLED INSIDE THE PUMP STATION FACILITY SHALL OPEN LEFT (COUNTER CLOCKWISE).
- 28 CONTRACTOR SHALL CONTACT SAWS (STEVE CRAIG - 210-233-3640) BEFORE CUTTING ANY TREE.
- 29 THE CONTRACTOR SHALL FIELD VERIFY THE LOCATIONS, SIZE, DEPTHS, AND MATERIALS OF ALL EXISTING UNDERGROUND UTILITIES AND DRAINAGE STRUCTURES AT LEAST 48 HOURS PRIOR TO SUBMITTING SHOP DRAWINGS AND COMMENCING FABRICATION OF MATERIALS. THE FIELD VERIFICATION WILL BE PERFORMED AT NO COST TO THE OWNER. WHETHER SHOWN ON PLAN OR NOT, FINDINGS SHALL BE DOCUMENTED BY THE CONTRACTOR IN RECORD DRAWINGS. THE CONTRACTOR SHALL NOTIFY THE ENGINEER AND SAWS INSPECTOR OF ANY CONFLICTS WITH PROPOSED WORK. THE CONTRACTOR AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

SAWS JOB NO.
P-14-6101



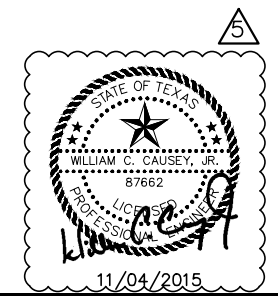
5	ADDENDUM NO. 5	P.E. SEAL DATE	W.C.C.	11.04.2015
No.	Revision	Approved	Date	

SAN ANTONIO WATER SYSTEM
DSP CLAYTON TANK REPLACEMENT PROJECT

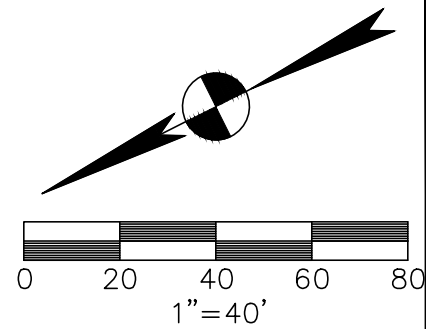
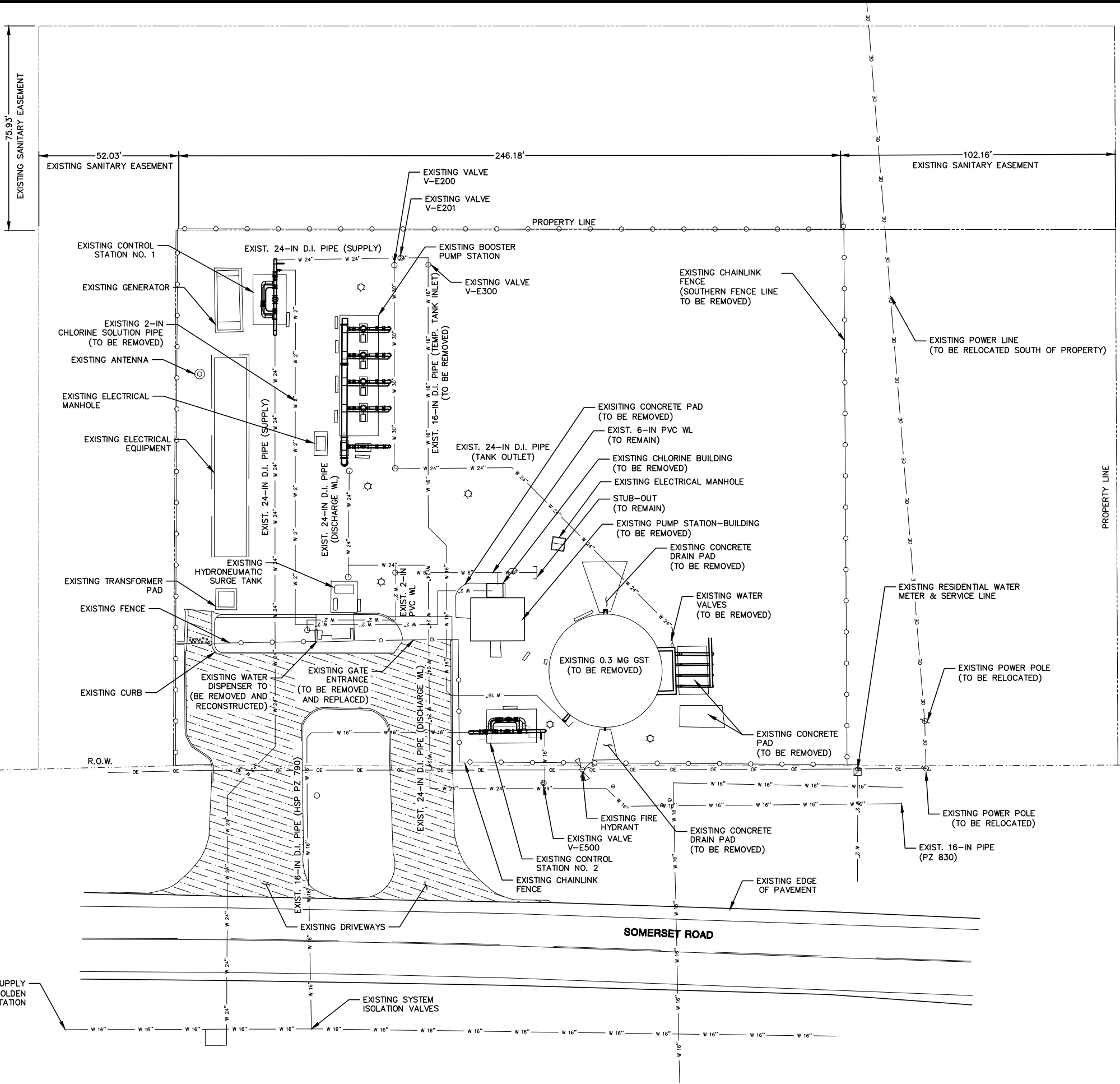
GENERAL NOTES

DATE: OCTOBER 2015	DESIGNED BY: BAL	DRAWN BY: FJC	REVIEWED BY: WCC	GB PRJ.#: 103187-00001
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SHEET
G-3
SHEET 3 OF 99



Date: Nov 04, 2015, 11:29am User ID: fcontero
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- LEGEND**
- RIGHT-OF-WAY
 - EXISTING PROPERTY LINE
 - PROPOSED PROPERTY LINE
 - EXISTING CHAINLINK FENCE
 - EXISTING CHAINLINK FENCE
 - UT BURIED TELEPHONE
 - OE OVERHEAD ELECTRIC
 - ⊙ EXISTING LIGHT POLE
 - ▨ EXISTING CONCRETE PAVEMENT

SAWS JOB NO.
P-14-6101



ADDENDUM NO.	P.E. SEAL DATE	W.C.C.	11.04.2015	Date
5				

SAN ANTONIO WATER SYSTEM
 DSP CLAYTON TANK REPLACEMENT PROJECT
 EXISTING SITE PLAN

DATE: OCTOBER 2015	DESIGNED BY: BAL	DRAWN BY: FJC	REVIEWED BY: WCC	GB PRJ.#: 103187-00001
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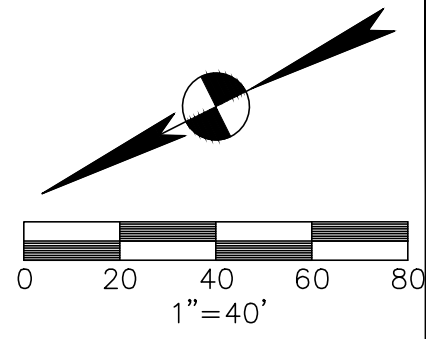


SHEET
C-SPS-1
SHEET 5 OF 99

5	ADDENDUM NO.	5	P.E. SEAL DATE	W.C.C.	11.04.2015	Date

SAN ANTONIO WATER SYSTEM
 DSP CLAYTON TANK REPLACEMENT PROJECT
 PROPOSED SITE PLAN

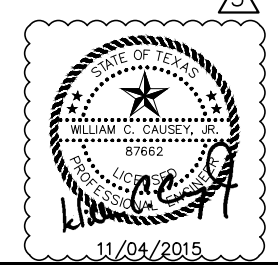
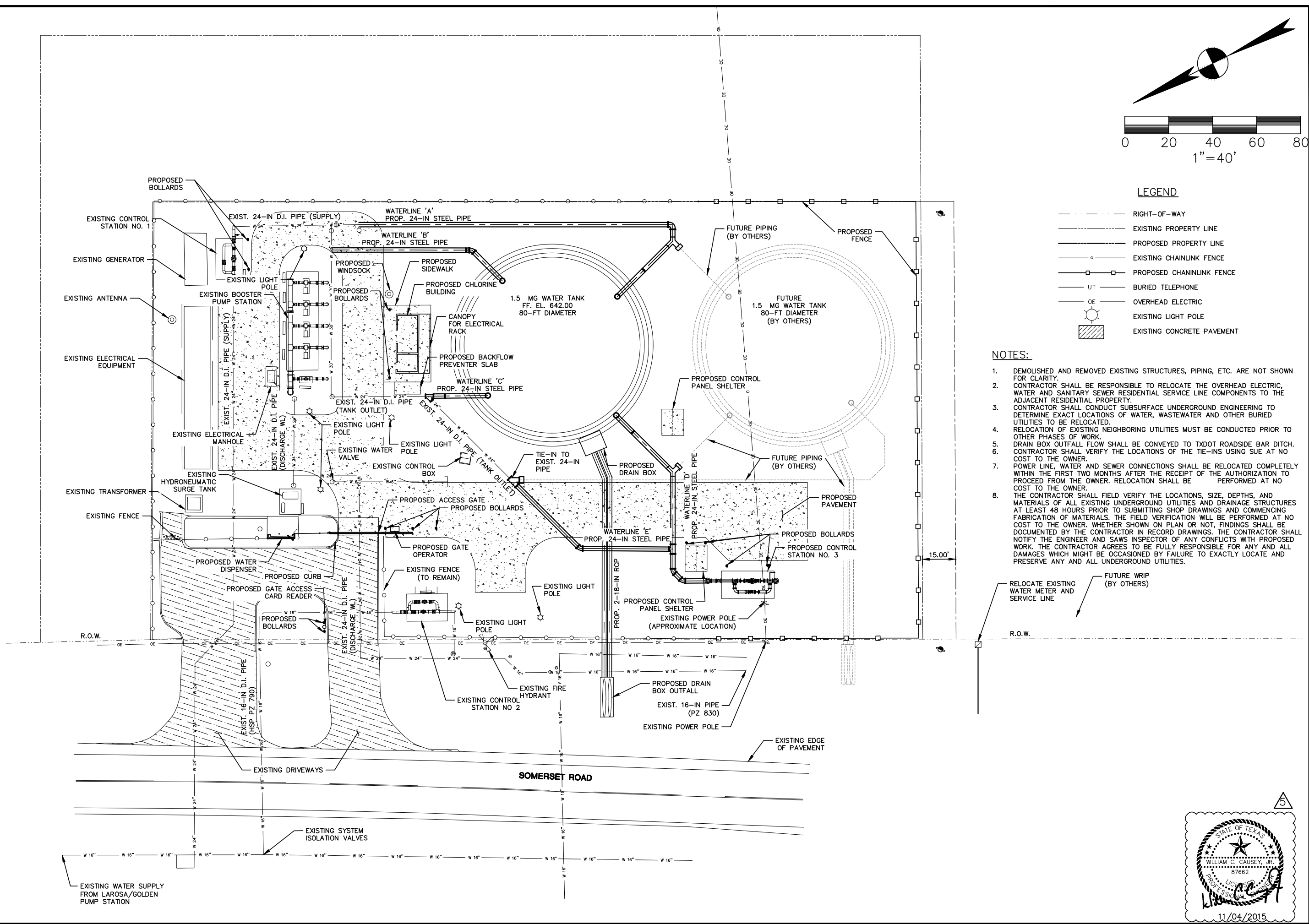
DATE:	OCTOBER 2015	DESIGNED BY:	BAL
DRAWN BY:	FJC	REVIEWED BY:	WCC
GB PRJ.#:	103187-00001		



LEGEND

	RIGHT-OF-WAY
	EXISTING PROPERTY LINE
	PROPOSED PROPERTY LINE
	EXISTING CHAINLINK FENCE
	PROPOSED CHAINLINK FENCE
	BURIED TELEPHONE
	OVERHEAD ELECTRIC
	EXISTING LIGHT POLE
	EXISTING CONCRETE PAVEMENT

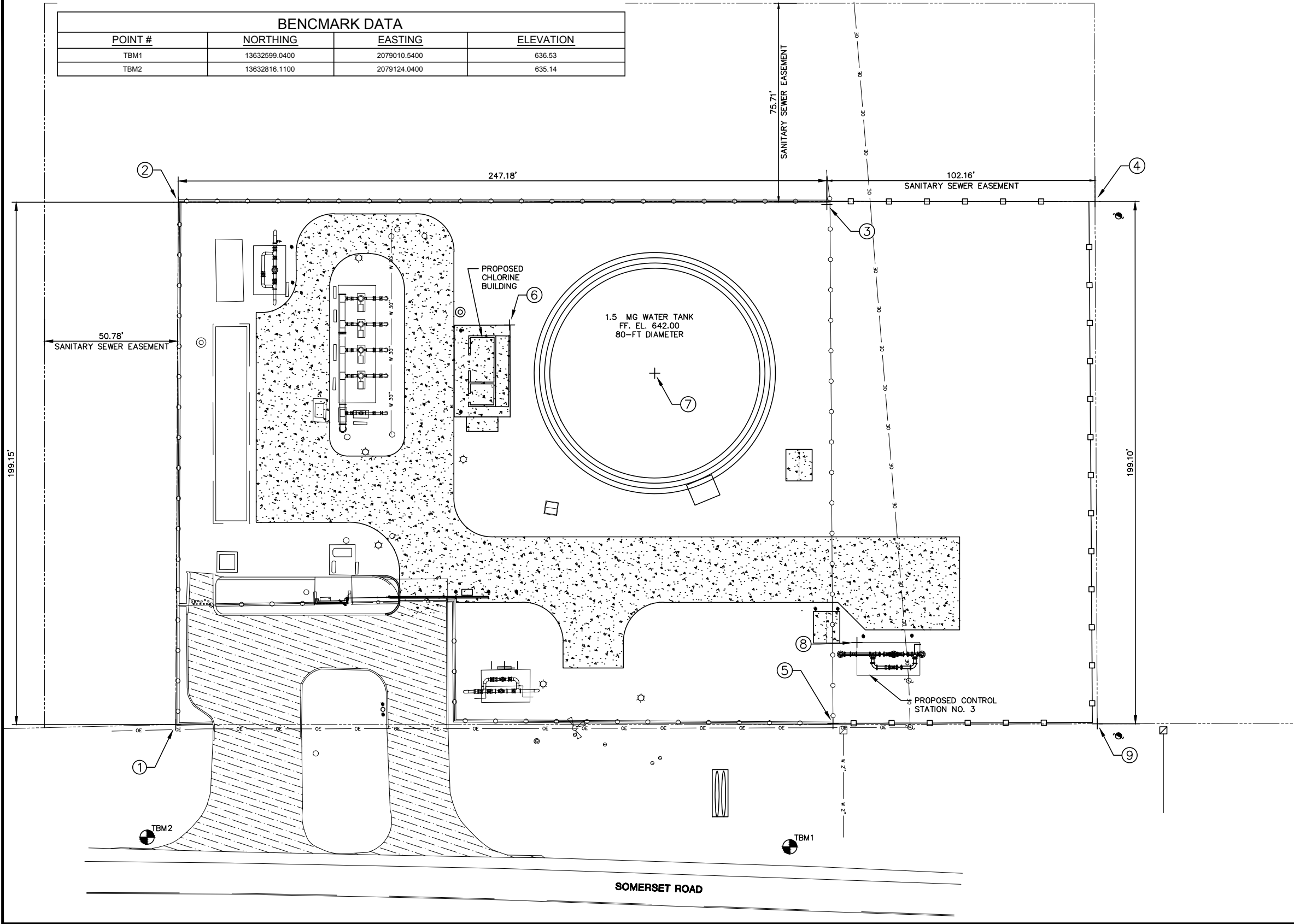
- NOTES:**
- DEMOLISHED AND REMOVED EXISTING STRUCTURES, PIPING, ETC. ARE NOT SHOWN FOR CLARITY.
 - CONTRACTOR SHALL BE RESPONSIBLE TO RELOCATE THE OVERHEAD ELECTRIC, WATER AND SANITARY SEWER RESIDENTIAL SERVICE LINE COMPONENTS TO THE ADJACENT RESIDENTIAL PROPERTY.
 - CONTRACTOR SHALL CONDUCT SUBSURFACE UNDERGROUND ENGINEERING TO DETERMINE EXACT LOCATIONS OF WATER, WASTEWATER AND OTHER BURIED UTILITIES TO BE RELOCATED.
 - RELOCATION OF EXISTING NEIGHBORING UTILITIES MUST BE CONDUCTED PRIOR TO OTHER PHASES OF WORK.
 - DRAIN BOX OUTFALL FLOW SHALL BE CONVEYED TO TXDOT ROADSIDE BAR DITCH.
 - CONTRACTOR SHALL VERIFY THE LOCATIONS OF THE TIE-INS USING SUE AT NO COST TO THE OWNER.
 - POWER LINE, WATER AND SEWER CONNECTIONS SHALL BE RELOCATED COMPLETELY WITHIN THE FIRST TWO MONTHS AFTER THE RECEIPT OF THE AUTHORIZATION TO PROCEED FROM THE OWNER. RELOCATION SHALL BE PERFORMED AT NO COST TO THE OWNER.
 - THE CONTRACTOR SHALL FIELD VERIFY THE LOCATIONS, SIZE, DEPTHS, AND MATERIALS OF ALL EXISTING UNDERGROUND UTILITIES AND DRAINAGE STRUCTURES AT LEAST 48 HOURS PRIOR TO SUBMITTING SHOP DRAWINGS AND COMMENCING FABRICATION OF MATERIALS. THE FIELD VERIFICATION WILL BE PERFORMED AT NO COST TO THE OWNER. WHETHER SHOWN ON PLAN OR NOT, FINDINGS SHALL BE DOCUMENTED BY THE CONTRACTOR IN RECORD DRAWINGS. THE CONTRACTOR SHALL NOTIFY THE ENGINEER AND SAWS INSPECTOR OF ANY CONFLICTS WITH PROPOSED WORK. THE CONTRACTOR AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.



Date: Nov. 04, 2015, 11:30am User ID: fcontero
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HORIZONTAL CONTROL			
POINT #	NORTHING	EASTING	DESCRIPTION
1	13632787.0266'	2079157.5484'	PROPERTY CORNER
2	13632696.5043'	2079334.9397'	PROPERTY CORNER
3	13632476.1633'	2079222.9216'	PROPERTY LINE
4	13632384.4584'	2079177.8857'	PROPERTY CORNER
5	13632563.1900'	2079045.0840'	PROPERTY LINE
6	13632604.8598'	2079236.2898'	PROPOSED CHLORINE BUILDING
7	13632563.7040'	2079194.9976'	CENTER OF PROPOSED GST
8	13632541.1047'	2079068.6012'	CORNER OF CONTROL STATION NO. 3
9	13632473.2961'	2078999.7033'	PROPERTY CORNER

BENCHMARK DATA			
POINT #	NORTHING	EASTING	ELEVATION
TBM1	13632599.0400	2079010.5400	636.53
TBM2	13632816.1100	2079124.0400	635.14



- LEGEND**
- RIGHT-OF-WAY
 - - - EXISTING PROPERTY LINE
 - PROPOSED PROPERTY LINE
 - EXISTING CHAINLINK FENCE
 - PROPOSED CHAINLINK FENCE
 - UT BURIED TELEPHONE
 - OE OVERHEAD ELECTRIC
 - ⊙ EXISTING LIGHT POLE
 - ▨ EXISTING CONCRETE PAVEMENT
 - ① HORIZONTAL CONTROL
 - ⊙ BENCHMARK

SAWS JOB NO.
P-14-6101



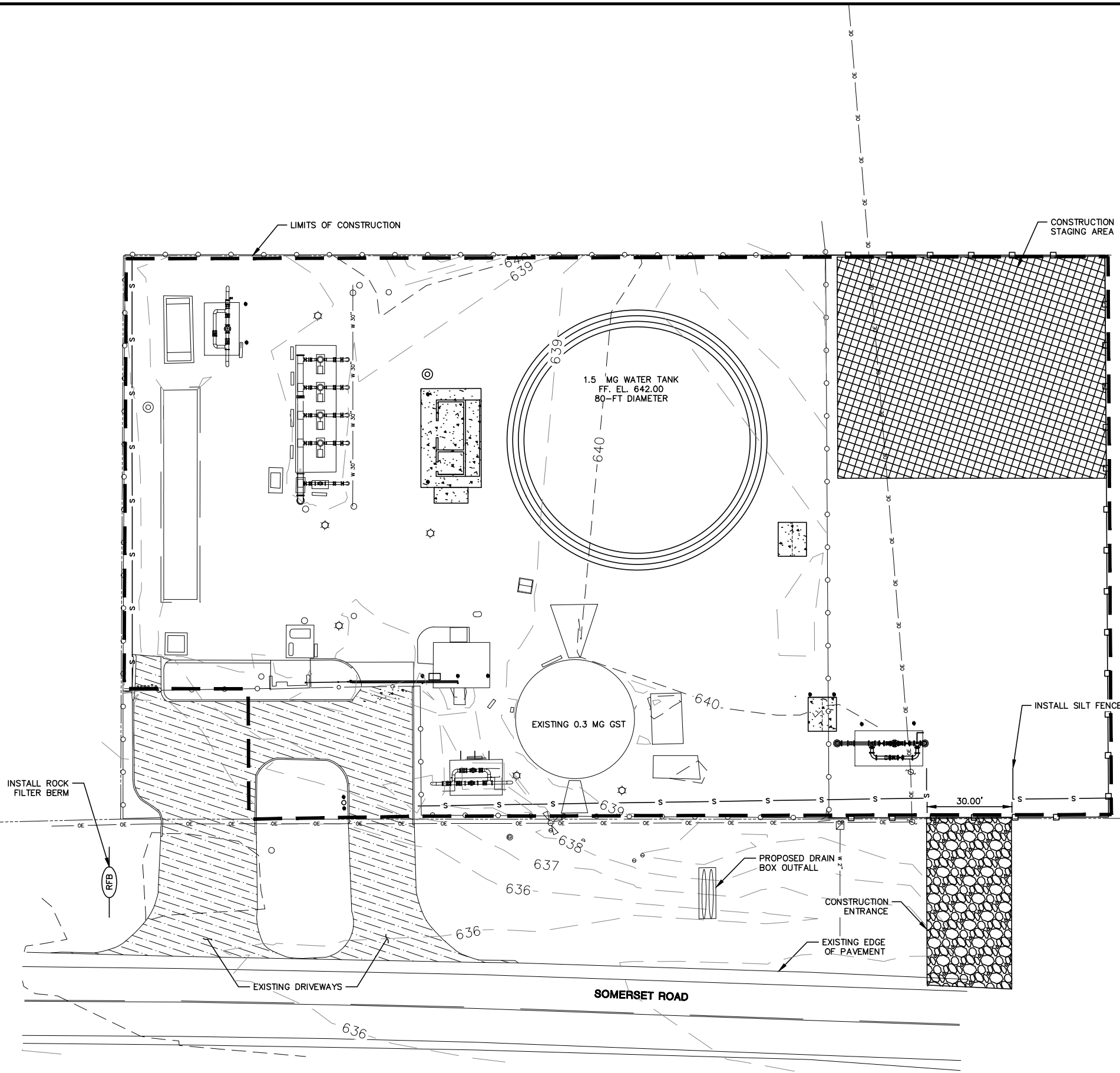
ADDENDUM NO.	DATE	W.C.C.	DATE
5	11.04.2015		

SAN ANTONIO WATER SYSTEM
 DSP CLAYTON TANK REPLACEMENT PROJECT
 HORIZONTAL & VERTICAL CONTROL PLAN

DATE:	OCTOBER 2015	DESIGNED BY:	BAL
		DRAWN BY:	FJC
		REVIEWED BY:	WCC
		CB PRJ.#:	103187-00001



Date: Nov. 04, 2015, 11:37am. User ID: fcantero
 File: G:\103187\00001\10318700001SPS_SWPPP.dwg



- LEGEND**
- RIGHT-OF-WAY
 - EXISTING PROPERTY LINE
 - PROPOSED PROPERTY LINE
 - EXISTING CHAINLINK FENCE
 - PROPOSED CHAINLINK FENCE
 - UT BURIED TELEPHONE
 - OE OVERHEAD ELECTRIC
 - LIMITS OF CONSTRUCTION
 - TEMPORARY SILT FENCE
 - CONSTRUCTION ENTRANCE/EXIT
 - RFB ROCK FILTER BERM

SAWS JOB NO.
P-14-6101

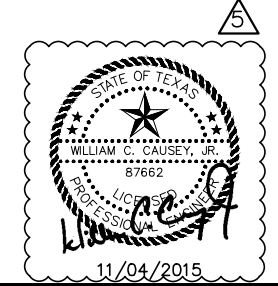


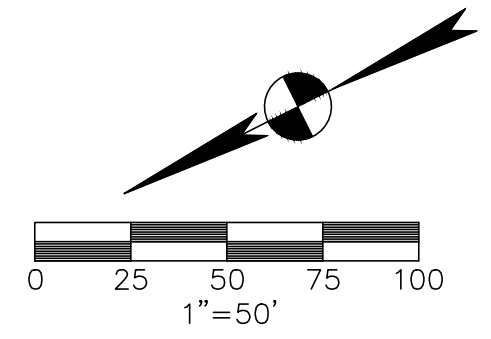
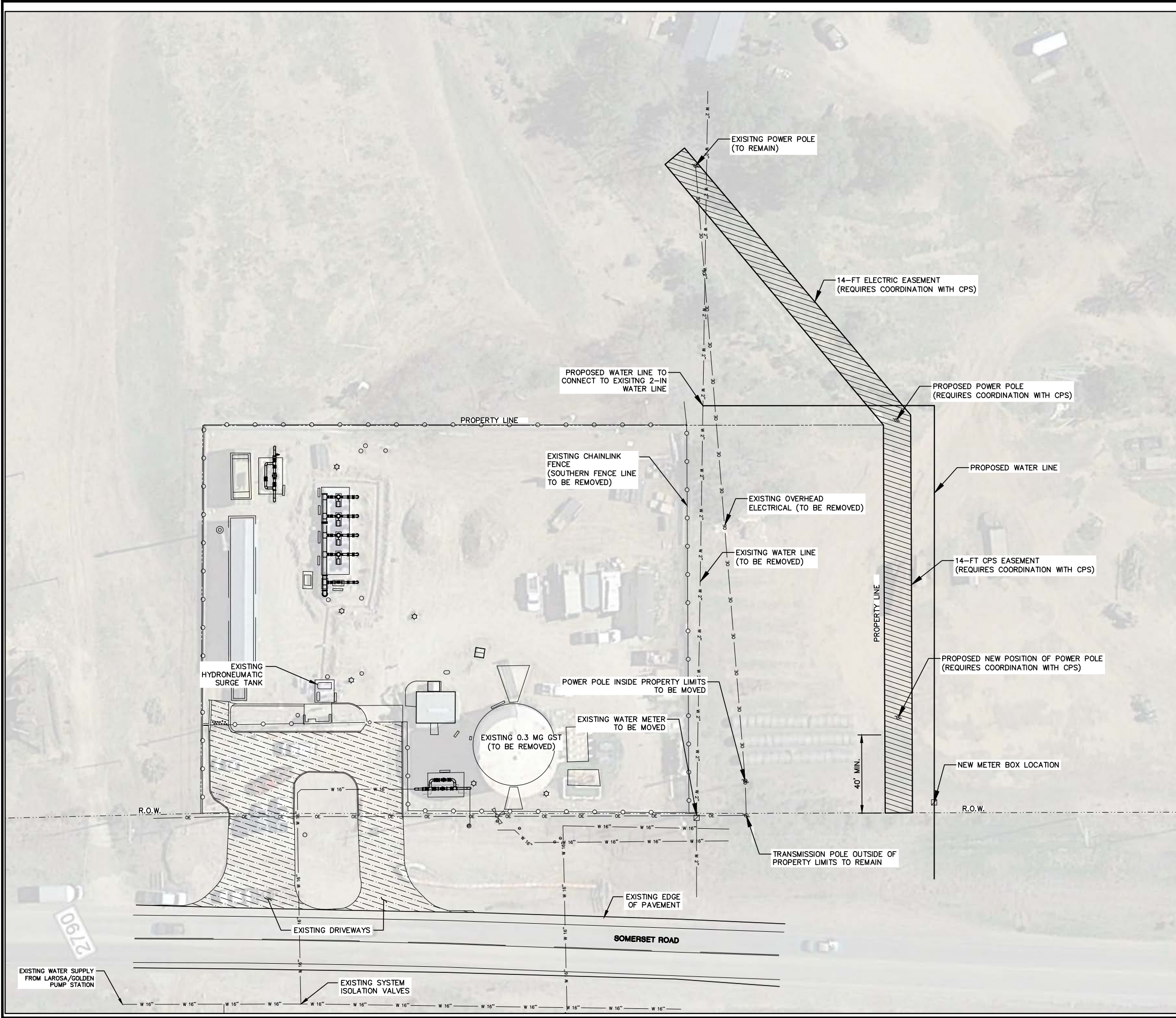
ADDENDUM NO.	5 P.E. SEAL DATE	W.C.C.	11.04.2015	Date
No.	Revision	Approved		

SAN ANTONIO WATER SYSTEM
 DSP CLAYTON TANK REPLACEMENT PROJECT
 STORM WATER POLLUTION PREVENTION PLAN

DATE: OCTOBER 2015	DESIGNED BY: BAL
DRAWN BY: FJC	REVIEWED BY: WCC
GB PRJ.#: 103187-00001	

SHEET
C-SPS-4
SHEET 8 OF 99





LEGEND

- RIGHT-OF-WAY
- EXISTING PROPERTY LINE
- PROPOSED PROPERTY LINE
- EXISTING CHAINLINK FENCE
- PROPOSED CHAINLINK FENCE
- BURIED TELEPHONE
- OVERHEAD ELECTRIC
- EXISTING LIGHT POLE
- EXISTING CONCRETE PAVEMENT

- NOTES:**
1. POWER LINE, WATER AND SEWER CONNECTIONS SHALL BE RELOCATED COMPLETELY WITHIN THE FIRST TWO MONTHS AFTER THE RECEIPT OF THE AUTHORIZATION TO PROCEED FROM THE OWNER. RELOCATION SHALL BE PERFORMED AT NO COST TO THE OWNER.
 2. CONTRACTOR TO FIELD VERIFY THE CONNECTION OF THE EXISTING 2-IN WATER LINE AT NO COST TO THE OWNER.



W.C.C.	11.04.2015	Date
5	APPENDUM NO. 5 P.E. SEAL DATE	
	Revision	No.
	Approved	

SAN ANTONIO WATER SYSTEM
 DSP CLAYTON TANK REPLACEMENT PROJECT
 RESIDENTIAL UTILITY RELOCATION
 PLAN

DATE:	OCTOBER 2015
DESIGNED BY:	BAL
DRAWN BY:	FJC
REVIEWED BY:	WCC
GB PRJ.#:	103187-00001





5	APPENDUM NO. 5	P.E. SEAL DATE	11.04.2015	W.C.C.	Date
				Approved	Date
				Revision	No.

SAN ANTONIO WATER SYSTEM
DSP CLAYTON TANK REPLACEMENT PROJECT
CONSTRUCTION SEQUENCE PH. I

DATE:	OCTOBER 2015
DESIGNED BY:	BAL
DRAWN BY:	FJC
REVIEWED BY:	WCC
GB PRJ.#:	103187-00001

SOMERSET PUMP STATION - VALVE SCHEDULE

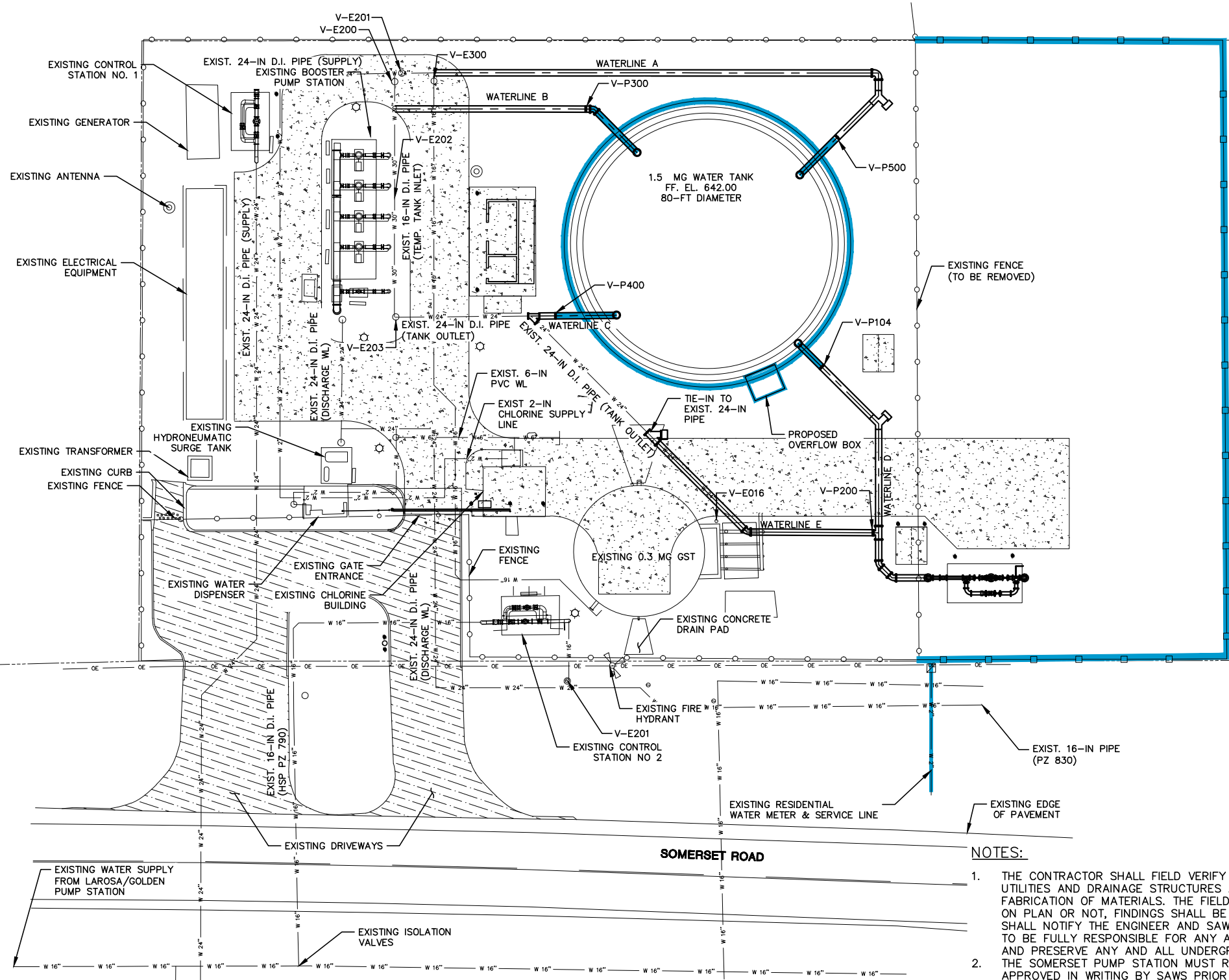
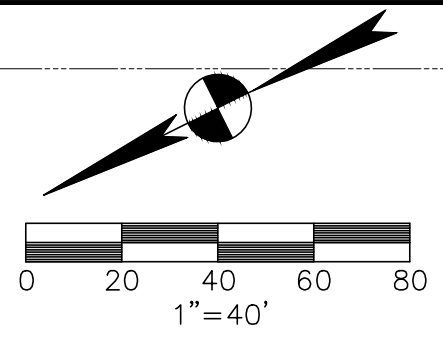
PROPOSED VALVES					
VALVE ID	SIZE	TYPE	ACTUATOR	OPEN	FUNCTION
V-P100	12	BU	MANUAL	LEFT	CONTROL STATION 3 VALVE
V-P101	12	BU	MANUAL	LEFT	CONTROL STATION 3 VALVE
V-P102	12	BU	MANUAL	LEFT	CONTROL STATION 3 VALVE
V-P103	4	CAV	MANUAL	LEFT	CONTROL STATION 3 COMBINATION AIR/VACUUM VALVE
V-P104	24	BU	MANUAL	LEFT	TANK INLET ISOLATION VALVE FROM WRIP
V-P200	24	BU	MANUAL	LEFT	ISOLATION VALVE FOR BY-PASS FROM WRIP
CV-P200	12	CV	ELECTRIC	N/A	CONTROL STATION 3 PRESSURE REDUCING VALVE
V-P300	24	BU	MANUAL	LEFT	VALVE TANK OUTLET
V-P400	24	BU	MANUAL	LEFT	VALVE TANK OUTLET
V-P500	24	BU	MANUAL	LEFT	ISOLATION VALVE TO FUTURE TANK
EXISTING VALVES					
VALVE ID	SIZE	TYPE	ACTUATOR	OPEN	FUNCTION
V-E001	16	GV	MANUAL	LEFT	ISOLATION VALVE FROM LAROSA TO SOMERSET FACILITY
V-E002	16	GV	MANUAL	LEFT	ISOLATION VALVE
V-E003	16	GV	MANUAL	LEFT	ISOLATION VALVE
V-E004	16	BU	MANUAL	LEFT	ISOLATION VALVE
V-E013	12	BU	MANUAL	LEFT	ISOLATES THE FLOW CONTROL STATION 1 TO EXISTING TANK
V-E016	16	BU	MANUAL	LEFT	EXISTING TANK OUTLET VALVE
CV-E100	12	CV	ELECTRIC	N/A	PRESSURE SUSTAINING VALVE
V-E100	16	GV	MANUAL	LEFT	ISOLATION VALVE
V-E110	12	GV	MANUAL	LEFT	CONTROL STATION 1 VALVE
V-E112	12	GV	MANUAL	LEFT	CONTROL STATION 1 VALVE
V-E114	12	GV	MANUAL	LEFT	CONTROL STATION 1 VALVE
CV-E200	6	CV	N/A	N/A	BOOSTER PUMP BYPASS VALVE
V-E200	24	BU	MANUAL	LEFT	ISOLATION VALVE
V-E201	24	BU	MANUAL	LEFT	ISOLATION VALVE
V-E202	30	BU	MANUAL	LEFT	BOOSTER PUMP ISOLATION VALVE
V-E203	24	BU	MANUAL	LEFT	ISOLATION VALVE
V-E250	10	BU	MANUAL	LEFT	ISOLATION VALVE
V-E300	16	BU	MANUAL	LEFT	ISOLATION VALVE
V-E400	24	BU	MANUAL	LEFT	BOOSTER PUMP ISOLATION VALVE
V-E405	24	BU	MANUAL	LEFT	ISOLATION VALVE
V-E450	10	BU	MANUAL	LEFT	ISOLATION VALVE
V-E480	6	GV	MANUAL	LEFT	ISOLATES FIRE HYDRANT
V-E490	16	BU	MANUAL	LEFT	ISOLATION VALVE
CV-E500	8	CV	ELECTRIC	N/A	CONTROL STATION 2 VALVE
V-E500	16	BU	MANUAL	LEFT	ISOLATES CONTROL STATION NO. 2
CV-E501	8	CV	ELECTRIC	N/A	CONTROL STATION 2 BYPASS VALVE
V-E501	12	GV	MANUAL	LEFT	CONTROL STATION 2 VALVE
V-E502	12	GV	MANUAL	LEFT	CONTROL STATION 2 VALVE
V-E503	12	GV	MANUAL	LEFT	CONTROL STATION 2 VALVE
V-E504	12	GV	MANUAL	LEFT	CONTROL STATION 2 VALVE
V-E505	16	BU	MANUAL	LEFT	ISOLATION VALVE
V-E600	16	BU	MANUAL	LEFT	ISOLATES SURGE TANK
V-E700	2	TAP	MANUAL	LEFT	FACILITY WATER SERVICE CHLORINE/DISPENSER

V-XXXX - EXISTING VALVE
V-PXXX - PROPOSED VALVE

LEGEND

PHASE I
 PHASE II
 PHASE III
 PHASE IV
 PHASE V

- PHASE I
PHASE I STEP I
1. INSTALL SWPPP DEVICES.
 2. RELOCATION OF RESIDENTIAL WATER METER AND SERVICE LINE.
 3. INSTALL NEW FENCE.
 4. DEMOLISH EXISTING FENCE.
- PHASE I STEP II
1. BEGIN AND CONCLUDE EXCAVATION OF PROPOSED GROUND STORAGE TANK PAD.
- PHASE I STEP III
1. INSTALL GROUND STORAGE TANK STRUCTURE. INSTALL INLETS AND OUTLETS PIPING STUB-OUTS, TANK OVERFLOW, AND MISCELLANEOUS TANK FEATURES.



NOTES:

1. THE CONTRACTOR SHALL FIELD VERIFY THE LOCATIONS, SIZE, DEPTHS, AND MATERIALS OF ALL EXISTING UNDERGROUND UTILITIES AND DRAINAGE STRUCTURES AT LEAST 48 HOURS PRIOR TO SUBMITTING SHOP DRAWINGS AND COMMENCING FABRICATION OF MATERIALS. THE FIELD VERIFICATION WILL BE PERFORMED AT NO COST TO THE OWNER. WHETHER SHOWN ON PLAN OR NOT, FINDINGS SHALL BE DOCUMENTED BY THE CONTRACTOR IN RECORD DRAWINGS. THE CONTRACTOR SHALL NOTIFY THE ENGINEER AND SAWS INSPECTOR OF ANY CONFLICTS WITH PROPOSED WORK. THE CONTRACTOR AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
2. THE SOMERSET PUMP STATION MUST REMAIN OPERATIONAL AT ALL TIMES UNLESS A TEMPORARY SHUT-DOWN IS APPROVED IN WRITING BY SAWS PRIOR TO THE SHUT-DOWN. FOR EACH TIE-IN, THE CONTRACTOR SHALL BE ABLE TO SHUT-DOWN THE EXISTING TANK FOR A MAXIMUM OF THREE (3) HOURS. THE CONTRACTOR MUST SEND A SHUT-DOWN NOTICE TO SAWS AT LEAST 60 DAYS PRIOR TO ANY SHUT-DOWN.





W.C.C.	11.04.2015	Date
5	ADDITION NO. 5	P.E. SEAL DATE
No.	Revision	Approved

SAN ANTONIO WATER SYSTEM
DSP CLAYTON TANK REPLACEMENT PROJECT
CONSTRUCTION SEQUENCE PH. II

DATE:	OCTOBER 2015	DESIGNED BY:	BAL
DRAWN BY:	FJC	REVIEWED BY:	WCC
GB PRJ.#:	103187-00001		

SOMERSET PUMP STATION - VALVE SCHEDULE

PROPOSED VALVES					
VALVE ID	SIZE	TYPE	ACTUATOR	OPEN	FUNCTION
V-P100	12	BU	MANUAL	LEFT	CONTROL STATION 3 VALVE
V-P101	12	BU	MANUAL	LEFT	CONTROL STATION 3 VALVE
V-P102	12	BU	MANUAL	LEFT	CONTROL STATION 3 VALVE
V-P103	4	CAV	MANUAL	LEFT	CONTROL STATION 3 COMBINATION AIR/VACUUM VALVE
V-P104	24	BU	MANUAL	LEFT	TANK INLET ISOLATION VALVE FROM WRIP
V-P200	24	BU	MANUAL	LEFT	ISOLATION VALVE FOR BY-PASS FROM WRIP
CV-P200	12	CV	ELECTRIC	N/A	CONTROL STATION 3 PRESSURE REDUCING VALVE
V-P300	24	BU	MANUAL	LEFT	VALVE TANK OUTLET
V-P400	24	BU	MANUAL	LEFT	VALVE TANK OUTLET
V-P500	24	BU	MANUAL	LEFT	ISOLATION VALVE TO FUTURE TANK
EXISTING VALVES					
VALVE ID	SIZE	TYPE	ACTUATOR	OPEN	FUNCTION
V-E001	16	GV	MANUAL	LEFT	ISOLATION VALVE FROM LAROSA TO SOMERSET FACILITY
V-E002	16	GV	MANUAL	LEFT	ISOLATION VALVE
V-E003	16	GV	MANUAL	LEFT	ISOLATION VALVE
V-E004	16	BU	MANUAL	LEFT	ISOLATION VALVE
V-E013	12	BU	MANUAL	LEFT	ISOLATES THE FLOW CONTROL STATION 1 TO EXISTING TANK
V-E016	16	BU	MANUAL	LEFT	EXISTING TANK OUTLET VALVE
CV-E100	12	CV	ELECTRIC	N/A	PRESSURE SUSTAINING VALVE
V-E100	16	GV	MANUAL	LEFT	ISOLATION VALVE
V-E110	12	GV	MANUAL	LEFT	CONTROL STATION 1 VALVE
V-E112	12	GV	MANUAL	LEFT	CONTROL STATION 1 VALVE
V-E114	12	GV	MANUAL	LEFT	CONTROL STATION 1 VALVE
CV-E200	6	CV	N/A	N/A	BOOSTER PUMP BYPASS VALVE
V-E200	24	BU	MANUAL	LEFT	ISOLATION VALVE
V-E201	24	BU	MANUAL	LEFT	ISOLATION VALVE
V-E202	30	BU	MANUAL	LEFT	BOOSTER PUMP ISOLATION VALVE
V-E203	24	BU	MANUAL	LEFT	ISOLATION VALVE
V-E250	10	BU	MANUAL	LEFT	ISOLATION VALVE
V-E300	16	BU	MANUAL	LEFT	ISOLATION VALVE
V-E400	24	BU	MANUAL	LEFT	BOOSTER PUMP ISOLATION VALVE
V-E405	24	BU	MANUAL	LEFT	ISOLATION VALVE
V-E450	10	BU	MANUAL	LEFT	ISOLATION VALVE
V-E480	6	GV	MANUAL	LEFT	ISOLATES FIRE HYDRANT
V-E490	16	BU	MANUAL	LEFT	ISOLATION VALVE
CV-E500	8	CV	ELECTRIC	N/A	CONTROL STATION 2 VALVE
V-E500	16	BU	MANUAL	LEFT	ISOLATES CONTROL STATION NO. 2
CV-E501	8	CV	ELECTRIC	N/A	CONTROL STATION 2 BYPASS VALVE
V-E501	12	GV	MANUAL	LEFT	CONTROL STATION 2 VALVE
V-E502	12	GV	MANUAL	LEFT	CONTROL STATION 2 VALVE
V-E503	12	GV	MANUAL	LEFT	CONTROL STATION 2 VALVE
V-E504	12	GV	MANUAL	LEFT	CONTROL STATION 2 VALVE
V-E505	16	BU	MANUAL	LEFT	ISOLATION VALVE
V-E600	16	BU	MANUAL	LEFT	ISOLATES SURGE TANK
V-E700	2	TAP	MANUAL	LEFT	FACILITY WATER SERVICE CHLORINE/DISPENSER

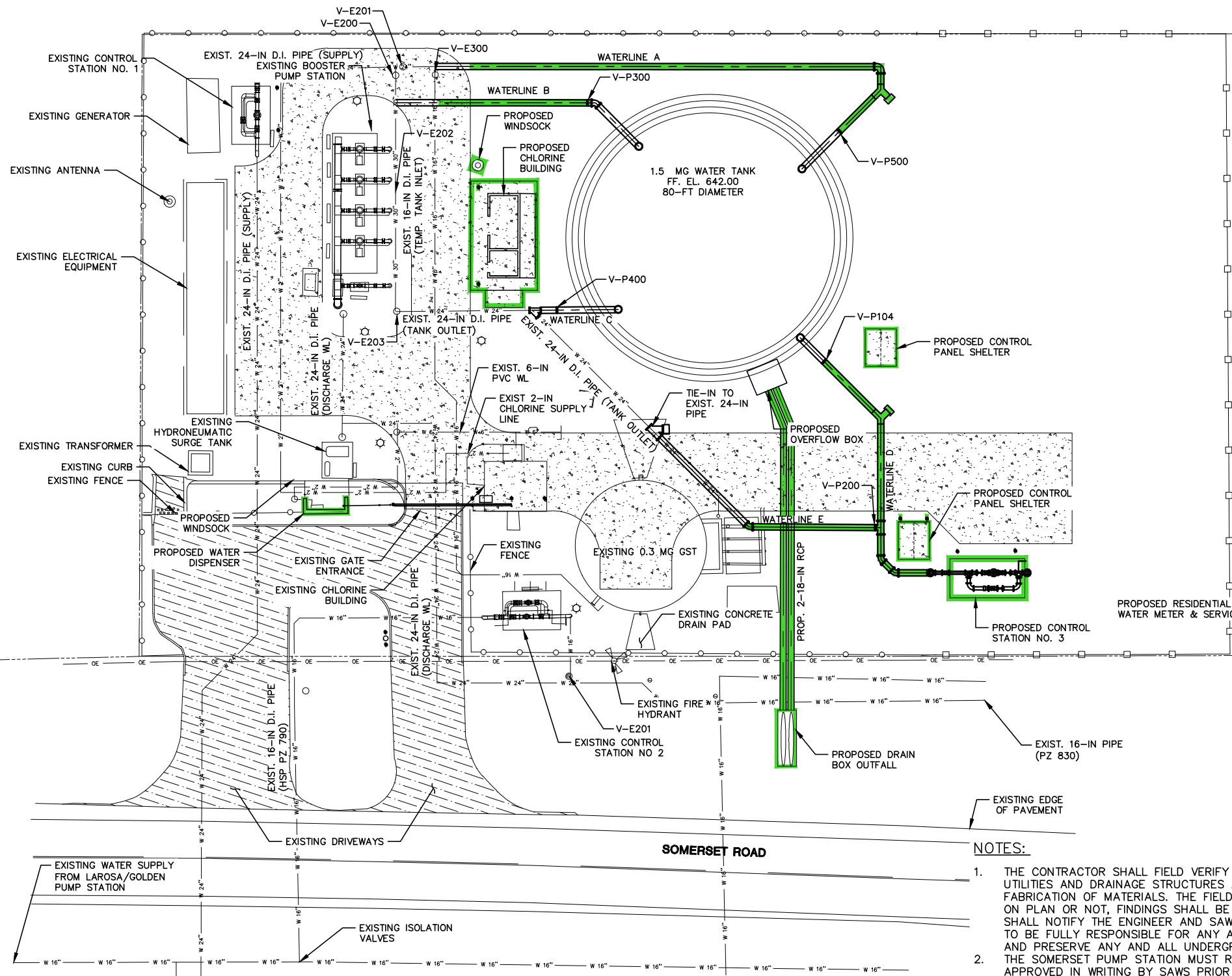
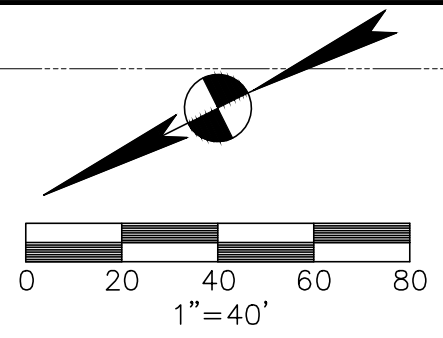
V-XXXX - EXISTING VALVE
V-PXXX - PROPOSED VALVE

LEGEND

- PHASE I
- PHASE II
- PHASE III
- PHASE IV
- PHASE V

- PHASE II STEP I**
1. CONSTRUCT WATERLINES 'A' AND 'E' WATERLINES SHORT OF THE TIE-INS.
 2. CONSTRUCT WATERLINE 'B' UP TO THE EXISTING 16-IN WATERLINE AS NEEDED.
 3. CONSTRUCT THE ENTIRE WATERLINE 'D' UP TO CONTROL STATION NO. 3.
 4. CONSTRUCT CONTROL STATION NO. 3.
 5. CONSTRUCT REINFORCED CONCRETE PIPES AND SAFETY END TREATMENT OUTFALL.
 6. DEMOLISH AND CONSTRUCT NEW WATER DISPENSER WITH PROPOSED WINDSOCK.

- PHASE II STEP II**
1. INSTALL CHLORINE SYSTEM INCLUDING BUILDING AND CHEMICAL YARD PIPING.
 2. INSTALL ELECTRICAL SYSTEM INCLUDING CONTROL, ELECTRICAL RACKS, AND CONTROL PANEL SHELTER.
 3. INSTALL ELECTRICAL & INSTRUMENTATION FOR THE SYSTEM COMMUNICATION AND UPGRADES.
- PHASE II STEP III**
1. TEST AND DISINFECTION OF TANK AND PIPING.
 2. SYSTEM TESTING OF CHLORINE, HVAC, ELECTRICAL AND INSTRUMENTATION.
 3. TESTING OF COMMUNICATION SYSTEM.



NOTES:

1. THE CONTRACTOR SHALL FIELD VERIFY THE LOCATIONS, SIZE, DEPTHS, AND MATERIALS OF ALL EXISTING UNDERGROUND UTILITIES AND DRAINAGE STRUCTURES AT LEAST 48 HOURS PRIOR TO SUBMITTING SHOP DRAWINGS AND COMMENCING FABRICATION OF MATERIALS. THE FIELD VERIFICATION WILL BE PERFORMED AT NO COST TO THE OWNER, WHETHER SHOWN ON PLAN OR NOT, FINDINGS SHALL BE DOCUMENTED BY THE CONTRACTOR IN RECORD DRAWINGS. THE CONTRACTOR SHALL NOTIFY THE ENGINEER AND SAWS INSPECTOR OF ANY CONFLICTS WITH PROPOSED WORK. THE CONTRACTOR AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
2. THE SOMERSET PUMP STATION MUST REMAIN OPERATIONAL AT ALL TIMES UNLESS A TEMPORARY SHUT-DOWN IS APPROVED IN WRITING BY SAWS PRIOR TO THE SHUT-DOWN. FOR EACH TIE-IN, THE CONTRACTOR SHALL BE ABLE TO SHUT-DOWN THE EXISTING TANK FOR A MAXIMUM OF THREE (3) HOURS. THE CONTRACTOR MUST SEND A SHUT-DOWN NOTICE TO SAWS AT LEAST 60 DAYS PRIOR TO ANY SHUT-DOWN.



11/04/2015



5	APPENDUM NO. 5	P.E. SEAL DATE	W.C.C.	11.04.2015	Date
					Approved
					Revision
					No.

SAN ANTONIO WATER SYSTEM
DSP CLAYTON TANK REPLACEMENT PROJECT
CONSTRUCTION SEQUENCE PH. III

DATE:	OCTOBER 2015	BAL	DESIGNED BY:	BAL
DRAWN BY:	FJC	WCC	REVIEWED BY:	WCC
GB PRJ.#:	103187-00001			

SOMERSET PUMP STATION - VALVE SCHEDULE

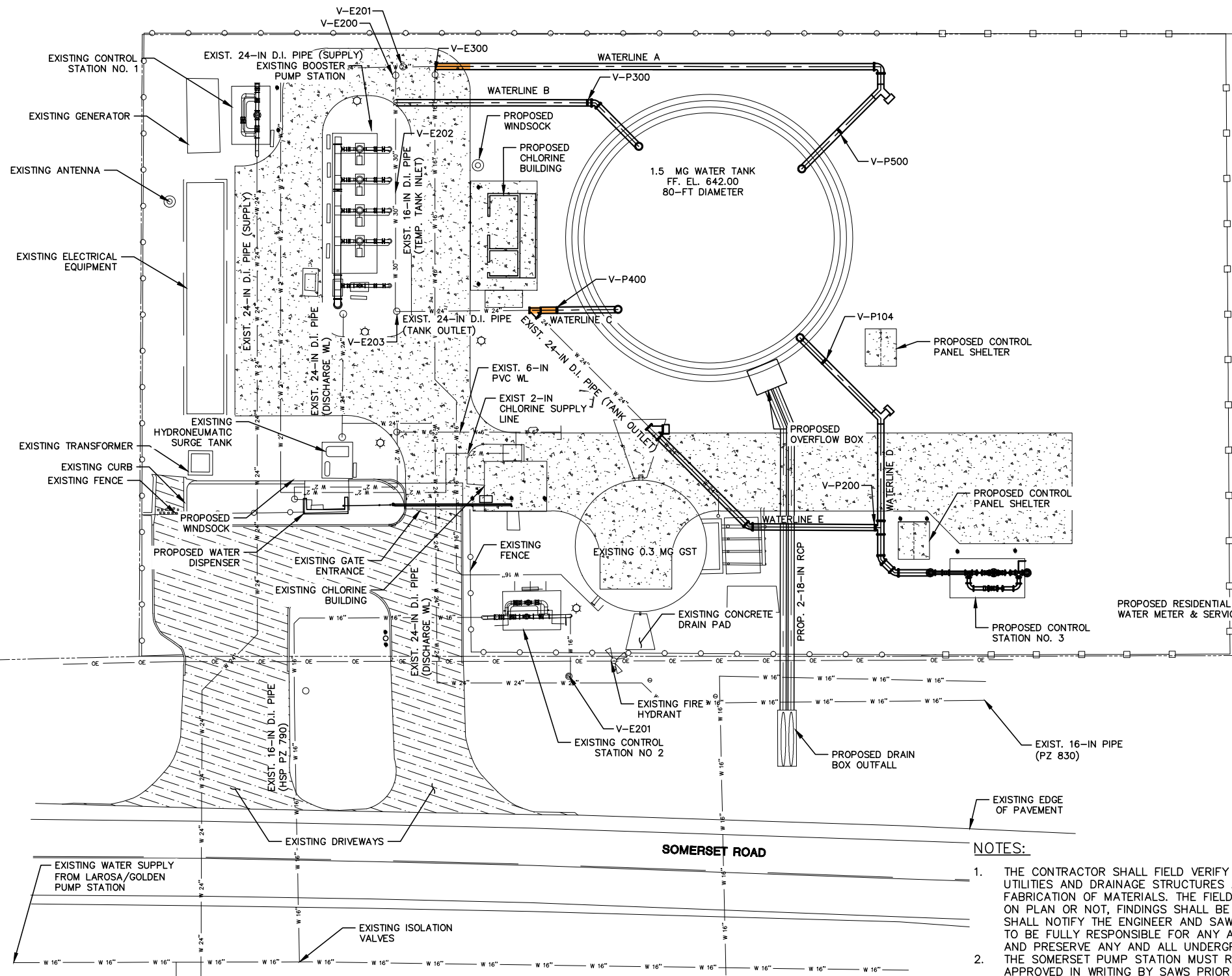
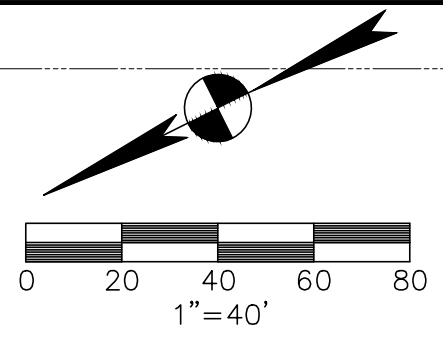
PROPOSED VALVES					
VALVE ID	SIZE	TYPE	ACTUATOR	OPEN	FUNCTION
V-P100	12	BU	MANUAL	LEFT	CONTROL STATION 3 VALVE
V-P101	12	BU	MANUAL	LEFT	CONTROL STATION 3 VALVE
V-P102	12	BU	MANUAL	LEFT	CONTROL STATION 3 VALVE
V-P103	4	CAV	MANUAL	LEFT	CONTROL STATION 3 COMBINATION AIR/VACUUM VALVE
V-P104	24	BU	MANUAL	LEFT	TANK INLET ISOLATION VALVE FROM WRIP
V-P200	24	BU	MANUAL	LEFT	ISOLATION VALVE FOR BY-PASS FROM WRIP
CV-P200	12	CV	ELECTRIC	N/A	CONTROL STATION 3 PRESSURE REDUCING VALVE
V-P300	24	BU	MANUAL	LEFT	VALVE TANK OUTLET
V-P400	24	BU	MANUAL	LEFT	VALVE TANK OUTLET
V-P500	24	BU	MANUAL	LEFT	ISOLATION VALVE TO FUTURE TANK
EXISTING VALVES					
VALVE ID	SIZE	TYPE	ACTUATOR	OPEN	FUNCTION
V-E001	16	GV	MANUAL	LEFT	ISOLATION VALVE FROM LAROSA TO SOMERSET FACILITY
V-E002	16	GV	MANUAL	LEFT	ISOLATION VALVE
V-E003	16	GV	MANUAL	LEFT	ISOLATION VALVE
V-E004	16	BU	MANUAL	LEFT	ISOLATION VALVE
V-E013	12	BU	MANUAL	LEFT	ISOLATES THE FLOW CONTROL STATION 1 TO EXISTING TANK
V-E016	16	BU	MANUAL	LEFT	EXISTING TANK OUTLET VALVE
CV-E100	12	CV	ELECTRIC	N/A	PRESSURE SUSTAINING VALVE
V-E100	16	GV	MANUAL	LEFT	ISOLATION VALVE
V-E110	12	GV	MANUAL	LEFT	CONTROL STATION 1 VALVE
V-E112	12	GV	MANUAL	LEFT	CONTROL STATION 1 VALVE
V-E114	12	GV	MANUAL	LEFT	CONTROL STATION 1 VALVE
CV-E200	6	CV	N/A	N/A	BOOSTER PUMP BYPASS VALVE
V-E200	24	BU	MANUAL	LEFT	ISOLATION VALVE
V-E201	24	BU	MANUAL	LEFT	ISOLATION VALVE
V-E202	30	BU	MANUAL	LEFT	BOOSTER PUMP ISOLATION VALVE
V-E203	24	BU	MANUAL	LEFT	ISOLATION VALVE
V-E250	10	BU	MANUAL	LEFT	ISOLATION VALVE
V-E300	16	BU	MANUAL	LEFT	ISOLATION VALVE
V-E400	24	BU	MANUAL	LEFT	BOOSTER PUMP ISOLATION VALVE
V-E405	24	BU	MANUAL	LEFT	ISOLATION VALVE
V-E450	10	BU	MANUAL	LEFT	ISOLATION VALVE
V-E480	6	GV	MANUAL	LEFT	ISOLATES FIRE HYDRANT
V-E490	16	BU	MANUAL	LEFT	ISOLATION VALVE
CV-E500	8	CV	ELECTRIC	N/A	CONTROL STATION 2 VALVE
V-E500	16	BU	MANUAL	LEFT	ISOLATES CONTROL STATION NO. 2
CV-E501	8	CV	ELECTRIC	N/A	CONTROL STATION 2 BYPASS VALVE
V-E501	12	GV	MANUAL	LEFT	CONTROL STATION 2 VALVE
V-E502	12	GV	MANUAL	LEFT	CONTROL STATION 2 VALVE
V-E503	12	GV	MANUAL	LEFT	CONTROL STATION 2 VALVE
V-E504	12	GV	MANUAL	LEFT	CONTROL STATION 2 VALVE
V-E505	16	BU	MANUAL	LEFT	ISOLATION VALVE
V-E600	16	BU	MANUAL	LEFT	ISOLATES SURGE TANK
V-E700	2	TAP	MANUAL	LEFT	FACILITY WATER SERVICE CHLORINE/DISPENSER

V-XXXX - EXISTING VALVE
V-PXXX - PROPOSED VALVE

LEGEND

- PHASE I
- PHASE II
- PHASE III
- PHASE IV
- PHASE V

- PHASE III**
- PHASE III STEP III**
1. TEST NEW 1.5 MG GST FOR PERMANENT OPERATION.
- PHASE III STEP I**
1. CONNECTION OF WATERLINE 'A' TO EXISTING 24-INCH DI TEE BY TEMPORARILY CLOSING VALVES V-E201 AND V-E300. VALVE V-P500 IS TO REMAIN CLOSED.
- PHASE III STEP II**
1. CONNECTION OF WATERLINE 'C' TO EXISTING 24-INCH WYE FROM EXISTING 0.3 MG GST BY TEMPORARILY CLOSING VALVES V-E016 AND V-E203. VALVE V-P400 IS TO REMAIN CLOSED.



NOTES:

- THE CONTRACTOR SHALL FIELD VERIFY THE LOCATIONS, SIZE, DEPTHS, AND MATERIALS OF ALL EXISTING UNDERGROUND UTILITIES AND DRAINAGE STRUCTURES AT LEAST 48 HOURS PRIOR TO SUBMITTING SHOP DRAWINGS AND COMMENCING FABRICATION OF MATERIALS. THE FIELD VERIFICATION WILL BE PERFORMED AT NO COST TO THE OWNER, WHETHER SHOWN ON PLAN OR NOT, FINDINGS SHALL BE DOCUMENTED BY THE CONTRACTOR IN RECORD DRAWINGS. THE CONTRACTOR SHALL NOTIFY THE ENGINEER AND SAWS INSPECTOR OF ANY CONFLICTS WITH PROPOSED WORK. THE CONTRACTOR AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
- THE SOMERSET PUMP STATION MUST REMAIN OPERATIONAL AT ALL TIMES UNLESS A TEMPORARY SHUT-DOWN IS APPROVED IN WRITING BY SAWS PRIOR TO THE SHUT-DOWN. FOR EACH TIE-IN, THE CONTRACTOR SHALL BE ABLE TO SHUT-DOWN THE EXISTING TANK FOR A MAXIMUM OF THREE (3) HOURS. THE CONTRACTOR MUST SEND A SHUT-DOWN NOTICE TO SAWS AT LEAST 60 DAYS PRIOR TO ANY SHUT-DOWN.





W.C.C.	11.04.2015	Date
5	ADDITION NO. 5	P.E. SEAL DATE
No.	Revision	Approved

SAN ANTONIO WATER SYSTEM
DSP CLAYTON TANK REPLACEMENT PROJECT
CONSTRUCTION SEQUENCE PH. IV

DATE:	OCTOBER 2015	DESIGNED BY:	BAL
DRAWN BY:	FJC	REVIEWED BY:	WCC
GB PRJ.#:	103187-00001		

SOMERSET PUMP STATION - VALVE SCHEDULE

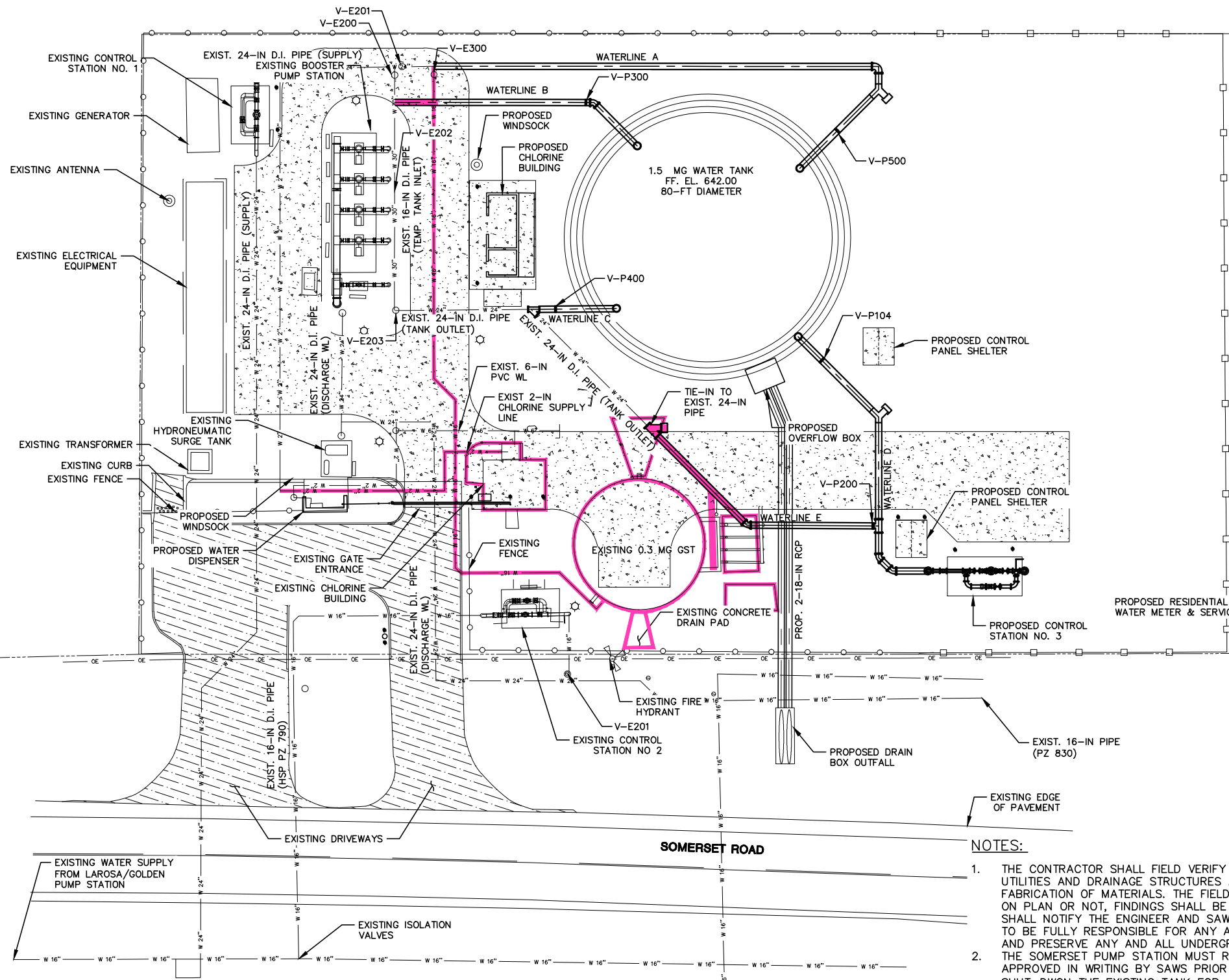
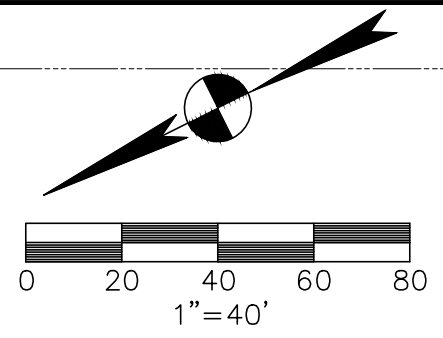
PROPOSED VALVES					
VALVE ID	SIZE	TYPE	ACTUATOR	OPEN	FUNCTION
V-P100	12	BU	MANUAL	LEFT	CONTROL STATION 3 VALVE
V-P101	12	BU	MANUAL	LEFT	CONTROL STATION 3 VALVE
V-P102	12	BU	MANUAL	LEFT	CONTROL STATION 3 VALVE
V-P103	4	CAV	MANUAL	LEFT	CONTROL STATION 3 COMBINATION AIR/VACUUM VALVE
V-P104	24	BU	MANUAL	LEFT	TANK INLET ISOLATION VALVE FROM WRIP
V-P200	24	BU	MANUAL	LEFT	ISOLATION VALVE FOR BY-PASS FROM WRIP
CV-P200	12	CV	ELECTRIC	N/A	CONTROL STATION 3 PRESSURE REDUCING VALVE
V-P300	24	BU	MANUAL	LEFT	VALVE TANK OUTLET
V-P400	24	BU	MANUAL	LEFT	VALVE TANK OUTLET
V-P500	24	BU	MANUAL	LEFT	ISOLATION VALVE TO FUTURE TANK
EXISTING VALVES					
VALVE ID	SIZE	TYPE	ACTUATOR	OPEN	FUNCTION
V-E001	16	GV	MANUAL	LEFT	ISOLATION VALVE FROM LAROSA TO SOMERSET FACILITY
V-E002	16	GV	MANUAL	LEFT	ISOLATION VALVE
V-E003	16	GV	MANUAL	LEFT	ISOLATION VALVE
V-E004	16	BU	MANUAL	LEFT	ISOLATION VALVE
V-E013	12	BU	MANUAL	LEFT	ISOLATES THE FLOW CONTROL STATION 1 TO EXISTING TANK
V-E016	16	BU	MANUAL	LEFT	EXISTING TANK OUTLET VALVE
CV-E100	12	CV	ELECTRIC	N/A	PRESSURE SUSTAINING VALVE
V-E100	16	GV	MANUAL	LEFT	ISOLATION VALVE
V-E110	12	GV	MANUAL	LEFT	CONTROL STATION 1 VALVE
V-E112	12	GV	MANUAL	LEFT	CONTROL STATION 1 VALVE
V-E114	12	GV	MANUAL	LEFT	CONTROL STATION 1 VALVE
CV-E200	6	CV	N/A	N/A	BOOSTER PUMP BYPASS VALVE
V-E200	24	BU	MANUAL	LEFT	ISOLATION VALVE
V-E201	24	BU	MANUAL	LEFT	ISOLATION VALVE
V-E202	30	BU	MANUAL	LEFT	BOOSTER PUMP ISOLATION VALVE
V-E203	24	BU	MANUAL	LEFT	ISOLATION VALVE
V-E250	10	BU	MANUAL	LEFT	ISOLATION VALVE
V-E300	16	BU	MANUAL	LEFT	ISOLATION VALVE
V-E400	24	BU	MANUAL	LEFT	BOOSTER PUMP ISOLATION VALVE
V-E405	24	BU	MANUAL	LEFT	ISOLATION VALVE
V-E450	10	BU	MANUAL	LEFT	ISOLATION VALVE
V-E480	6	GV	MANUAL	LEFT	ISOLATES FIRE HYDRANT
V-E490	16	BU	MANUAL	LEFT	ISOLATION VALVE
CV-E500	8	CV	ELECTRIC	N/A	CONTROL STATION 2 VALVE
V-E500	16	BU	MANUAL	LEFT	ISOLATES CONTROL STATION NO. 2
CV-E501	8	CV	ELECTRIC	N/A	CONTROL STATION 2 BYPASS VALVE
V-E501	12	GV	MANUAL	LEFT	CONTROL STATION 2 VALVE
V-E502	12	GV	MANUAL	LEFT	CONTROL STATION 2 VALVE
V-E503	12	GV	MANUAL	LEFT	CONTROL STATION 2 VALVE
V-E504	12	GV	MANUAL	LEFT	CONTROL STATION 2 VALVE
V-E505	16	BU	MANUAL	LEFT	ISOLATION VALVE
V-E600	16	BU	MANUAL	LEFT	ISOLATES SURGE TANK
V-E700	2	TAP	MANUAL	LEFT	FACILITY WATER SERVICE CHLORINE/DISPENSER

V-EXXX - EXISTING VALVE
V-PXXX - PROPOSED VALVE

LEGEND

- PHASE I
- PHASE II
- PHASE III
- PHASE IV
- PHASE V

- PHASE IV
- DEMOLITION OF EXISTING FACILITIES INCLUDE 0.3 MG GST, CHLORINE BUILDING, AND YARD PIPING.
 - CONNECTION OF WATERLINE 'E' TO EXISTING 24-INCH PIPE FROM EXISTING 0.3 MG GST OUTLET.
 - CONNECTION OF WATERLINE 'B' TO EXISTING 30-INCH DI TEE BY TEMPORARILY CLOSING VALVES V-E202 AND V-E200. VALVE V-P300 IS TO REMAIN CLOSED.



NOTES:

- THE CONTRACTOR SHALL FIELD VERIFY THE LOCATIONS, SIZE, DEPTHS, AND MATERIALS OF ALL EXISTING UNDERGROUND UTILITIES AND DRAINAGE STRUCTURES AT LEAST 48 HOURS PRIOR TO SUBMITTING SHOP DRAWINGS AND COMMENCING FABRICATION OF MATERIALS. THE FIELD VERIFICATION WILL BE PERFORMED AT NO COST TO THE OWNER, WHETHER SHOWN ON PLAN OR NOT, FINDINGS SHALL BE DOCUMENTED BY THE CONTRACTOR IN RECORD DRAWINGS. THE CONTRACTOR SHALL NOTIFY THE ENGINEER AND SAWS INSPECTOR OF ANY CONFLICTS WITH PROPOSED WORK. THE CONTRACTOR AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
- THE SOMERSET PUMP STATION MUST REMAIN OPERATIONAL AT ALL TIMES UNLESS A TEMPORARY SHUT-DOWN IS APPROVED IN WRITING BY SAWS PRIOR TO THE SHUT-DOWN. FOR EACH TIE-IN, THE CONTRACTOR SHALL BE ABLE TO SHUT-DOWN THE EXISTING TANK FOR A MAXIMUM OF THREE (3) HOURS. THE CONTRACTOR MUST SEND A SHUT-DOWN NOTICE TO SAWS AT LEAST 60 DAYS PRIOR TO ANY SHUT-DOWN.





W.C.C.	11.04.2015	Date
5	ADDITION NO. 5 P.E. SEAL DATE	Approved
No.	Revision	Date

SAN ANTONIO WATER SYSTEM
DSP CLAYTON TANK REPLACEMENT PROJECT
CONSTRUCTION SEQUENCE PH. V &
OVERALL CONSTRUCTION PHASING

DATE:	OCTOBER 2015	BAL
DESIGNED BY:	BAL	FJC
DRAWN BY:	FJC	WCC
REVIEWED BY:	WCC	GB PRJ.#: 103187-00001

SOMERSET PUMP STATION - VALVE SCHEDULE

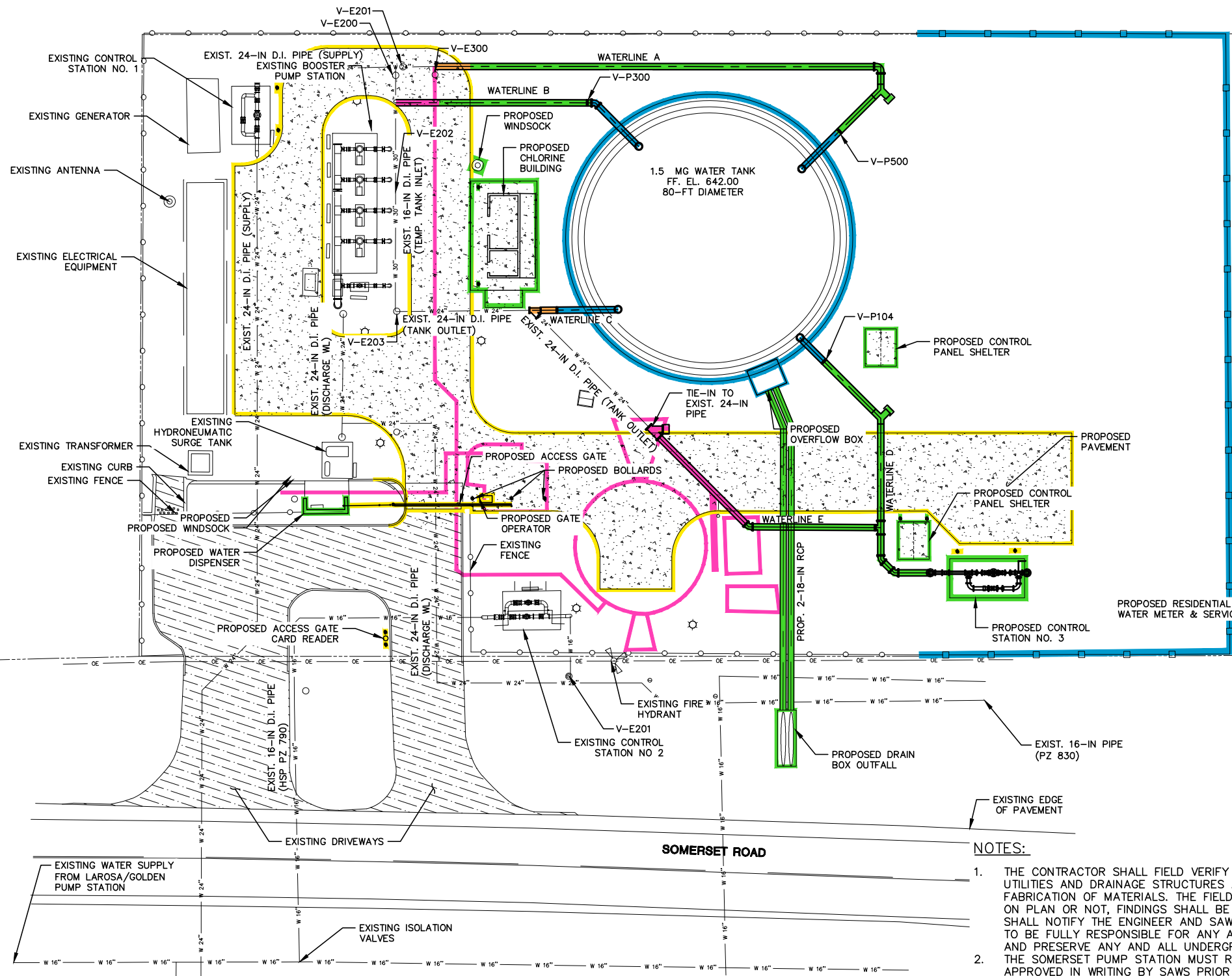
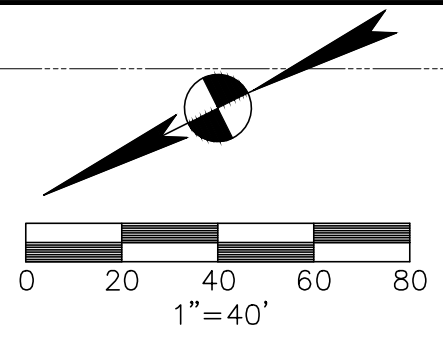
PROPOSED VALVES					
VALVE ID	SIZE	TYPE	ACTUATOR	OPEN	FUNCTION
V-P100	12	BU	MANUAL	LEFT	CONTROL STATION 3 VALVE
V-P101	12	BU	MANUAL	LEFT	CONTROL STATION 3 VALVE
V-P102	12	BU	MANUAL	LEFT	CONTROL STATION 3 VALVE
V-P103	4	CAV	MANUAL	LEFT	CONTROL STATION 3 COMBINATION AIR/VACUUM VALVE
V-P104	24	BU	MANUAL	LEFT	TANK INLET ISOLATION VALVE FROM WRIP
V-P200	24	BU	MANUAL	LEFT	ISOLATION VALVE FOR BY-PASS FROM WRIP
CV-P200	12	CV	ELECTRIC	N/A	CONTROL STATION 3 PRESSURE REDUCING VALVE
V-P300	24	BU	MANUAL	LEFT	VALVE TANK OUTLET
V-P400	24	BU	MANUAL	LEFT	VALVE TANK OUTLET
V-P500	24	BU	MANUAL	LEFT	ISOLATION VALVE TO FUTURE TANK
EXISTING VALVES					
VALVE ID	SIZE	TYPE	ACTUATOR	OPEN	FUNCTION
V-E001	16	GV	MANUAL	LEFT	ISOLATION VALVE FROM LAROSA TO SOMERSET FACILITY
V-E002	16	GV	MANUAL	LEFT	ISOLATION VALVE
V-E003	16	GV	MANUAL	LEFT	ISOLATION VALVE
V-E004	16	BU	MANUAL	LEFT	ISOLATION VALVE
V-E013	12	BU	MANUAL	LEFT	ISOLATES THE FLOW CONTROL STATION 1 TO EXISTING TANK
V-E016	16	BU	MANUAL	LEFT	EXISTING TANK OUTLET VALVE
CV-E100	12	CV	ELECTRIC	N/A	PRESSURE SUSTAINING VALVE
V-E100	16	GV	MANUAL	LEFT	ISOLATION VALVE
V-E110	12	GV	MANUAL	LEFT	CONTROL STATION 1 VALVE
V-E112	12	GV	MANUAL	LEFT	CONTROL STATION 1 VALVE
V-E114	12	GV	MANUAL	LEFT	CONTROL STATION 1 VALVE
CV-E200	6	CV	N/A	N/A	BOOSTER PUMP BYPASS VALVE
V-E200	24	BU	MANUAL	LEFT	ISOLATION VALVE
V-E201	24	BU	MANUAL	LEFT	ISOLATION VALVE
V-E202	30	BU	MANUAL	LEFT	BOOSTER PUMP ISOLATION VALVE
V-E203	24	BU	MANUAL	LEFT	ISOLATION VALVE
V-E250	10	BU	MANUAL	LEFT	ISOLATION VALVE
V-E300	16	BU	MANUAL	LEFT	ISOLATION VALVE
V-E400	24	BU	MANUAL	LEFT	BOOSTER PUMP ISOLATION VALVE
V-E405	24	BU	MANUAL	LEFT	ISOLATION VALVE
V-E450	10	BU	MANUAL	LEFT	ISOLATION VALVE
V-E480	6	GV	MANUAL	LEFT	ISOLATES FIRE HYDRANT
V-E490	16	BU	MANUAL	LEFT	ISOLATION VALVE
CV-E500	8	CV	ELECTRIC	N/A	CONTROL STATION 2 VALVE
V-E500	16	BU	MANUAL	LEFT	ISOLATES CONTROL STATION NO. 2
CV-E501	8	CV	ELECTRIC	N/A	CONTROL STATION 2 BYPASS VALVE
V-E501	12	GV	MANUAL	LEFT	CONTROL STATION 2 VALVE
V-E502	12	GV	MANUAL	LEFT	CONTROL STATION 2 VALVE
V-E503	12	GV	MANUAL	LEFT	CONTROL STATION 2 VALVE
V-E504	12	GV	MANUAL	LEFT	CONTROL STATION 2 VALVE
V-E505	16	BU	MANUAL	LEFT	ISOLATION VALVE
V-E600	16	BU	MANUAL	LEFT	ISOLATES SURGE TANK
V-E700	2	TAP	MANUAL	LEFT	FACILITY WATER SERVICE CHLORINE/DISPENSER

V-XXXX - EXISTING VALVE
V-PXXX - PROPOSED VALVE

LEGEND

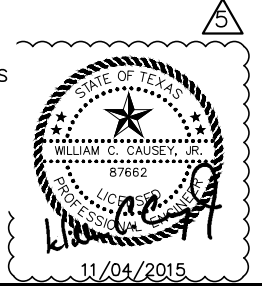
- PHASE I
- PHASE II
- PHASE III
- PHASE IV
- PHASE V

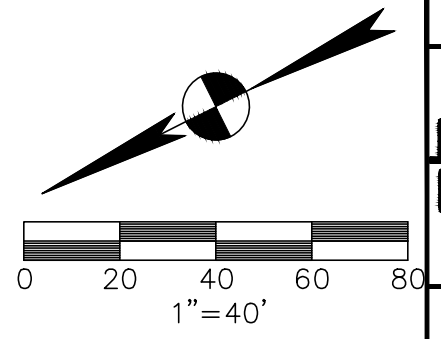
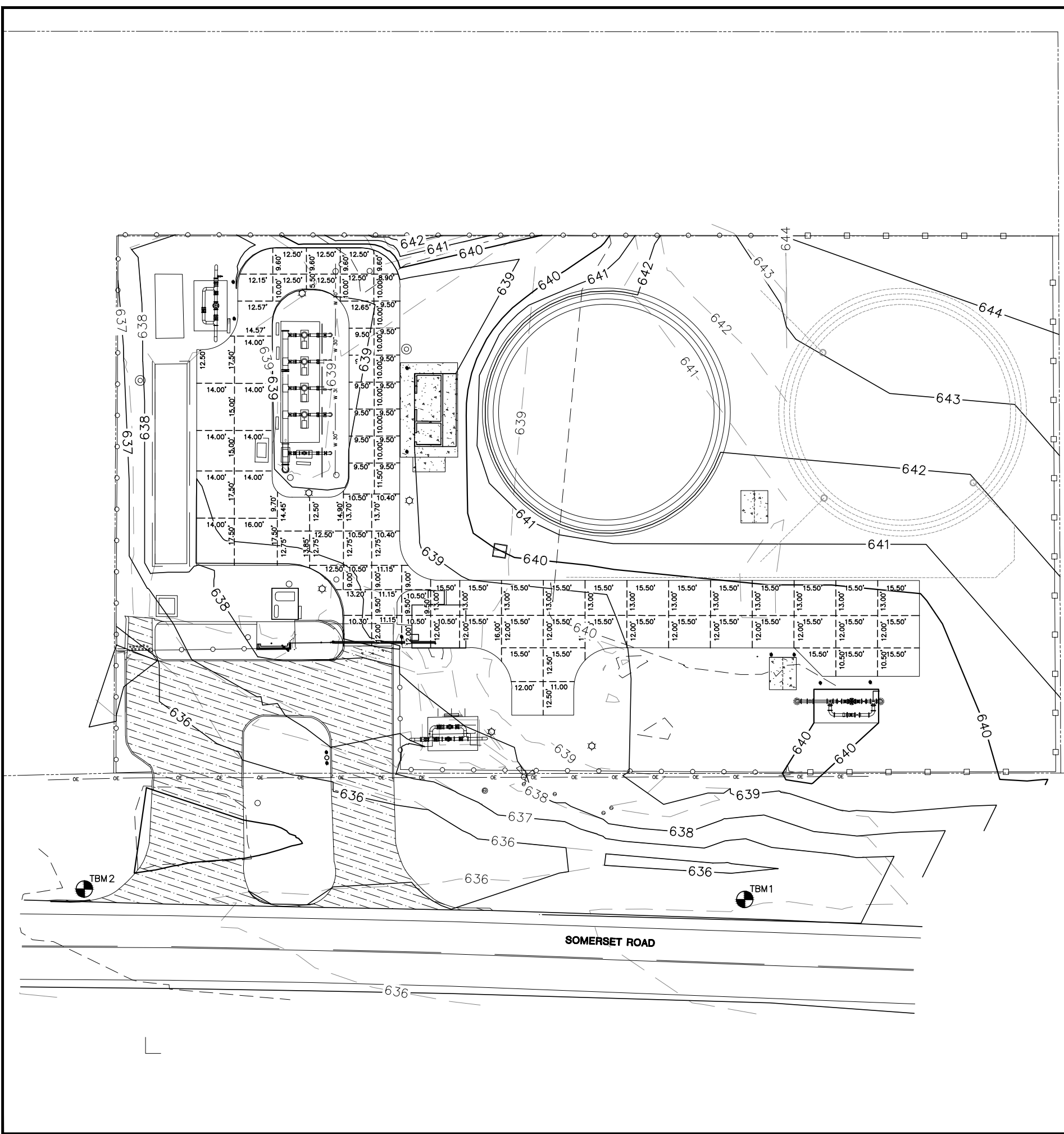
- PHASE V**
- RE-GRADING OF SITE AND PLACEMENT OF NEW CONCRETE PAVEMENT.
 - INSTALL LANDSCAPING, LIGHTING, AND SECURITY.
 - INSTALL NEW FENCING AND GATES.
 - CLEANUP SITE AND REMOVAL OF SWPPP DEVICES.



NOTES:

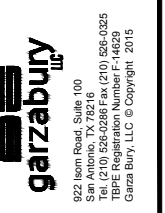
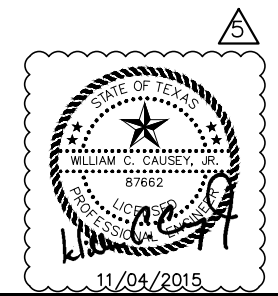
- THE CONTRACTOR SHALL FIELD VERIFY THE LOCATIONS, SIZE, DEPTHS, AND MATERIALS OF ALL EXISTING UNDERGROUND UTILITIES AND DRAINAGE STRUCTURES AT LEAST 48 HOURS PRIOR TO SUBMITTING SHOP DRAWINGS AND COMMENCING FABRICATION OF MATERIALS. THE FIELD VERIFICATION WILL BE PERFORMED AT NO COST TO THE OWNER, WHETHER SHOWN ON PLAN OR NOT, FINDINGS SHALL BE DOCUMENTED BY THE CONTRACTOR IN RECORD DRAWINGS. THE CONTRACTOR SHALL NOTIFY THE ENGINEER AND SAWS INSPECTOR OF ANY CONFLICTS WITH PROPOSED WORK. THE CONTRACTOR AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
- THE SOMERSET PUMP STATION MUST REMAIN OPERATIONAL AT ALL TIMES UNLESS A TEMPORARY SHUT-DOWN IS APPROVED IN WRITING BY SAWS PRIOR TO THE SHUT-DOWN. FOR EACH TIE-IN, THE CONTRACTOR SHALL BE ABLE TO SHUT-DOWN THE EXISTING TANK FOR A MAXIMUM OF THREE (3) HOURS. THE CONTRACTOR MUST SEND A SHUT-DOWN NOTICE TO SAWS AT LEAST 60 DAYS PRIOR TO ANY SHUT-DOWN.





POINT #	NORTHING	EASTING	ELEVATION
TBM1	13632599.0400	2079010.5400	636.53
TBM2	13632816.1100	2079124.0400	635.14

NOTE:
 LANDSCAPE NOTE.
 1. GRADING TO PROVIDE DRAINAGE TOWARD TXDOT R.O.W.
 2. GRADING TO PREVENT FLOW ONTO ADJACENT PROPERTIES

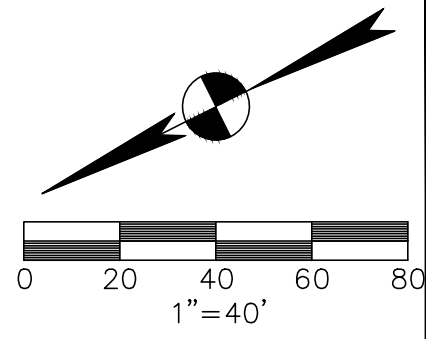


W.C.C.	11.04.2015	No.	Revision	Approved	Date

SAN ANTONIO WATER SYSTEM
 DSP CLAYTON TANK REPLACEMENT PROJECT
 GRADING PLAN & PAVEMENT CONTROL JOINT LAYOUT

DATE:	OCTOBER 2015
DESIGNED BY:	BAL
DRAWN BY:	FJC
REVIEWED BY:	WCC
GB PRJ.#:	103187-00001

Date: Nov 04, 2015, 11:33am User ID: fcantero
 File: G:\103187\00001\10318700001SPS_PROPPLAN.dwg



SAWS JOB NO.
P-14-6101

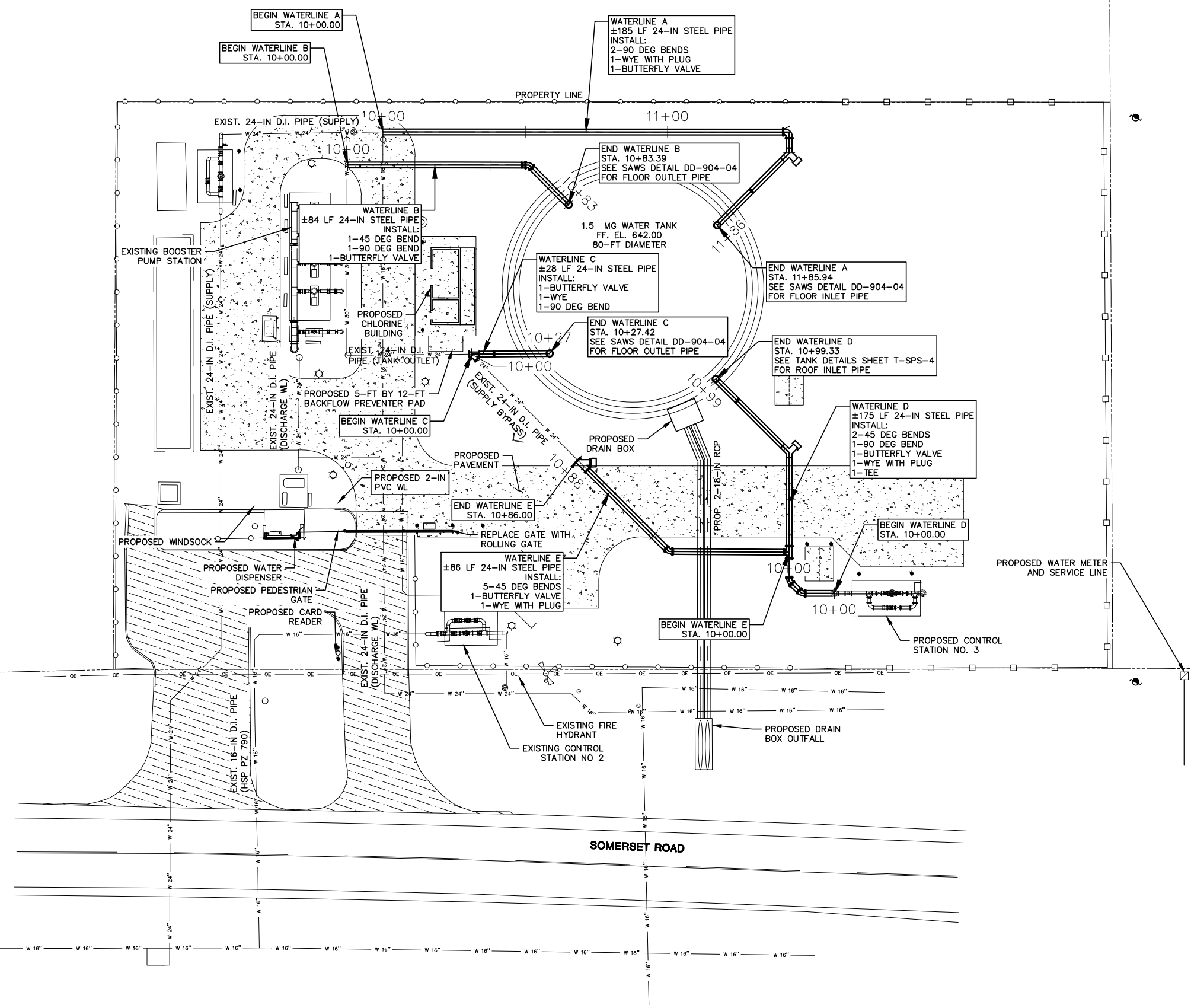
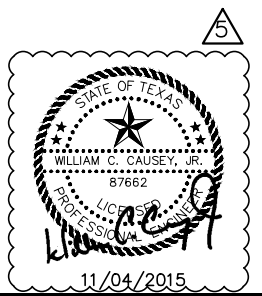


ADDENDUM NO.	5 P.E. SEAL DATE	W.C.C.	11.04.2015
No.	Revision	Approved	Date

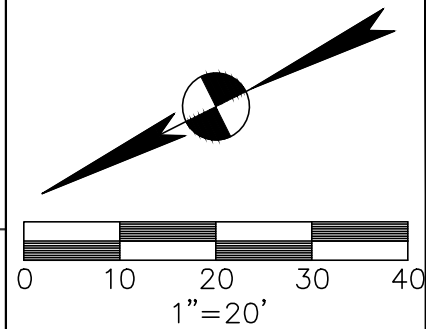
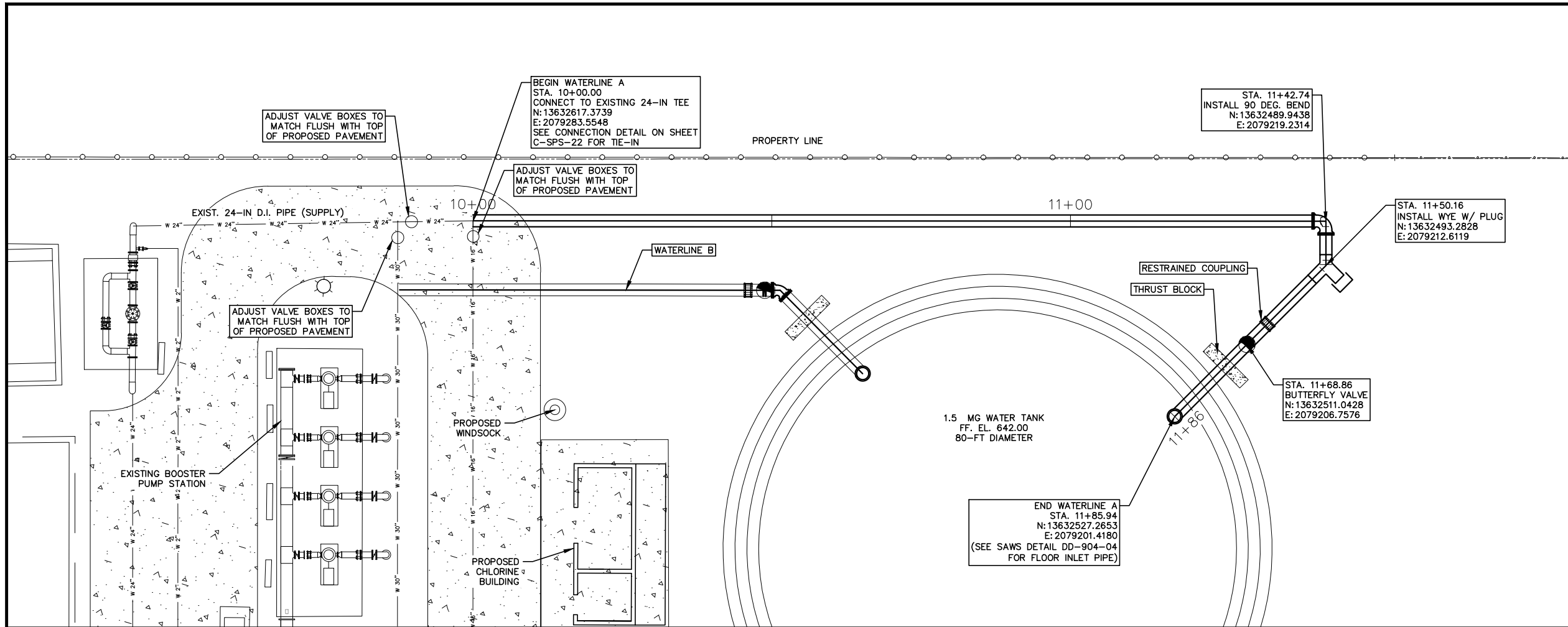
SAN ANTONIO WATER SYSTEM
 DSP CLAYTON TANK REPLACEMENT PROJECT
 PROPOSED YARD PIPING PLAN

DATE: OCTOBER 2015	DESIGNED BY: BAL	DRAWN BY: FJC	REVIEWED BY: WCC
GB PRJ.#: 103187-00001			

SHEET
C-SPS-14
SHEET 18 OF 99



Date: Nov. 04, 2015, 11:34am User ID: fcantero
 File: G:\103187\00001\10318700001SPS_WPP01.dwg

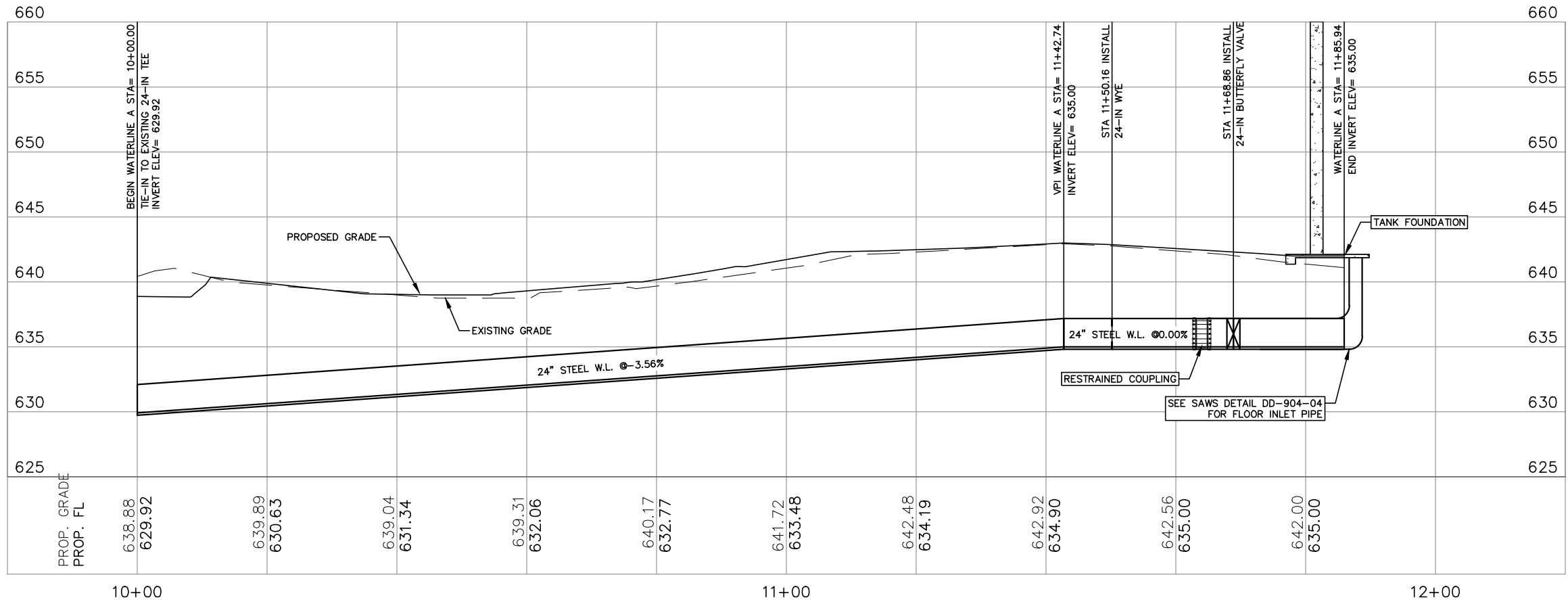


SAWS JOB NO.
P-14-6101

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 TUBE Registration Number F-14629
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SAN ANTONIO
 WATER SYSTEM

5	ADDENDUM NO.	5	P.E. SEAL DATE	W.C.C.	11.04.2015
No.	Revision	Approved	Date		



- NOTES:**
1. PROPOSED BUTTERFLY VALVES SHALL BE A MINIMUM OF 10- FEET FROM THE GROUND STORAGE FOUNDATION.
 2. NO FLANGE COUPLINGS ADAPTERS OR HARNESS RESTRAINED COUPLINGS SHALL BE INSTALLED BETWEEN THE GROUND STORAGE TANK AND ANY BUTTERFLY VALVES.

PROFILE WATERLINE A
 VERTICAL SCALE: 1" = 10'

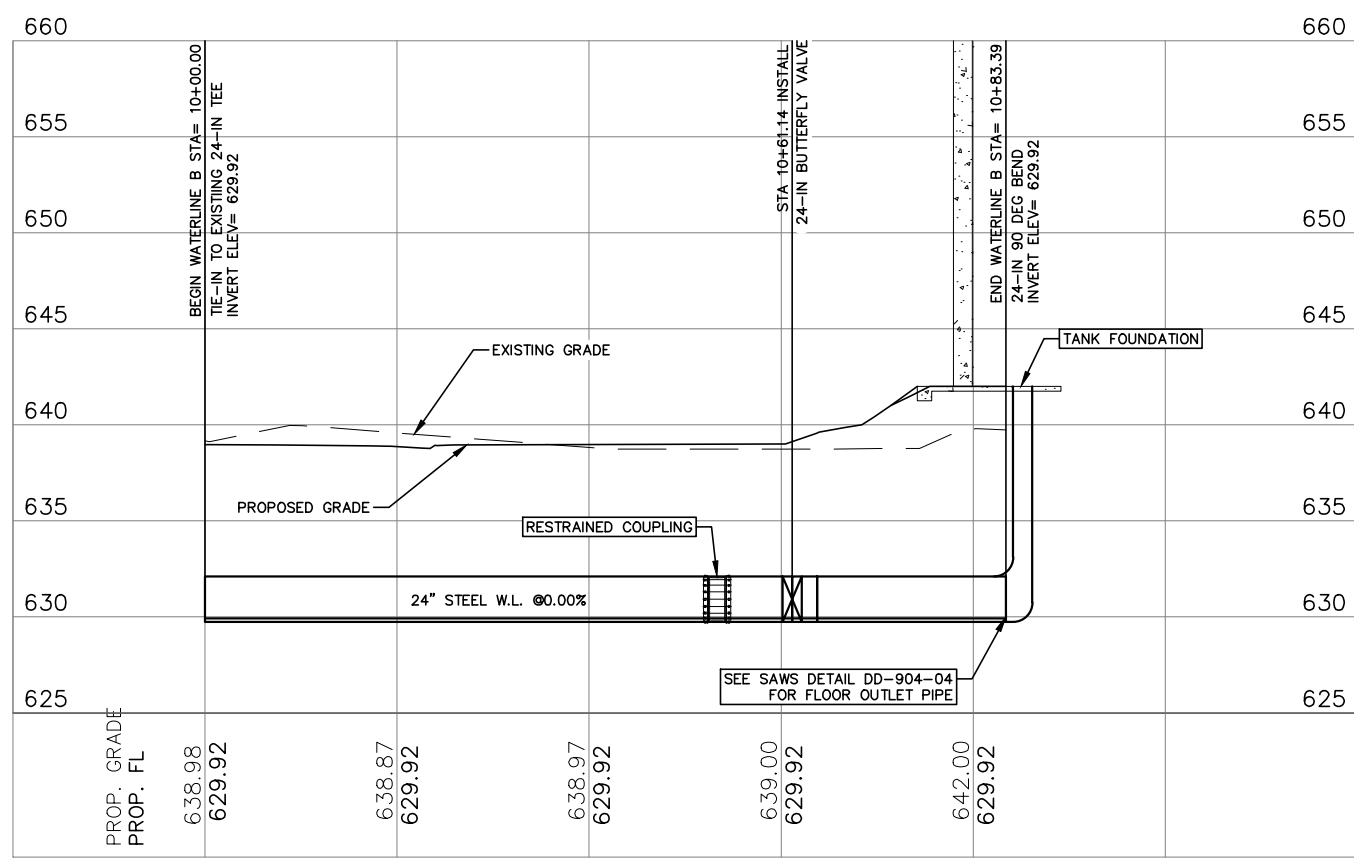
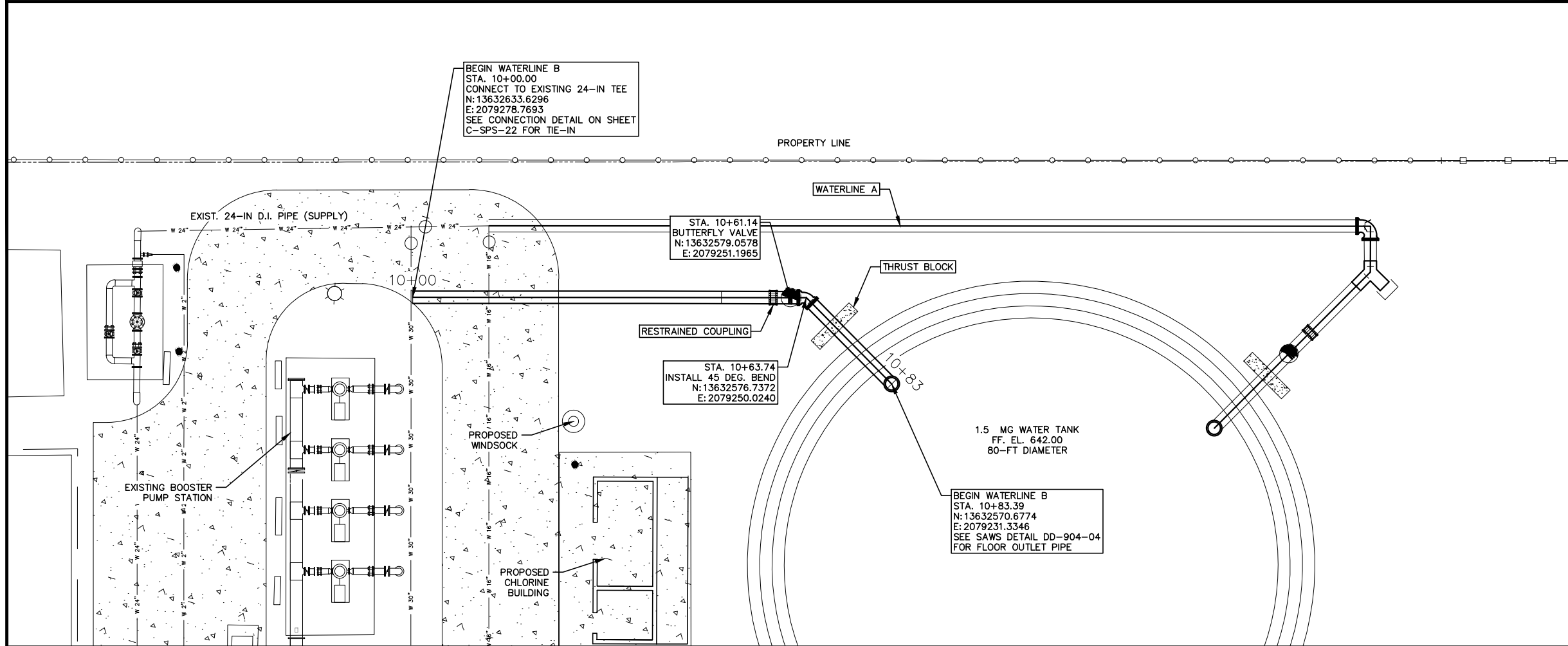


SAN ANTONIO WATER SYSTEM
 DSP CLAYTON TANK REPLACEMENT PROJECT
 PROPOSED YARD PIPING
 PLAN & PROFILE I

DATE: OCTOBER 2015
 DESIGNED BY: BAL
 DRAWN BY: FJC
 REVIEWED BY: WCC
 GB PRJ.#: 103187-00001

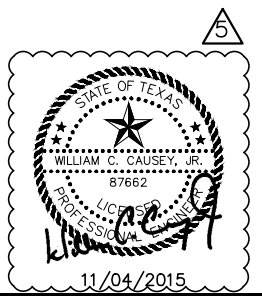
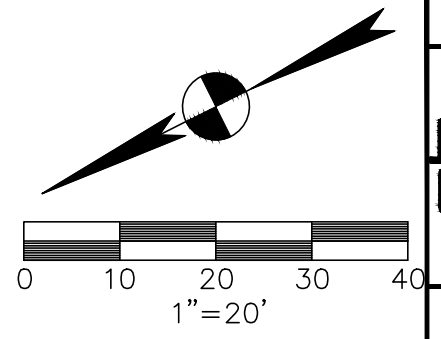
SHEET
 C-SPS-15
 SHEET 19 OF 99

Date: Nov. 04, 2015, 11:35am User ID: fcantero
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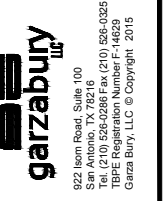


PROFILE WATERLINE B
 VERTICAL SCALE: 1" = 10'

- NOTES:**
- PROPOSED BUTTERFLY VALVES SHALL BE A MINIMUM OF 10- FEET FROM THE GROUND STORAGE FOUNDATION.
 - NO FLANGE COUPLINGS ADAPTERS OR HARNESS RESTRAINED COUPLINGS SHALL BE INSTALLED BETWEEN THE GROUND STORAGE TANK AND ANY BUTTERFLY VALVES.



SAWS JOB NO.
 P-14-6101



SAN ANTONIO WATER SYSTEM

ADDENDUM NO.	5 P.E. SEAL DATE	W.C.C.	11.04.2015
No.	Revision	Approved	Date

SAN ANTONIO WATER SYSTEM
 DSP CLAYTON TANK REPLACEMENT PROJECT
 PROPOSED YARD PIPING
 PLAN & PROFILE II

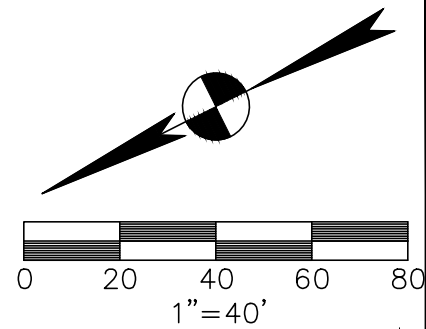
DATE: OCTOBER 2015	DESIGNED BY: BAL
DRAWN BY: FJC	REVIEWED BY: WCC
GB PRJ.#: 103187-00001	

SHEET
 C-SPS-16
 SHEET 20 OF 99

POINT #	NORTHING	EASTING	DESCRIPTION	ELEVATION
1	13632567.3909'	2079126.4303'	PI PAVEMENT	638.81
2	13632488.0247'	2079086.9859'	PI PAVEMENT	639.10
3	13632504.0034'	2079055.2852'	PI PAVEMENT	638.88
4	13632536.1157'	2079071.4714'	PI PAVEMENT	638.72
5	13632540.7009'	2079085.5410'	PI PAVEMENT	638.66
6	13632599.9874'	2079115.1625'	PC PAVEMENT	638.41
7	13632620.5000'	2079108.9034'	PT PAVEMENT	638.31
8	13632624.9759'	2079100.0236'	PI PAVEMENT	638.27
9	13632645.5149'	2079110.3763'	PI PAVEMENT	638.27
10	13632641.1009'	2079119.1336'	PC PAVEMENT	638.31
11	13632648.2359'	2079139.7158'	PT PAVEMENT	638.40
12	13632670.5656'	2079150.9994'	PI PAVEMENT	638.30
13	13632696.5792'	2079159.2476'	PC PAVEMENT	637.75
14	13632689.8845'	2079161.5194'	PT PAVEMENT	637.75
15	13632687.5083'	2079165.1414'	PC PAVEMENT	637.85
16	13632690.3250'	2079171.7393'	PT PAVEMENT	637.81
17	13632684.9963'	2079170.5049'	PC PAVEMENT	637.85
18	13632694.3402'	2079197.1228'	PT PAVEMENT	637.85
19	13632724.9461'	2079212.5306'	PI PAVEMENT	637.78
20	13632669.4790'	2079288.7270'	PT PAVEMENT	638.57
21	13632645.4534'	2079304.2077'	PT PAVEMENT	638.90
22	13632617.6616'	2079290.2194'	PC PAVEMENT	638.90
23	13632611.2119'	2079270.7814'	PT PAVEMENT	638.79
24	13632653.6222'	2079186.6424'	PC PAVEMENT	638.29
25	13632646.3070'	2079166.7676'	PT PAVEMENT	638.41
26	13632685.2098'	2079229.1698'	PT PAVEMENT	638.45
27	13632659.5556'	2079279.8680'	PC PAVEMENT	638.73
28	13632642.1557'	2079285.5787'	PT PAVEMENT	638.83
29	13632639.9296'	2079284.4404'	PC PAVEMENT	638.83
30	13632634.2176'	2079267.0490'	PT PAVEMENT	639.23
31	13632659.7271'	2079216.4070'	PC PAVEMENT	638.95
32	13632669.7981'	2079213.0375'	PT PAVEMENT	638.45
33	13632681.9798'	2079219.1694'	PC PAVEMENT	638.45
39	13632688.9429'	2079283.9712'	PC PAVEMENT	638.34

LEGEND

- RIGHT-OF-WAY
- - - EXISTING PROPERTY LINE
- PROPOSED PROPERTY LINE
- - - EXISTING CHAINLINK FENCE
- - - PROPOSED CHAINLINK FENCE
- UT — BURIED TELEPHONE
- OE — OVERHEAD ELECTRIC
- ▨ PROPOSED CONCRETE PAVEMENT
- ▨ EXISTING CONCRETE PAVEMENT
- ① HORIZONTAL CONTROL
- BENCHMARK



SAWS JOB NO.
P-14-6101

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SAN ANTONIO
WATER SYSTEM

W.C.C.	11.04.2015	No.	Revision	Approved	Date
5	ADDENDUM NO. 5 P.E. SEAL DATE				

SAN ANTONIO WATER SYSTEM
DSP CLAYTON TANK REPLACEMENT PROJECT

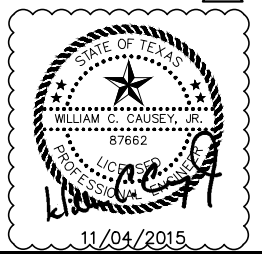
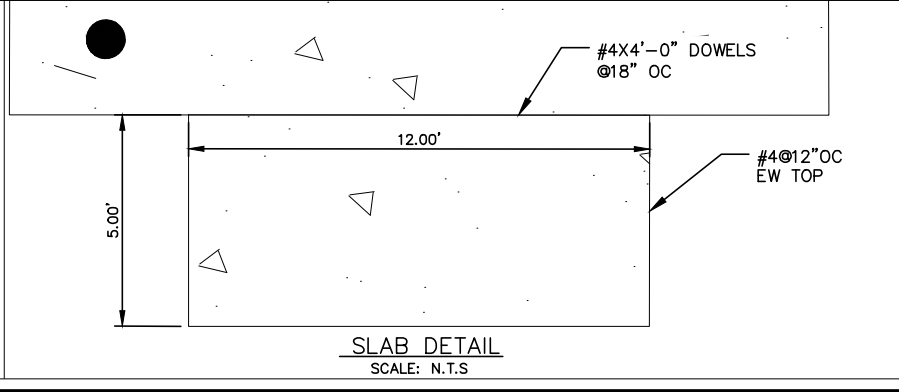
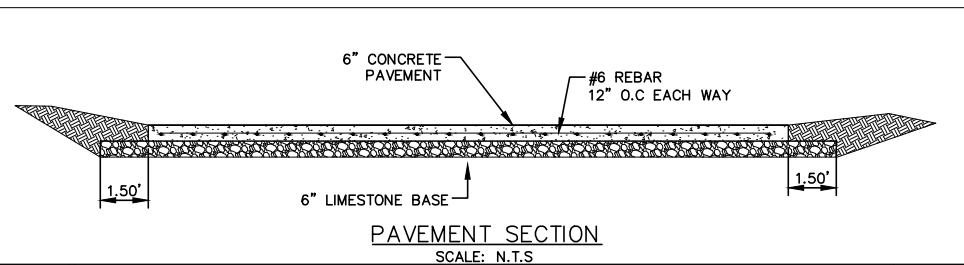
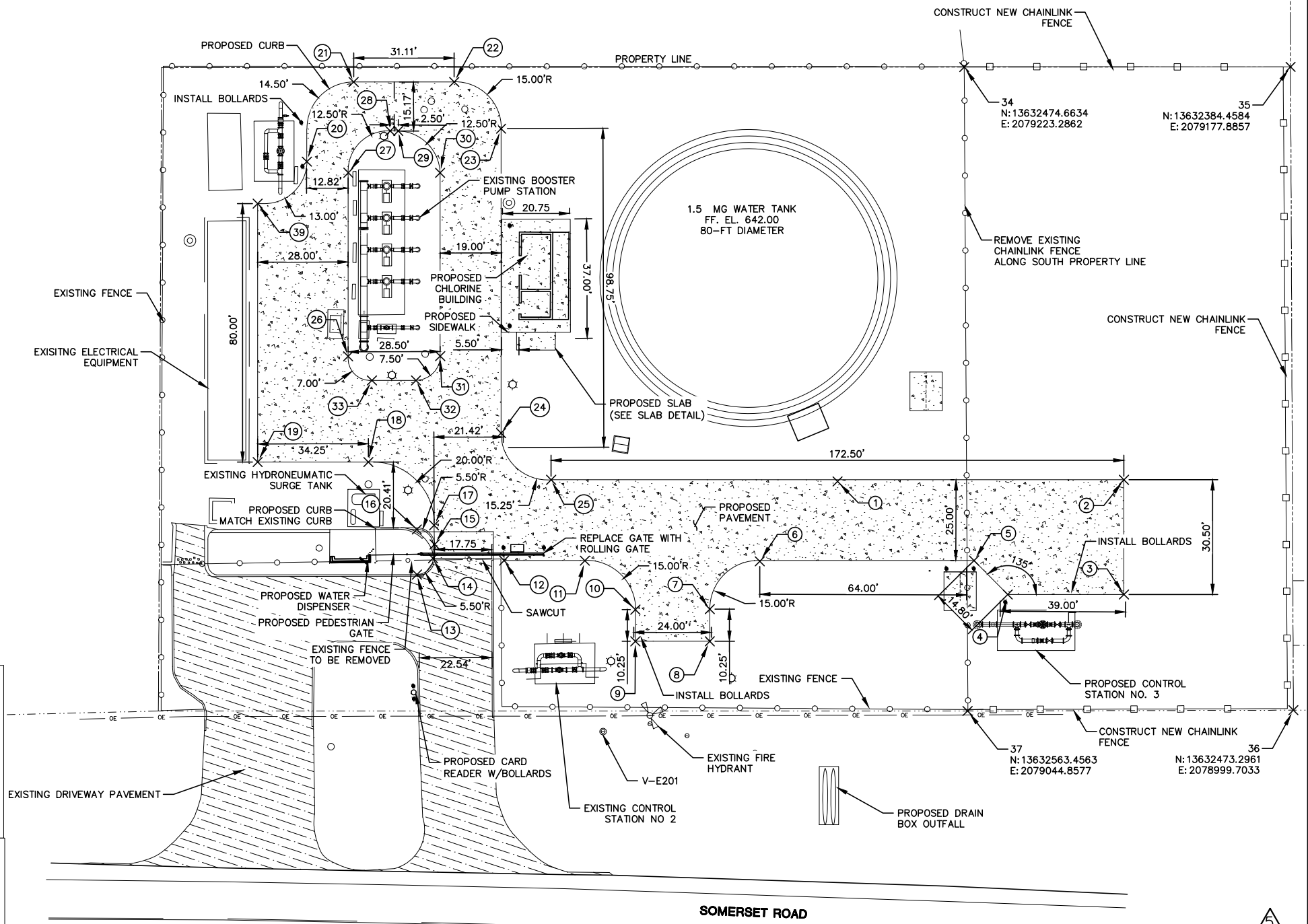
PAVEMENT & FENCING PLAN

DATE:	OCTOBER 2015
DESIGNED BY:	BAL
DRAWN BY:	FJC
REVIEWED BY:	WCC
GB PRJ.#:	103187-00001

SHEET
C-SPS-21
SHEET 25 OF 99

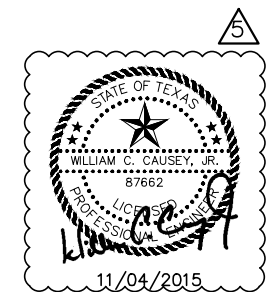
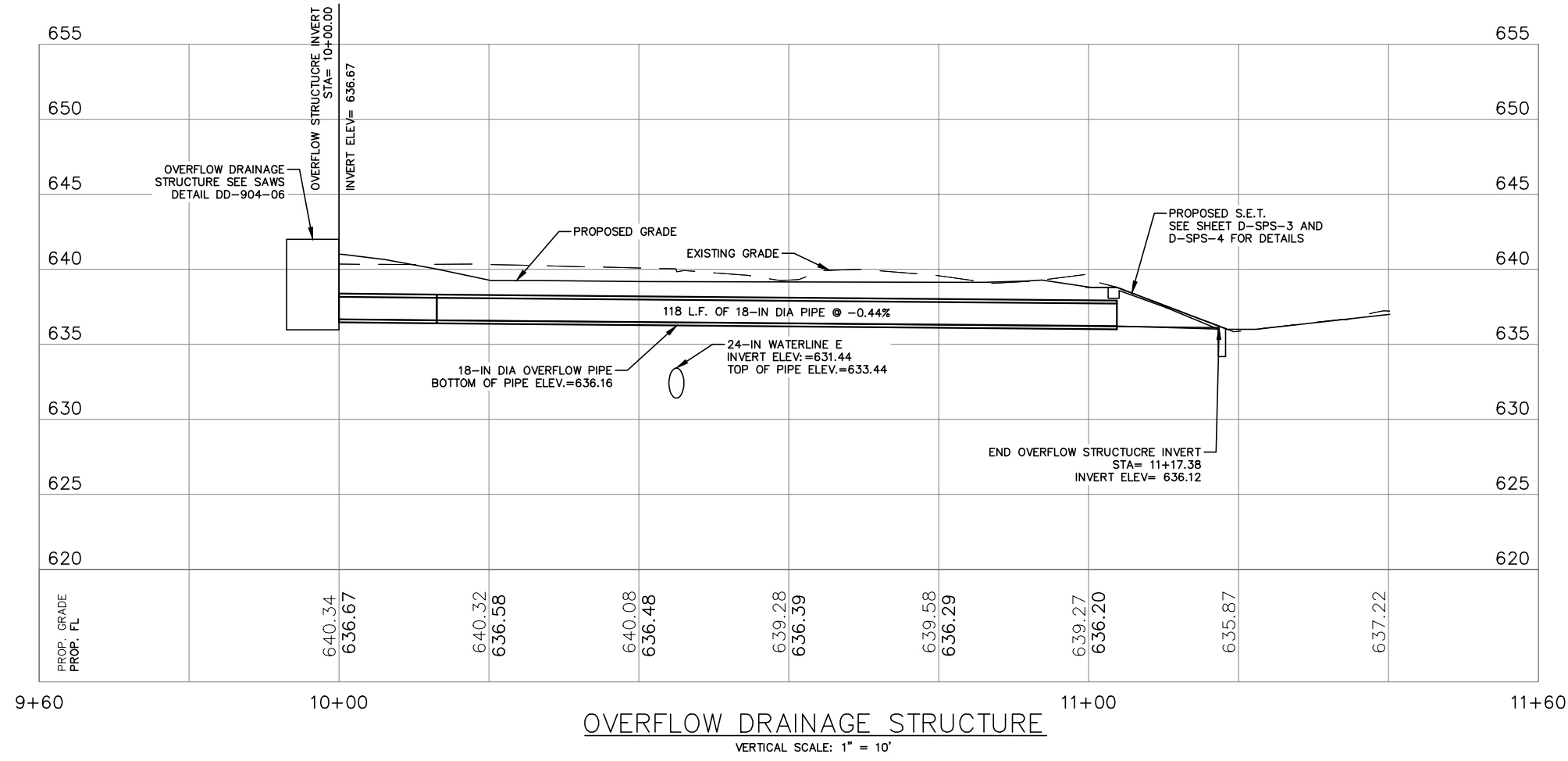
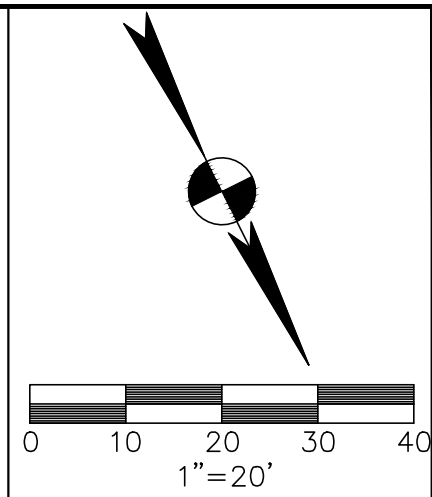
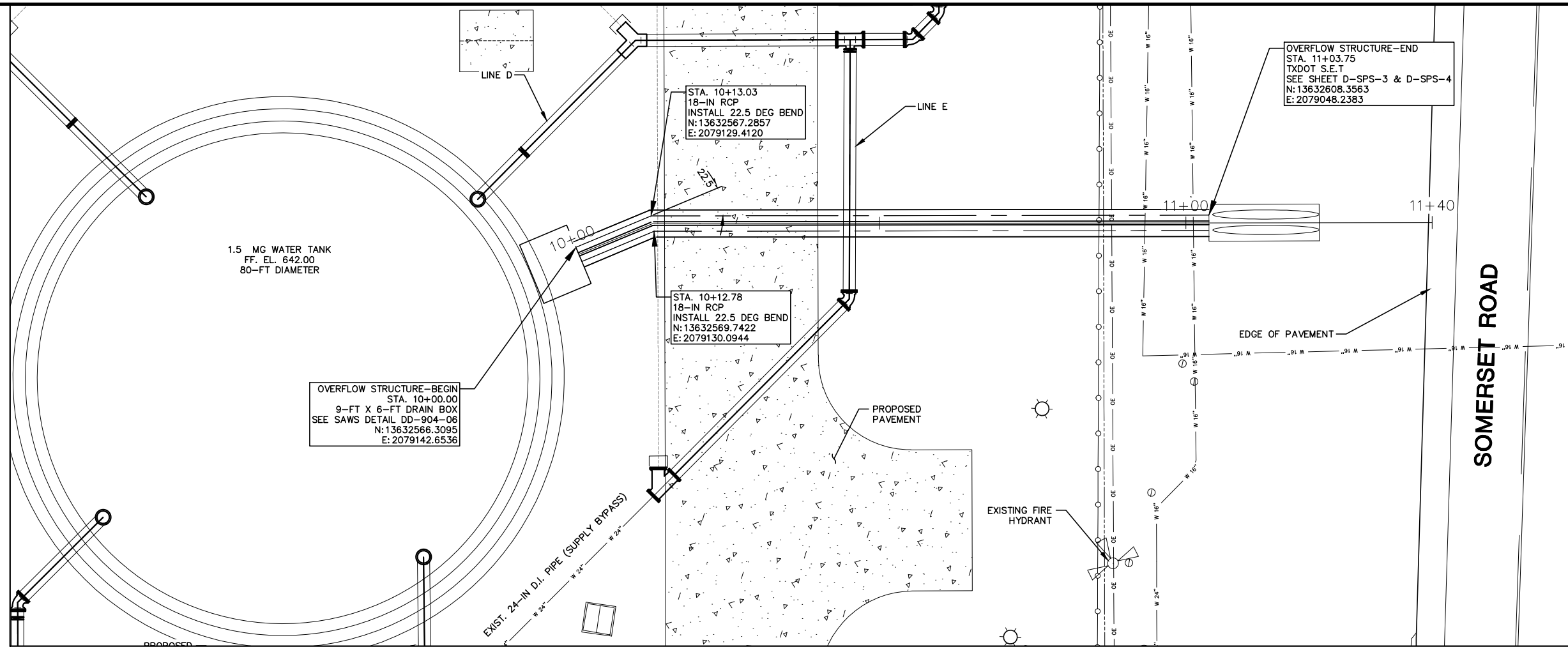
NOTES:

- CONCRETE PAVEMENT SHALL BE CLASS A, 3000 PSI IN 28 DAYS, CONSTRUCTED IN ACCORDANCE WITH CITY OF SAN ANTONIO CONCRETE DRIVEWAY STANDARD FOR COMMERCIAL DRIVEWAYS.
- FOR CONCRETE PAVEMENT, THE RATIO OF SLAB LENGTH-TO-WIDTH SHALL NOT EXCEED 1.25. JOINT SPACING SHALL BE A MAXIMUM OF 15-FOOT LONGITUDINAL AND 15-FOOT TRANSVERSE.
- REINFORCING STEEL SHALL BE GRADE 60 STEEL CONFORMING TO ASTM A615 AND CONSTRUCTED IN ACCORDANCE WITH CITY OF SAN ANTONIO CONCRETE DRIVEWAY STANDARD FOR COMMERCIAL DRIVEWAY.
- ALL BUTTERFLY VALVES MANHOLES ARE TO BE ADJUSTED TO MATCH TOP OF PAVEMENT ELEVATION.



Date: Nov 04, 2015, 12:27pm User ID: fcontero
File: G:\103187\00001\10318700001\SPS_PVP01.dwg

Date: Nov 04, 2015, 11:37am User ID: fcantero
 File: G:\103187\00001\10318700001SPS_SPP03.dwg



SAWS JOB NO.
 P-14-6101

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SAN ANTONIO WATER SYSTEM

5 ADDENDUM NO. 5 P.E. SEAL DATE W.C.C. 11.04.2015

SAN ANTONIO WATER SYSTEM
 DSP CLAYTON TANK REPLACEMENT PROJECT

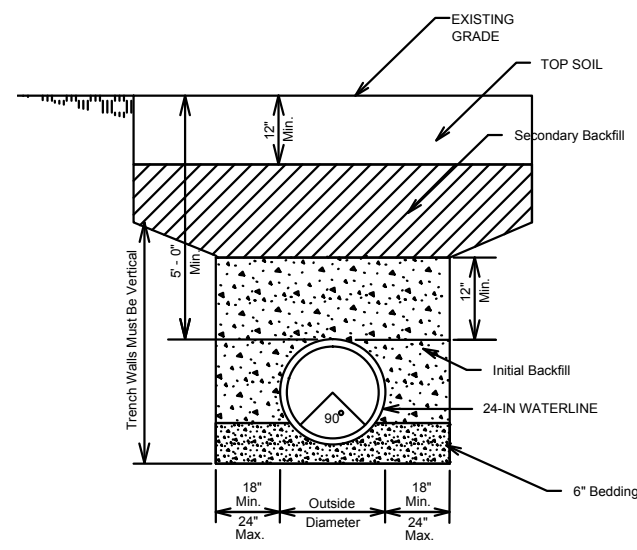
DRAINAGE STRUCTURE
 PIPE PLAN & PROFILE

DATE: OCTOBER 2015 DESIGNED BY: BAL DRAWN BY: FJC REVIEWED BY: WCC
 CB PRJ.#: 103187-00001

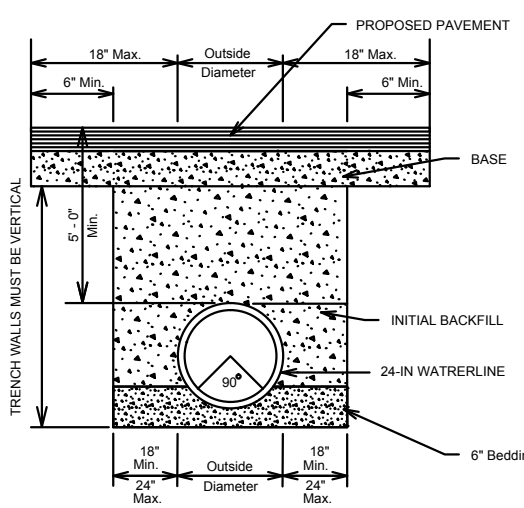
SHEET
 C-SPS-22
 SHEET 26 OF 99

W.C.C.	11.04.2015	Date
5	ADDENDUM NO. 5 P.E. SEAL DATE	Approved
		Revision
		No.

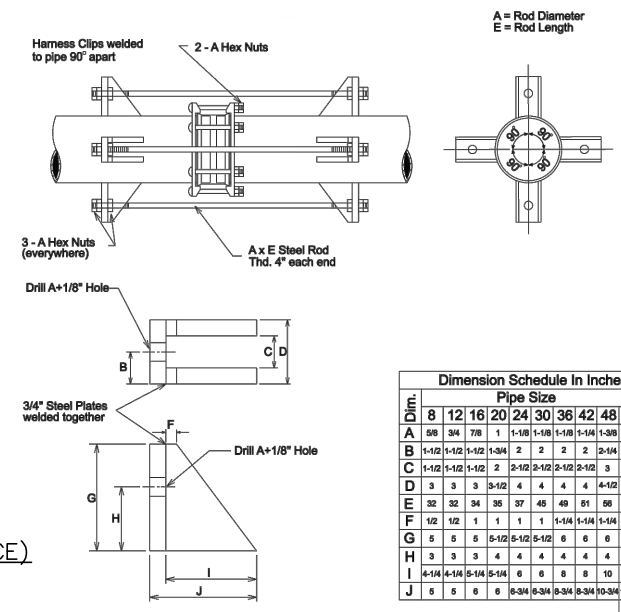
DATE: OCTOBER 2015	DESIGNED BY: BAL	DESIGNED BY: FJC	REVIEWED BY: WCC
GB PRJ.#: 103187-00001			



TYPICAL PIPE TRENCH (SOIL SURFACE)
SCALE: N.T.S.



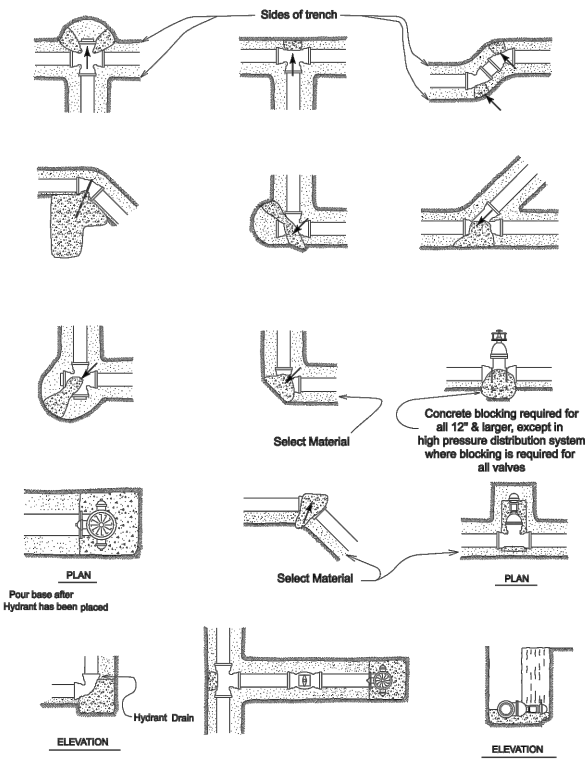
TYPICAL PIPE TRENCH (PAVEMENT SURFACE)
SCALE: N.T.S.



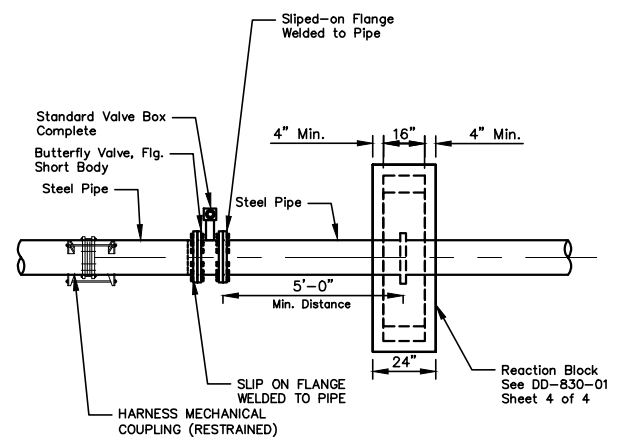
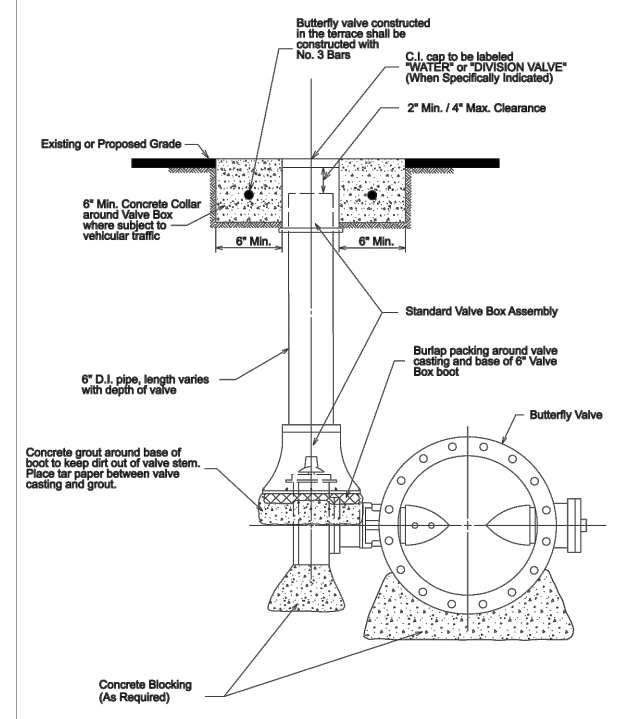
COUPLING HARNESS
SCALE: N.T.S.

Dim.	8	12	16	20	24	30	36	42	48	54
A	5/8	3/4	7/8	1	1-1/8	1-1/8	1-1/8	1-1/4	1-3/8	1-1/2
B	1-1/2	1-1/2	1-1/2	1-3/4	2	2	2	2	2-1/4	2-1/4
C	1-1/2	1-1/2	1-1/2	2	2-1/2	2-1/2	2-1/2	2-1/2	3	3
D	3	3	3-1/2	4	4	4	4	4-1/2	4-1/2	4-1/2
E	3	3	3	3	3	3	3	3	3	3
F	1/2	1/2	1	1	1	1-1/4	1-1/4	1-1/4	1-1/4	1-1/4
G	5	5	5	5-1/2	5-1/2	5-1/2	5-1/2	5-1/2	5-1/2	5-1/2
H	3	3	3	4	4	4	4	4	4	4
I	4-1/4	4-1/4	4-1/4	4-1/4	4-1/4	4-1/4	4-1/4	4-1/4	4-1/4	4-1/4
J	5	5	5	5	5	5	5	5	5	5

PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	COUPLING HARNESS STEEL PIPE	APPROVED MARCH 2008	REVISED APRIL 2014
		DD-816-01	SHEET 1 OF 1



PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	THRUST BLOCKS FOR FITTINGS (WATER ONLY)	APPROVED MARCH 2008	REVISED APRIL 2014
		DD-839-01	SHEET 1 OF 2



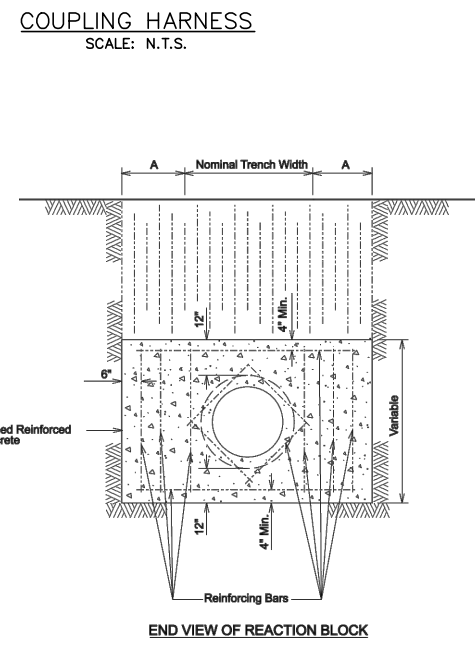
TYPICAL BUTTERFLY VALVE
ARRANGEMENT FOR 20"
AND LARGE STEEL MAIN
SCALE: N.T.S.

PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	INSTALLATION OF BURIED BUTTERFLY VALVE WITH VALVE BOX COMPLETE	APPROVED MARCH 2008	REVISED APRIL 2014
		DD-830-01	SHEET 1 OF 4

DATE: Nov. 04, 2015, 11:38am	User ID: fcontero
File: G:\103187\00001\10318700001SPS_PIPE_DETAILS.dwg	

PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	CONCRETE REACTION BLOCK FOR BUTTERFLY VALVES & BLOW-OFF ASSEMBLIES ON D.I. & C.S.C. MAINS	APPROVED MARCH 2008	REVISED APRIL 2014
		DD-830-01	SHEET 4 OF 4

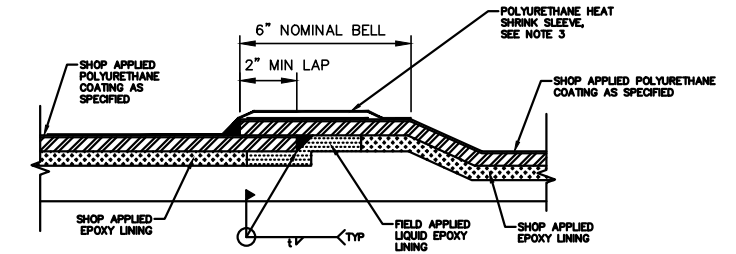
DATE: OCTOBER 2015	DESIGNED BY: BAL	DESIGNED BY: FJC	REVIEWED BY: WCC
GB PRJ.#: 103187-00001			



Main Size	A (Min.)	Reinforcing Bar Size	Bearing Surface Required (in Sq. Ft.)
8"	12"	#4	3
8"	12"	#4	5
12"	18"	#4	8
16"	18"	#4	12
20"	28"	#5	16
24"	28"	#5	23
30"	36"	#5	35
36"	36"	#5	50
42"	36"	#5	70

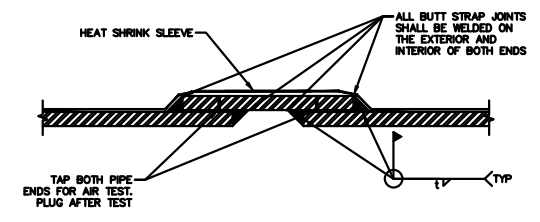
Note: Concrete shall be 3,000 psi.

BUTTERFLY VALVE
SCALE: N.T.S.



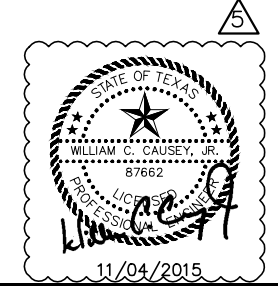
- NOTES:
- 2" MIN FROM BELL TANGENT TO WELD
 - WELD INSIDE AND OUTSIDE THE PIPE FOR PIPE DIAMETER 24" AND LARGER, AND OUTSIDE THE PIPE FOR DIAMETER SMALLER THAN 24"
 - POLYURETHANE HEAT SHRINK SLEEVE SHALL BE MANUFACTURED BY CANUSA

WELDED JOINT DETAIL
POLYURETHANE COATED STEEL PIPE
SCALE: N.T.S.



- NOTES:
- BUTT STRAPS TO BE FURNISHED IN TWO PIECES AND SHIPPED LOOSE FOR FIELD WELDING, BUTT STRAPS TO INCLUDE TABS TO ACCEPT ALL-THREAD FOR BOLTED CONNECTION TO FACILITATE FIELD LINE-UP AND WELDING.
 - 12" MAXIMUM LENGTH OF TYPICAL BUTT STRAP FOR FIELD CLOSING SECTION (SEE SPECIFICATIONS)
 - SEE JOINT DETAILS FOR TYPICAL LAP WELD ON POLYURETHANE COATED STEEL PIPE AND FOR ADDITIONAL INFORMATION ON COATINGS, LININGS AND OTHER REQUIREMENTS.
 - *"I" INDICATES THE THICKNESS OF THE STEEL PIPE AT THE SECTION WHERE USED.

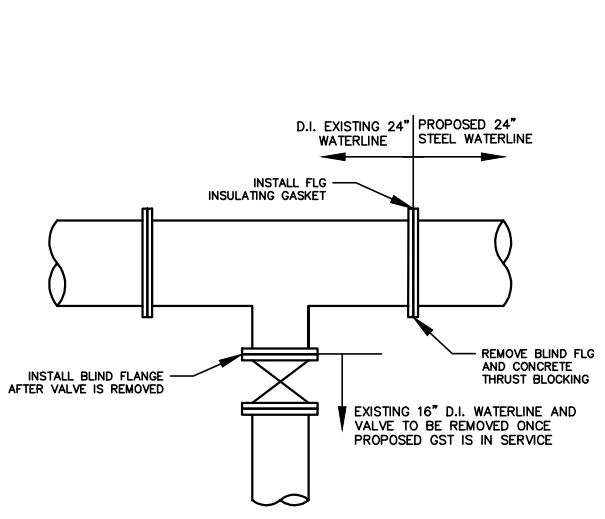
JOINT DETAIL WELDED BUTT STRAP
SCALE: N.T.S.



W.C.C.	11.04.2015
5	ADDENDUM NO. 5 P.E. SEAL DATE
No.	Revision
Approved	Date

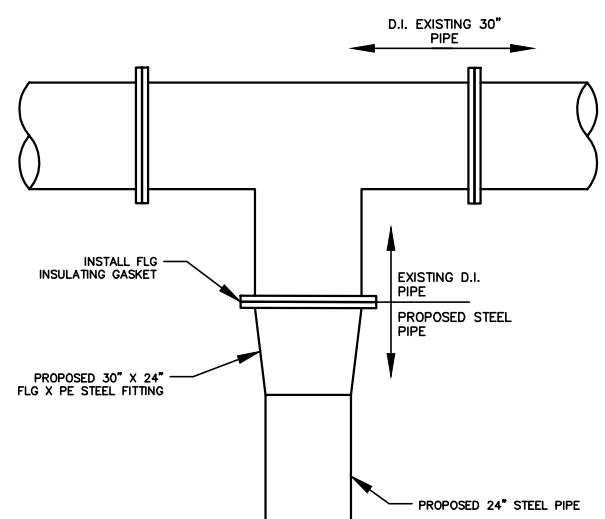
SAN ANTONIO WATER SYSTEM
DSP CLAYTON TANK REPLACEMENT PROJECT
WATERLINE DETAILS II

DATE: OCTOBER 2015	DESIGNED BY: BAL	DRAWN BY: FJC	REVIEWED BY: WCC	GB PRJ.#: 103187-00001
SHEET				C-SPS-24
SHEET 28 OF 99				



NOTES:
1. DEPTH OF EXISTING 24" WATERLINE IS APPROXIMATELY 10' +/-

WATERLINE "A" CONNECTION DETAIL
SCALE: NTS



NOTES:
1. DEPTH OF EXISTING 24" WATERLINE IS APPROXIMATELY 10' +/-

WATERLINE "B" CONNECTION DETAIL
SCALE: NTS

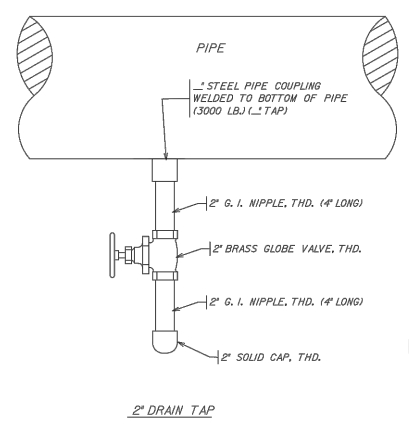
PROPERTY OF
SAN ANTONIO WATER SYSTEM
SAN ANTONIO, TEXAS

DRAIN & SAMPLE
TAP DETAIL

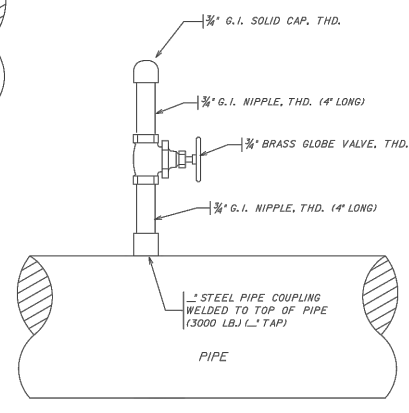
APPROVED: [Signature]
REVISED: [Signature]

SHEET
1 OF 4

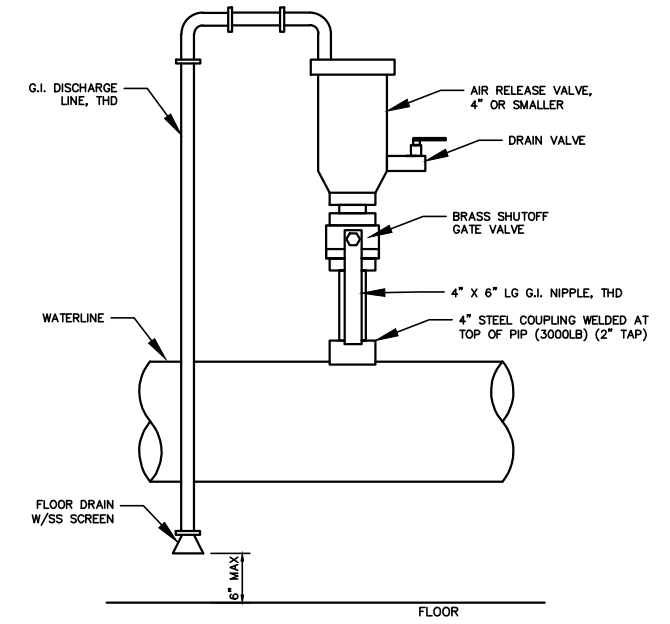
DD-901-03



2" DRAIN TAP

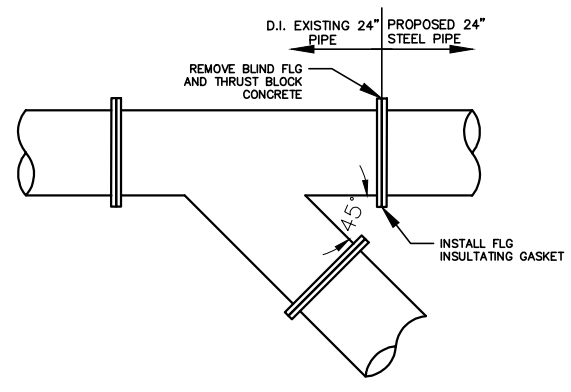


3/4" SAMPLE TAP



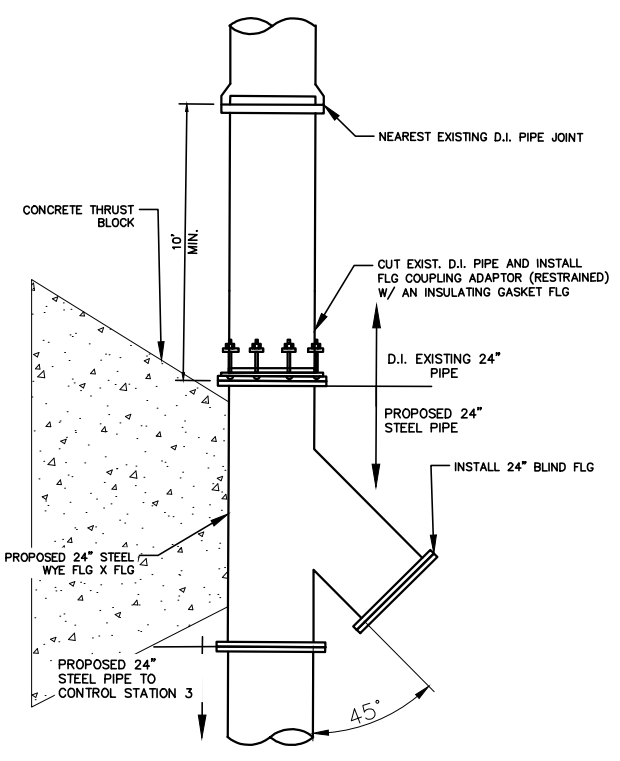
AIR RELEASE VALVE
SCALE: NTS

SIZE PIPE	TEES & DEAD ENDS	90° BENDS	45° BENDS	22.5° BENDS
6"	3	4	2	1
8"	4	6	4	2
12"	10	14	8	4
16"	18	25	14	7
20"	32	42	26	13



NOTES:
1. DEPTH OF EXISTING 24" WATERLINE IS APPROXIMATELY 10' +/-

WATERLINE "C" CONNECTION DETAIL
SCALE: NTS



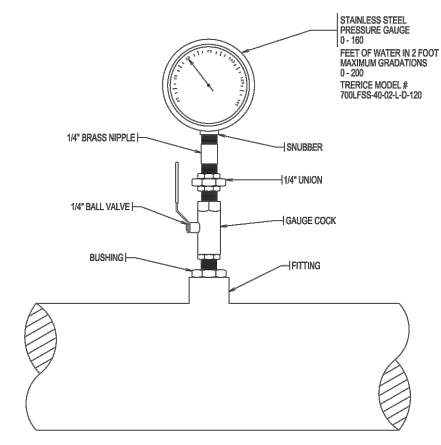
WATERLINE "E" CONNECTION DETAIL
SCALE: NTS

NOTE:
1. ALL GAUGES TO BE GLYCOL FILLED AT 4" MIN.
2. ALL GAUGES MUST READ PRESSURE IN POUNDS PER SQUARE INCH (PSI) AND FEET OF WATER.

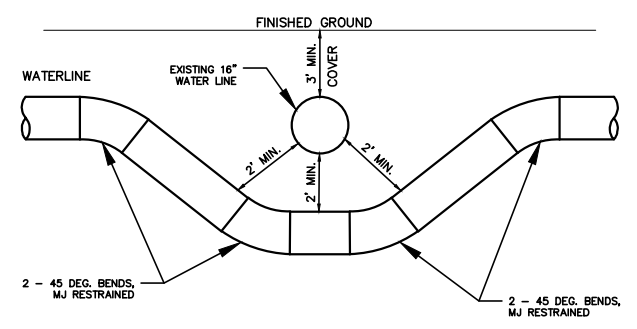
DD-903-22
SHEET 1 OF 1

SAN ANTONIO WATER SYSTEM
SAN ANTONIO, TEXAS

APPROVED: [Signature]
MARCH 2011
REVISED: [Signature]

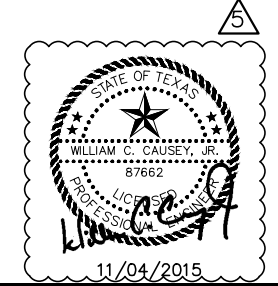


PRESSURE GAUGE



NOTES:
1. CONTRACTOR TO MAINTAIN 2' MINIMUM CLEARANCE BETWEEN EXISTING WATER LINE AND PROPOSED WATER LINE AT ALL TIMES.
2. ALL BENDS SHALL BE RESTRAINED.

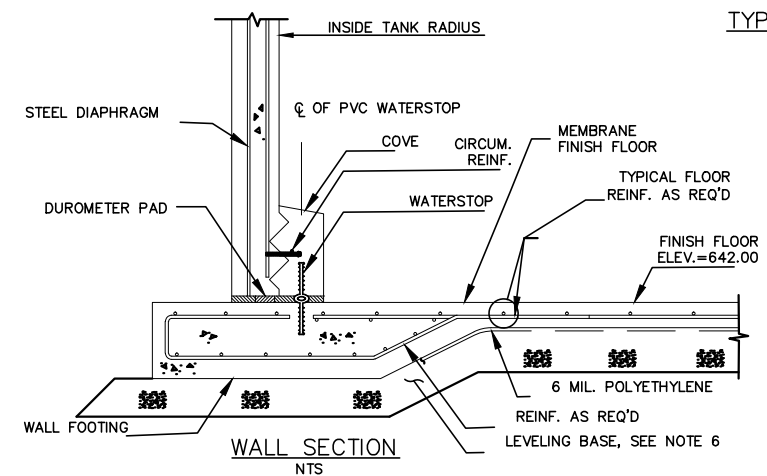
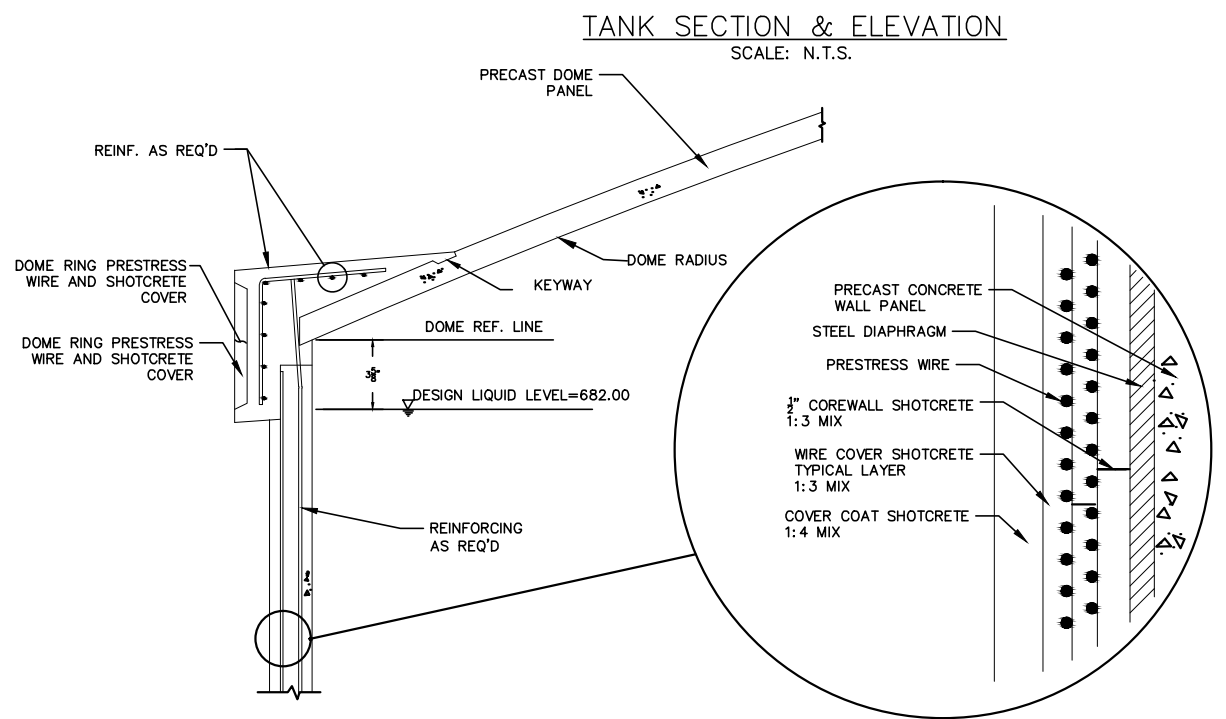
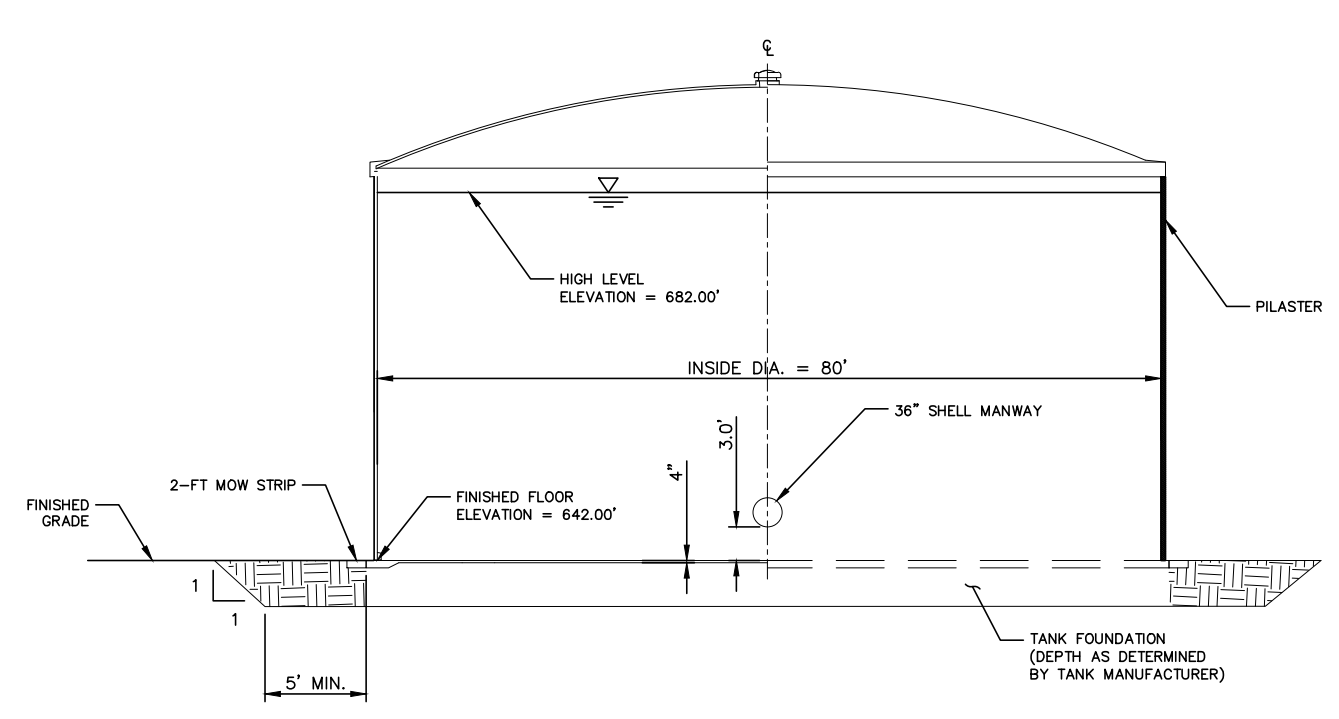
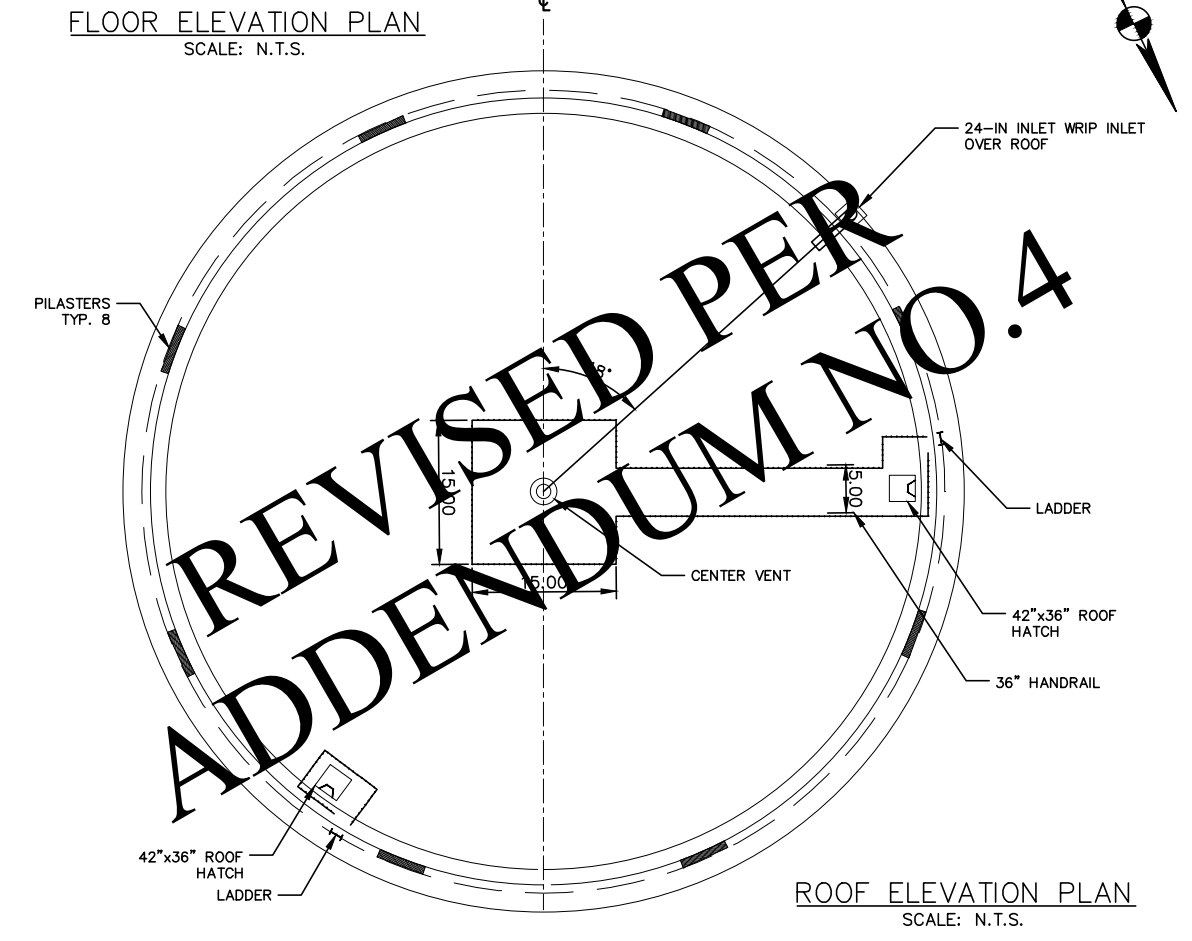
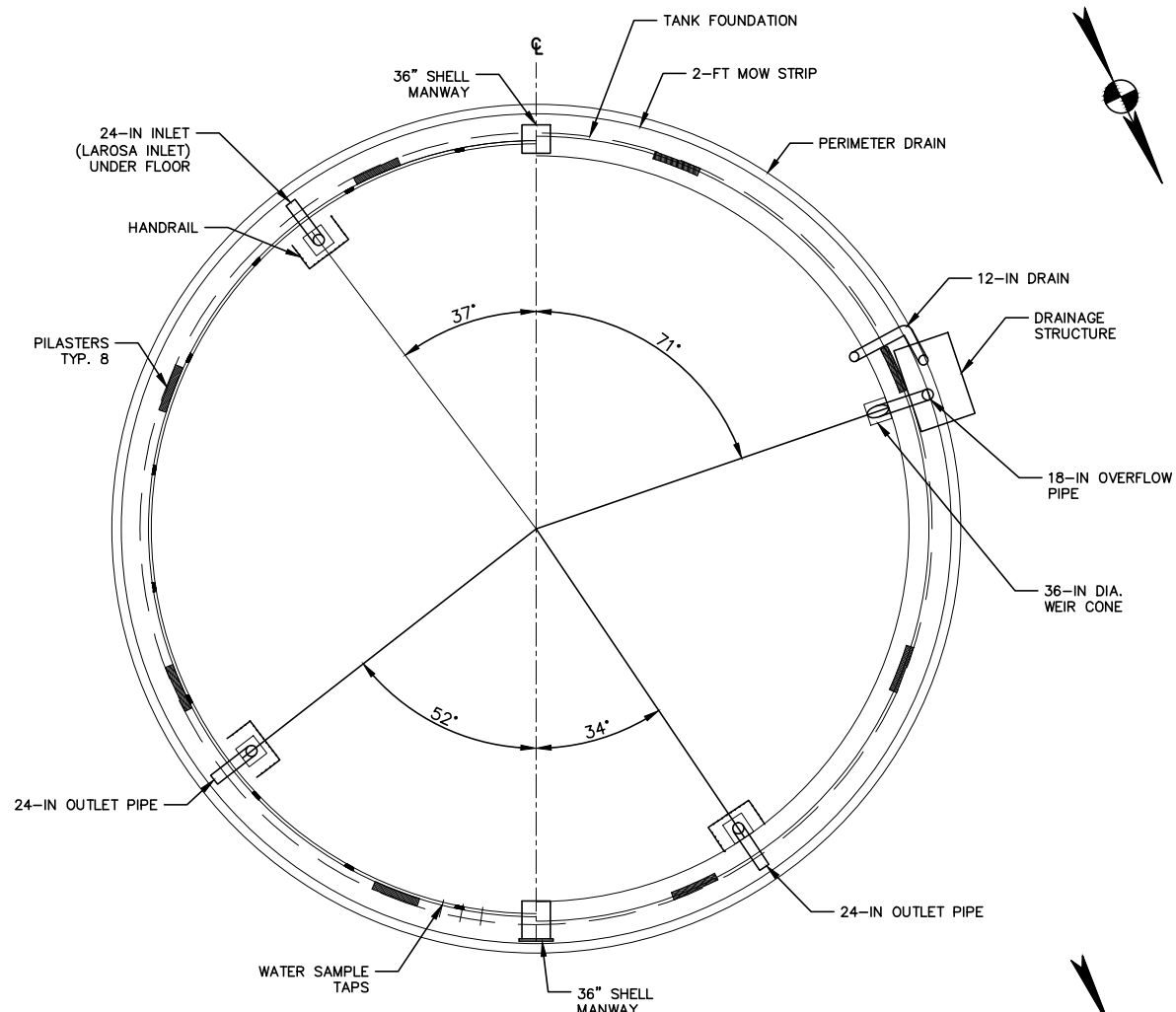
TYPICAL WATERLINE CROSSING
SCALE: NTS



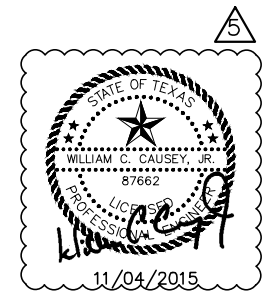
ADDENDUM NO.	5	P.E. SEAL DATE	11.04.2015	W.C.C.	Approved	Date
No.						
Revision						

SAN ANTONIO WATER SYSTEM
DSP CLAYTON TANK REPLACEMENT PROJECT
GST PLAN, ELEVATION, AND TANK
DETAIL

DATE: OCTOBER 2015	DESIGNED BY: BAL	DRAWN BY: FJC	REVIEWED BY: WCC
			GB PRJ.#: 103187-00001



- NOTES:**
1. THE TANK FLOOR SLAB SHALL RECEIVE A BULLFLOAT AND/OR A FRESNO FINISH.
 2. THE TOP OF THE DOME RING AND DOME SLOTS SHALL RECEIVE A LIGHT BROOM FINISH.
 3. FOUNDATION AND FLOOR CONCRETE, $f'_c = 3,500$ psi. DOME, COVE, AND WALL CONCRETE, $f'_c = 4,000$ psi. COREWALL AND WIRE COVER SHOTCRETE, $f'_c = 4,500$ psi, 1:3 MIX. COVERCOAT SHOTCRETE, $f'_c = 4,500$ psi, 1:4 MIX. ALL REINFORCING SHALL BE GRADE 60.
 4. FOOTING REINFORCING SHALL BE DETERMINED BY TANK MANUFACTURER.
 5. INSTALL EIGHT (8) 4-FT X 40'-6" FLUTED PRECAST PILASTERS AROUND THE PERIMETER.
 6. REFER TO CONTRACT DOCUMENTS FOR LEVELING BASE SPECIFICATION, COMPACTION REQUIREMENTS, AND FOUNDATION PREPARATION. LEVELING BASE MATERIAL SHALL BE PROVIDED BENEATH THE TANK FLOOR, FOOTING AND BOTTOM OF PIPE ENCASEMENTS.



**REVISED PER
ADDENDUM NO. 4**



5	ADDENDUM NO.	5	P.E. SEAL DATE	11.04.2015
	W.C.C.		Approved	Date
	No.		Revision	

SAN ANTONIO WATER SYSTEM
DSP CLAYTON TANK REPLACEMENT PROJECT

DATE:	OCTOBER 2015	DESIGNED BY:	BAL
DRAWN BY:	FJC	REVIEWED BY:	WCC
GB PRJ.#:	103187-00001		

SHEET
T-SPS-2
SHEET 30 OF 99

SECTION

PLAN

NOTE: VENT SIZE AS REQUIRED BY DESIGN
AST VENT ONLY
(ALWAYS SAFE TANK VENT)

APPROVED: JULY 2011
REVISOR: NOV 2011

APPROVED: JULY 2011
REVISOR: NOVEMBER 2011

LOCATION VARIES PER SPECIFICATION

APPROVED: NOV 2011
REVISOR: NOV 2011

FLOOR OUTLET DETAIL
N.T.S.

PIPE DIA.	MIN. DISTANCE
24"	36"
30"	39"
36"	42"
48"	48"
54"	51"
60"	54"

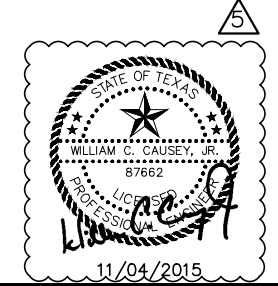
APPROVED: NOV 2011
REVISOR: NOV 2011

PIPE DIA.	A
20"	42"
24"	48"
30"	54"
36"	60"
42"	66"
48"	72"
54"	78"
60"	84"

APPROVED: NOV 2011
REVISOR: NOV 2011

PIPE DIA.	MIN. DIST.
24"	42"
30"	48"
36"	54"
48"	60"
54"	66"
60"	72"

APPROVED: NOV 2011
REVISOR: NOV 2011



5	ADDENDUM NO.	5	P.E. SEAL DATE	W.C.C.	11.04.2015
No.	Revision	Approved	Date		

DATE:	OCTOBER 2015	DESIGNED BY:	BAL
DRAWN BY:	FJC	REVIEWED BY:	WCC
GB PRJ.#:	103187-00001		

FRONT VIEW
TOP VIEW
SIDE VIEW

CONCRETE TANK WALL
CONCRETE TANK FOOTING
12" GATE VALVE, FLANGED
12" TANK DRAIN
2'-0" SUMP
3'-0" MIN.
1" EXPANSION JOINT
OVERFLOW PIPE
OVERFLOW PIPE
OVERFLOW DRAIN
WALL THK. 8"
4" PVC PERFORATED UNDER DRAIN PIPE

NOTES:
1. DRAIN BOX (9' X 7' MIN.)
2. DRAINAGE BOX STRUCTURE SIZED AS PER INFLOW AND OUTFLOW CAPACITY CALCULATIONS.
3. ALL PENETRATIONS SHALL BE FILLED WITH LINK SEAL AND COVERED WITH NON-SHRINK GROUT.
4. ALL REINFORCING #6 @ 12" O.C., UNLESS OTHERWISE NOTED.
5. OVERFLOW PIPE AND OVERFLOW DRAIN SHALL BE SIZED BY THE ENGINEER.
6. ALL WELDED STEEL PIPING SHALL BE COATED AND LINED WITH A FUSION BONDED EPOXY COATING, 18-20 MILS. D.F.T. MINIMUM. EXPOSED STEEL PIPING SHALL ALSO RECEIVE A TIE COAT AND A FINISHED COAT.

DD-904-06
SAN ANTONIO WATER SYSTEM
SAN ANTONIO, TEXAS
APPROVED: MAY 2014
REVISID:

OVERFLOW PIPE
CONCRETE TANK WALL
12" GATE VALVE, FLANGED
18" STEEL BLIND FLANGE
5'-10"
18" x 12" STEEL TEE, FLANGED
18" STEEL PIPE FLANGED
2'-0"
1.5" X DIA. OF PIPE (MIN.)
PF-25 WATERMAN FLAP VALVE FLANGED W/ COUNTER WEIGHT
1-1/2" X 3/16" GALVANIZED BAR GRATING ON 2" X 2" X 1/4" ANGLE (INSIDE PERIMETER) W/ 4" HCS @ 12" O.C. GRATE TO BE ATTACHED WITH 4 STAINLESS STEEL ANCHOR CLIPS PER GRATE.
SEE DETAIL BELOW
ADJUSTABLE GALVANIZED PIPE SUPPORTS
C5 X 9 GALVANIZED GRATING SUPPORTS
8" WALL THK.
18" DIA RUN X 12" DIA BRANCH STEEL TEE P.E. X P.E., WELDED
18" STEEL CAP
4" PERFORATED DRAIN PIPE
9'-0"
10'-4"
6" COMPACTED (95% STANDARD PROCTOR) CRUSHED LIMESTONE
SUBGRADE MATERIAL
FRONT VIEW

NOTES:
1. DRAIN BOX (9' X 7' MIN.)
2. DRAINAGE BOX STRUCTURE SIZED AS PER INFLOW AND OUTFLOW CAPACITY CALCULATIONS.
3. ALL PENETRATIONS SHALL BE FILLED WITH LINK SEAL AND COVERED WITH NON-SHRINK GROUT.
4. ALL REINFORCING #6 @ 12" O.C., UNLESS OTHERWISE NOTED.
5. OVERFLOW PIPE AND OVERFLOW DRAIN SHALL BE SIZED BY THE ENGINEER.
6. ALL WELDED STEEL PIPING SHALL BE COATED AND LINED WITH A FUSION BONDED EPOXY COATING, 18-20 MILS. D.F.T. MINIMUM. EXPOSED STEEL PIPING SHALL ALSO RECEIVE A TIE COAT AND A FINISHED COAT.

1 1/2" X 1 1/2" ANGLE IRON W/ CONCRETE ANCHOR
McNICHOLS GW SERIES
1 - 1/2" X 3/16" GALVANIZED BAR GRATING ON 2" X 2" ANGLE IRON. GRATE TO BE ATTACHED WITH STAINLESS STEEL ANCHOR CLIPS PER GRATE.
C5 X 9 GALVANIZED GRATING SUPPORTS
1/4"
3 1/2"
8"

DD-904-06
SAN ANTONIO WATER SYSTEM
SAN ANTONIO, TEXAS
APPROVED: MAY 2014
REVISID:

CONCRETE TANK WALL
OVERFLOW PIPE
PF-25 WATERMAN FLAP VALVE FLANGED W/ COUNTER WEIGHT
WELDED STEEL COMPACT BEND
ADJUSTABLE GALVANIZED PIPE SUPPORTS
1.5" X DIA. OF PIPE (MIN.)
2'-0"
3'-0" MIN.
2'-0" SUMP
FINISHED FLOOR
OVERFLOW DRAIN
6'-0" MIN.
4" PERFORATED DRAIN PIPE
5% SLOPE
GROUT
1'-0" MIN.
12" WELDED STEEL 90 DEG. BEND
CONCRETE ENCASEMENT WITH STEEL REINFORCEMENT
12" WELDED STEEL PIPE
1" EXPANSION JOINT
6" COMPACTED (95% STANDARD PROCTOR) CRUSHED LIMESTONE
SUBGRADE MATERIAL
7'-0"
8'-4"

NOTES:
1. DRAIN BOX (9' X 7' MIN.)
2. DRAINAGE BOX STRUCTURE SIZED AS PER INFLOW AND OUTFLOW CAPACITY CALCULATIONS.
3. ALL PENETRATIONS SHALL BE FILLED WITH LINK SEAL AND COVERED WITH NON-SHRINK GROUT.
4. ALL REINFORCING #6 @ 12" O.C., UNLESS OTHERWISE NOTED.
5. OVERFLOW PIPE AND OVERFLOW DRAIN SHALL BE SIZED BY THE ENGINEER.
6. ALL WELDED STEEL PIPING SHALL BE COATED AND LINED WITH A FUSION BONDED EPOXY COATING, 18-20 MILS. D.F.T. MINIMUM. EXPOSED STEEL PIPING SHALL ALSO RECEIVE A TIE COAT AND A FINISHED COAT.

DD-904-06
SAN ANTONIO WATER SYSTEM
SAN ANTONIO, TEXAS
APPROVED: MAY 2014
REVISID:

NOTE:
1. CONTRACTOR WILL NOT SUPPLY SAFETY HARNESS AS INDICATED ON DETAIL DD-904-08.

TOP OF WALL PANEL
DESIGN OVERFLOW ELEVATION
WEIR CONE 316 STAINLESS STEEL
4'-0" (MIN.)
FLANGE ISOLATION KIT BETWEEN S.S. AND C.S. PIPE
ENCASEMENT REINFORCEMENT PER TANK MANUFACTURE
CONCRETE TANK WALL
STEEL FLG. X FLG.
ADJUSTABLE GALVANIZED PIPE SUPPORT
90 DEGREE STEEL ELBOW, FLANGED
PF-25 WATERMAN FLAP VALVE FLANGED W/ COUNTER WEIGHT
1.5" X DIA. OF PIPE (MIN.)
CONCRETE ENCASEMENT
WELDED STEEL PIPE
WELDED STEEL COMPACT BEND
FINISHED FLOOR
DRAINAGE STRUCTURE SEE DWG, DD-904-06

NOTES:
1. WEIR DIMENSIONS, AND ENCASEMENT DIMENSIONS AS REQUIRED FOR 6" WEIR DEPTH.
2. ALL WELDED STEEL PIPING SHALL BE COATED AND LINED WITH A FUSION BONDED EPOXY COATING, 18 TO 20 MILS. D.F.T. MINIMUM. EXPOSED STEEL PIPING SHALL ALSO RECEIVE A TIE COAT AND A FINISH COAT.
3. OVERFLOW PIPE DIAMETER SHALL BE SIZED BY THE ENGINEER.

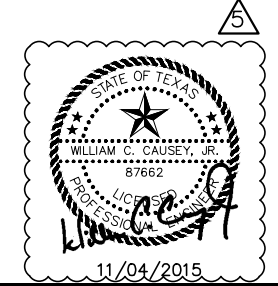
DD-904-07
SAN ANTONIO WATER SYSTEM
SAN ANTONIO, TEXAS
APPROVED: NOV 2011
REVISID: MAY 2014

SS CHAIN
3/8" X 2 1/2" SIDE RAIL (TYPICAL BOTH SIDES)
BILCO DOME HATCH
HANDRAIL
3'-6"
4" TOE BOARD (AT FRONT ONLY)
1'-0" MAX TO FIRST RUNG
CLEAR OPENING
3/4" (TYP)
OSHA COMPLIANT SAFETY CLIMB DEVICE INCLUDING S.S. CABLE (3/8" STYLE CLIMBING DEVICE AND FULL BODY HARNESS BUCKLE - TYPE W/ FRONT D-RING) DBI / SALA CABLE
LADDER SUPPORT 3/8" X 1/2" FLAT BAR (TYPICAL BOTH SIDES) SEAL WELDED TO LADDER AND CONNECTED TO TANK USING STAINLESS STEEL WEDGE ANCHORS
3/8" X 2 1/2" SIDE RAIL (TYPICAL BOTH SIDES)
USE 3/8" X 2 1/2" FLAT SUPPORT FOR LADDER GREATER THAN 2' FROM WALL, OTHERWISE USE 1/2" X 2 1/2"
3/4" DIA. STAINLESS STEEL RUNG (NON-SLIP)
1'-0" (CONTINUOUS & UNIFORM)
EXTENDED SHOTCRETE PAD FOR ELECTRICAL CONDUIT
3/4" DIA. STAINLESS STEEL RUNG (NON-SLIP)
30° RESISTANT SURFACE (RUBBER OR WELDED)
NOTES:
1. LADDERS SHALL BE STAINLESS STEEL 316L.
2. ALL STAINLESS STEEL SURFACES IN CONTACT WITH CONCRETE SHALL RECEIVE A PVC SHIM.
3. ALL LADDERS SHALL BE WELDED ALONG SIDE RAILS AND NOT BOLTED.
4. 7" MIN. CLEAR TOE ROOM FOR LADDERS.
FINISH GRADE
FINISH FLOOR
LEVEL BASE MATERIAL
EXTERIOR LADDER
TANK FOOTING
INTERIOR LADDER

DD-904-08
SAN ANTONIO WATER SYSTEM
SAN ANTONIO, TEXAS
APPROVED: NOV 2011
REVISID: NOV 2011

SS CHAIN
3/8" X 2 1/2" SIDE RAIL (TYPICAL BOTH SIDES)
BILCO DOME HATCH
3'-6"
4" TOE BOARD (AT FRONT ONLY)
DOME RING
OSHA COMPLIANT SAFETY CLIMB DEVICE INCLUDING S.S. CABLE (3/8" STYLE CLIMBING DEVICE AND FULL BODY HARNESS BUCKLE - TYPE W/ FRONT D-RING) DBI / SALA CABLE
3/4" DIA. STAINLESS STEEL RUNG (NON-SLIP)
8" TALL ALUMINUM LADDER GATE BY NORTH SAFETY PRODUCTS. ATTACHES TO SIDE RAIL.
HOOP AND PADLOCK ON THIS SIDE
LIMIT UNAUTHORIZED ACCESS TO BACK OF LADDER
3/4" DIA. STAINLESS STEEL RUNG (NON-SLIP)
4'-0"
2'-3"
1'-0"
FINISH GRADE
FINISH FLOOR
TANK FOOTING

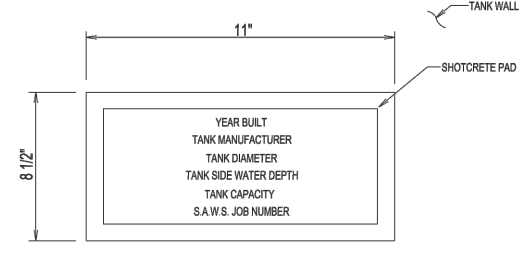
DD-904-08
SAN ANTONIO WATER SYSTEM
SAN ANTONIO, TEXAS
APPROVED: NOV 2011
REVISID: NOV 2011



W.C.C.	11.04.2015	Seal	Date
5	ADDENDUM NO. 5 P.E. SEAL DATE		
	Revision	Approved	Date
No.			

SAN ANTONIO WATER SYSTEM
DSP CLAYTON TANK REPLACEMENT PROJECT
GST DETAILS III

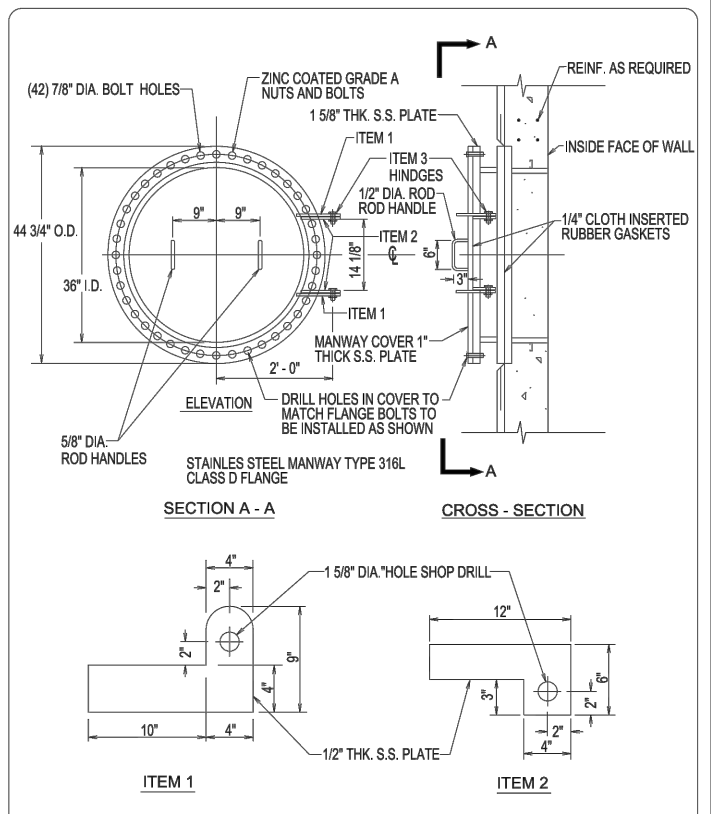
DATE: OCTOBER 2015	BAL
DESIGNED BY:	FJC
DRAWN BY:	WCC
REVIEWED BY:	WCC
GB PRJ.#:	103187-00001



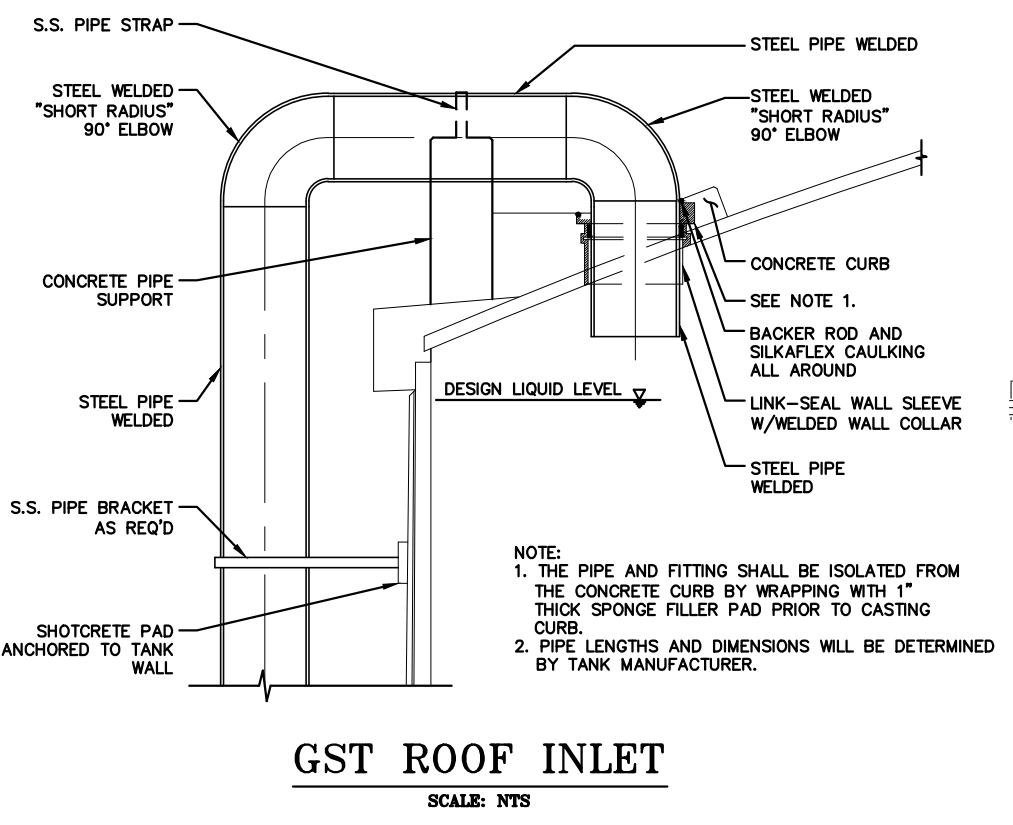
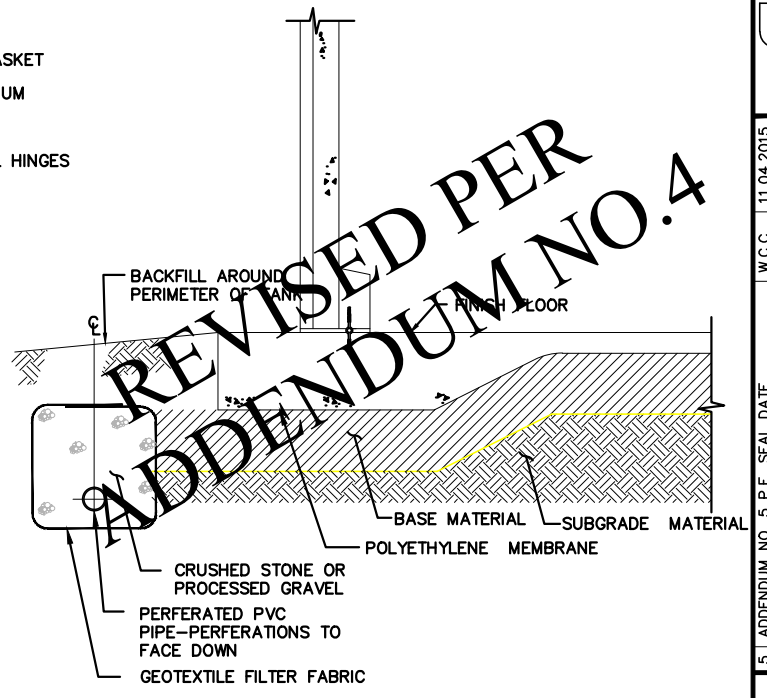
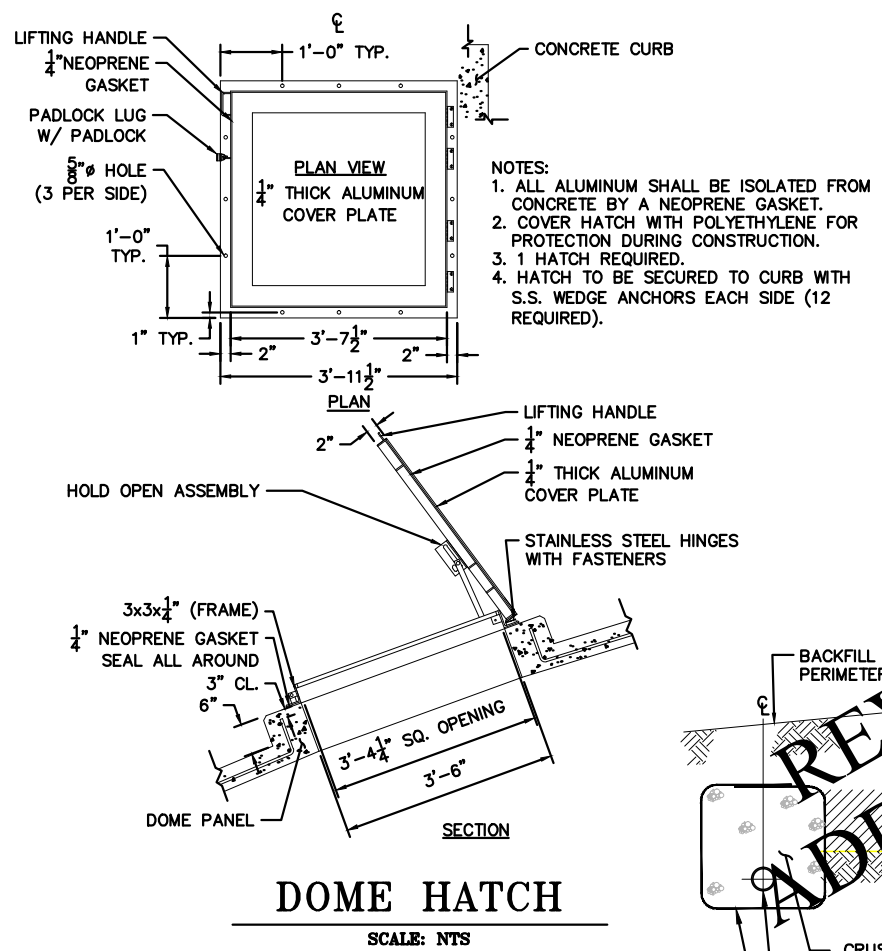
- NOTES:
1. PLAQUE MOUNTED TO SHOTCRETE PAD LOCATED ADJACENT TO EXTERIOR LADDER OR MANWAY.
2. PLAQUE MUST BE 24 GAUGE BRONZE WITH RAISED LETTERING.

DD-904-10 SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS
SHEET 1 OF 1 PLAQUE
APPROVED: NOV 2011
REVISED: NOV 2011

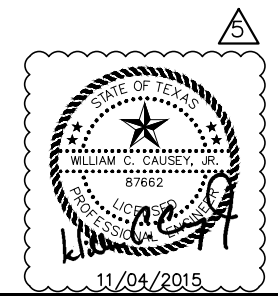
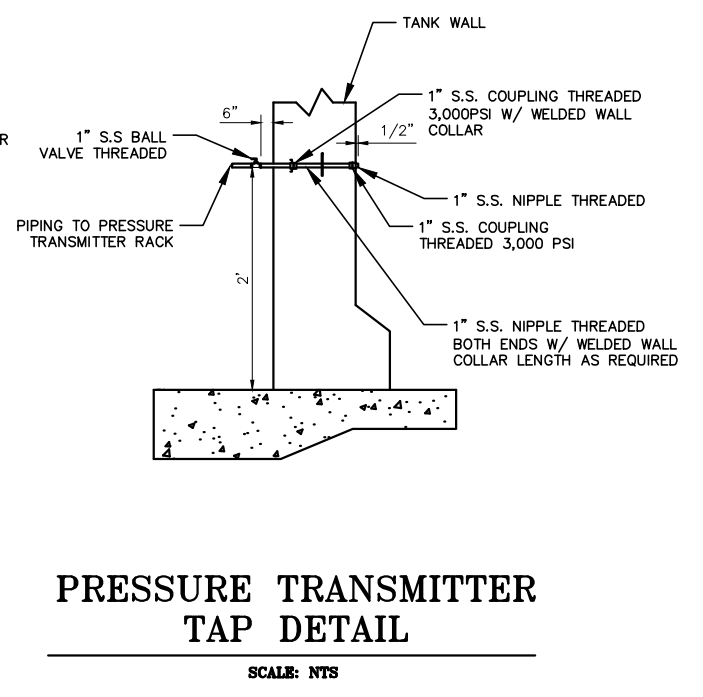
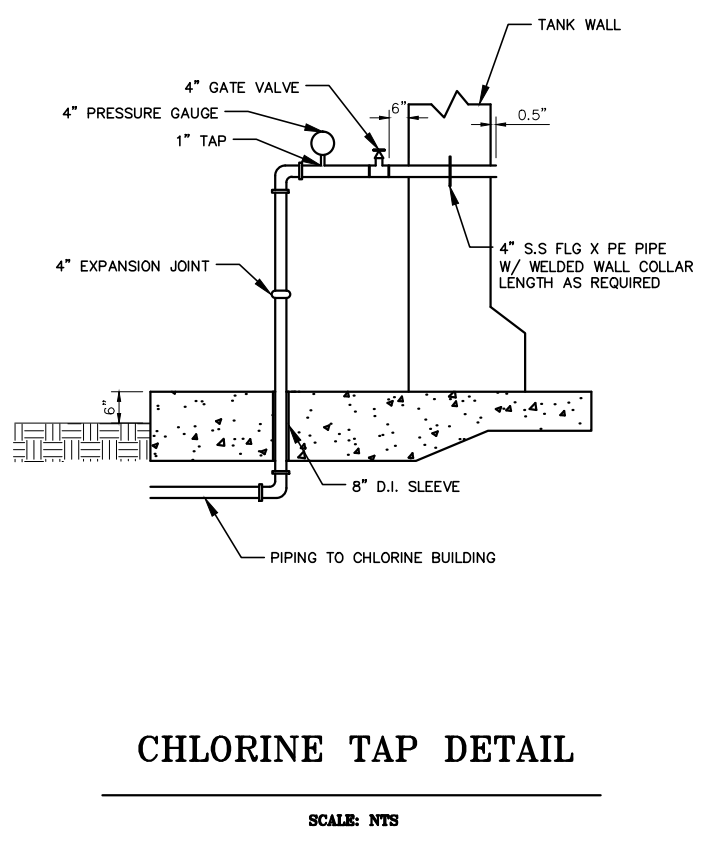
- NOTE:
1. CONTRACTOR TO COORDINATE WITH OWNER FOR APPROVAL OF PLAQUE TEXT.



DD-904-11 SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS
SHEET 1 OF 1 36" SHELL MANWAY
APPROVED: MAY 2014
REVISED:



- NOTE:
1. THE PIPE AND FITTING SHALL BE ISOLATED FROM THE CONCRETE CURB BY WRAPPING WITH 1" THICK SPONGE FILLER PAD PRIOR TO CASTING CURB.
2. PIPE LENGTHS AND DIMENSIONS WILL BE DETERMINED BY TANK MANUFACTURER.



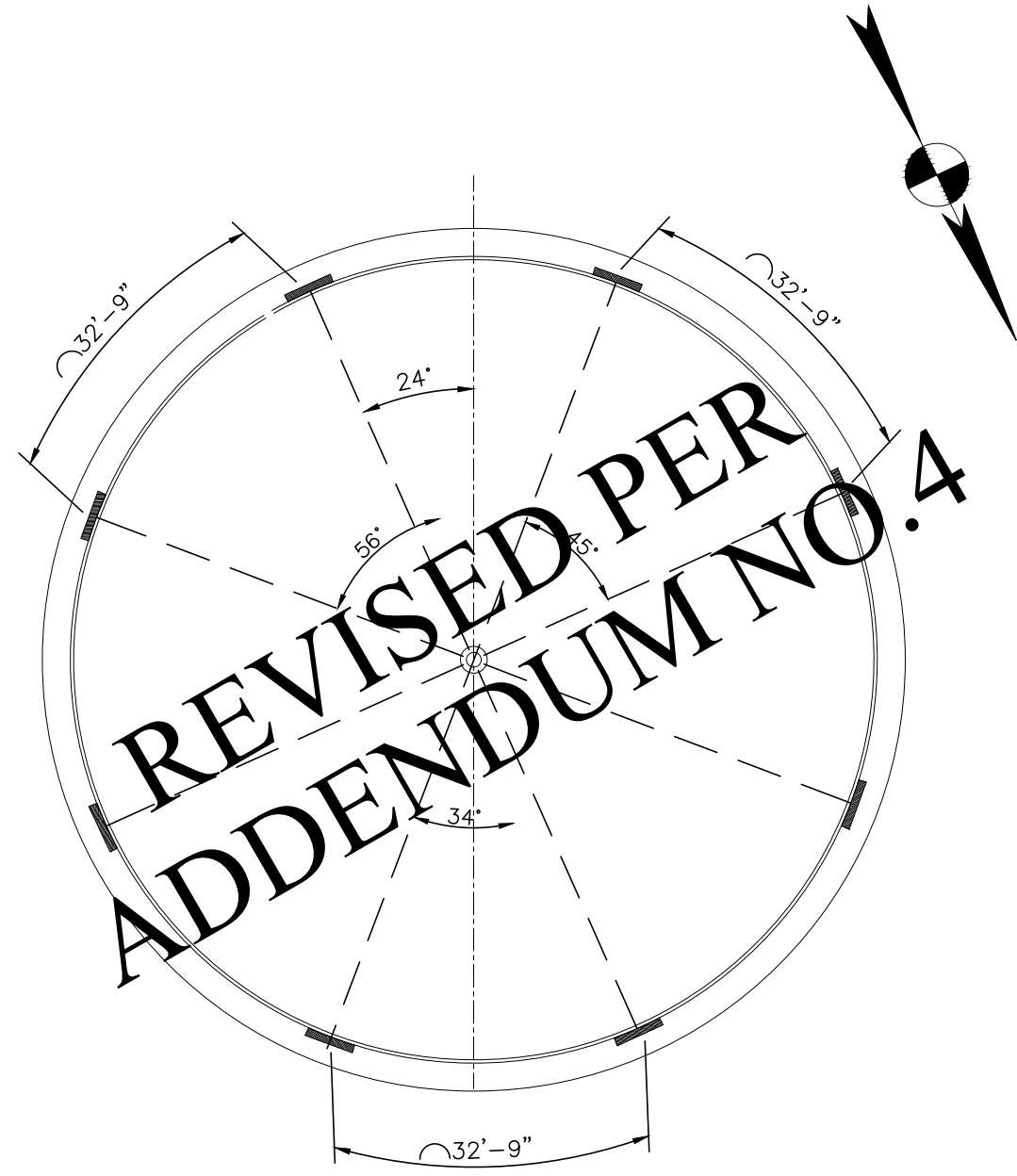
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ADDENDUM NO.	5 P.E. SEAL DATE	W.C.C.	11.04.2015
No.	Revision	Approved	Date

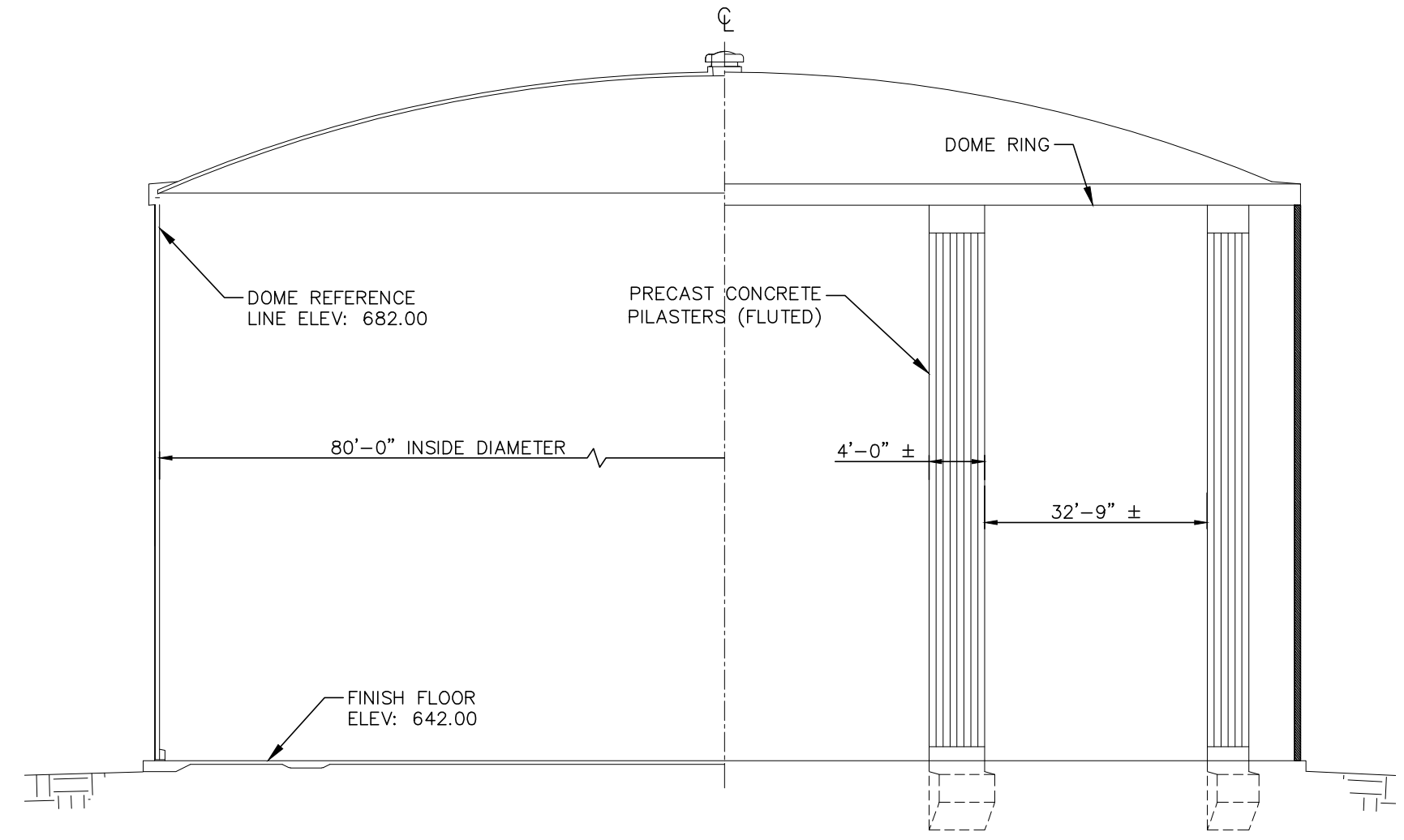
SAN ANTONIO WATER SYSTEM
DSP CLAYTON TANK REPLACEMENT PROJECT
GST DETAILS IV

DATE: OCTOBER 2015	DESIGNED BY: BAL
DRAWN BY: FJC	REVIEWED BY: WCC
GB PRJ.#: 103187-00001	

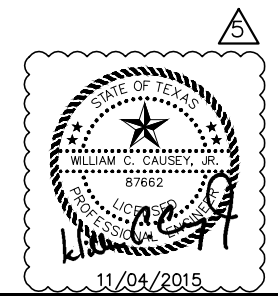
SHEET
T-SPS-5
SHEET 33 OF 99

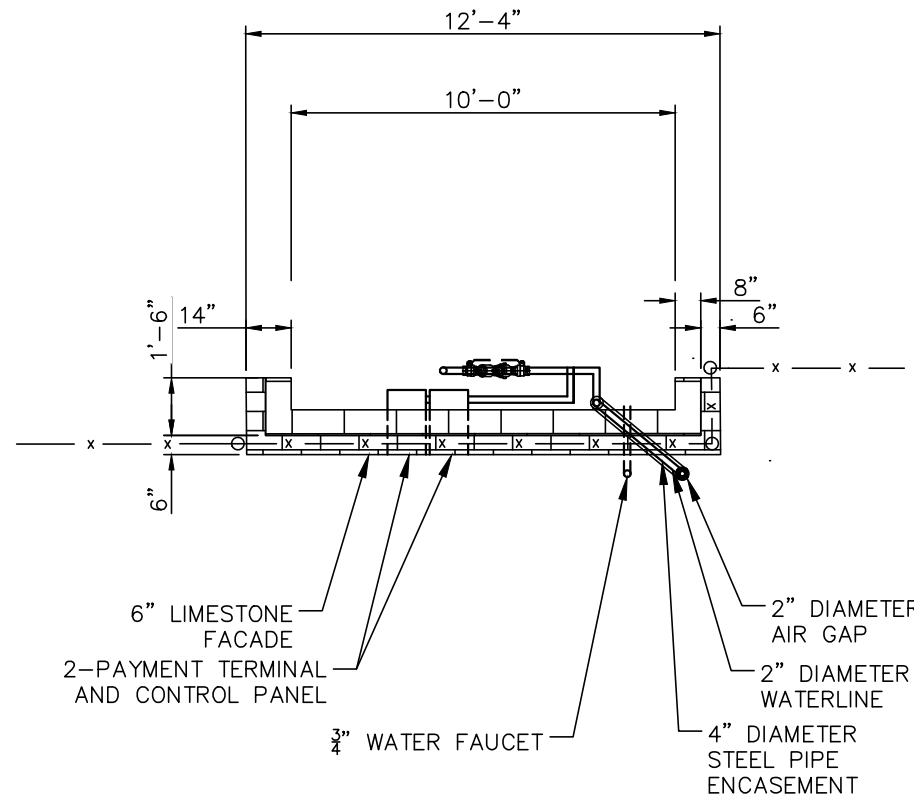


TANK PILASTERS PLAN VIEW
(FLUTED)
SCALE: N.T.S.

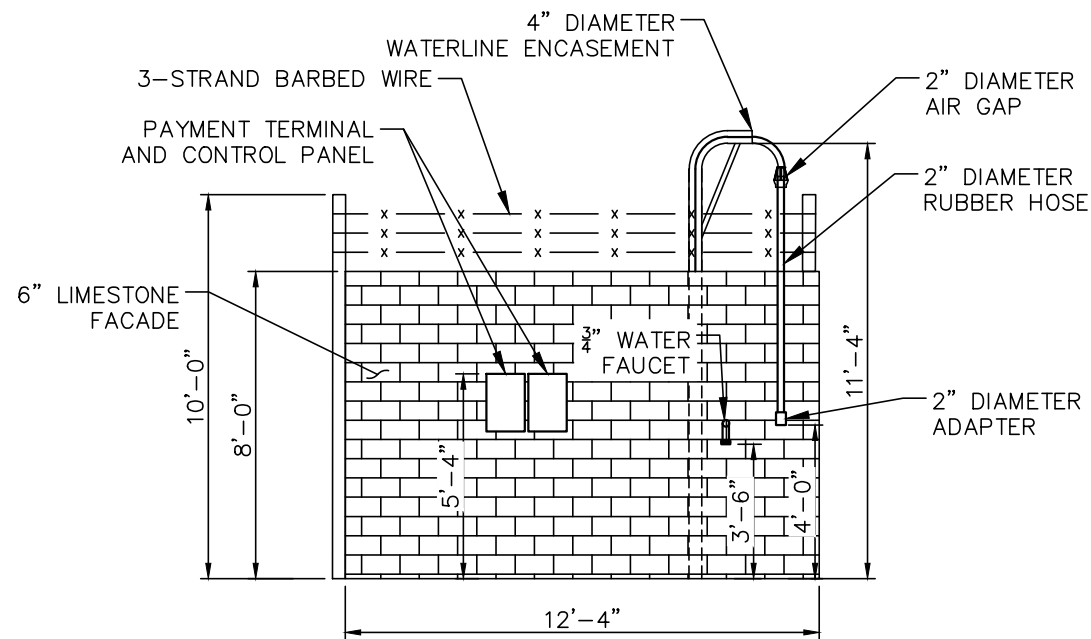


TANK PILASTERS PROFILE VIEW
(FLUTED)
SCALE: N.T.S.

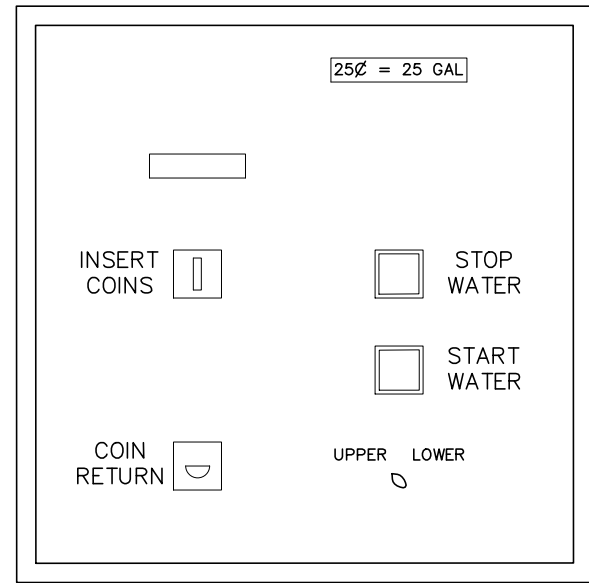




PLAN VIEW
 SCALE: 1"=5'



FRONT VIEW
 SCALE: 1"=5'



PAYMENT TERMINAL
 AND CONTROL PANEL
 SCALE: NTS

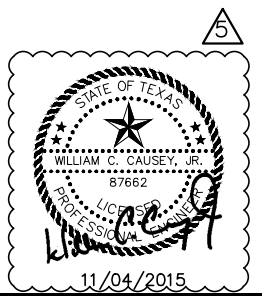


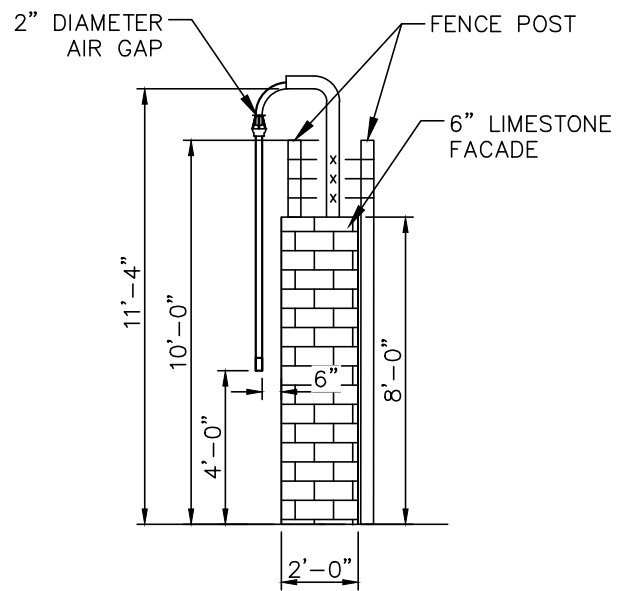
5	ADDENDUM NO. 5	P.E. SEAL DATE	W.C.C.	11.04.2015
No.	Revision	Approved	Date	

SAN ANTONIO WATER SYSTEM
 DSP CLAYTON TANK REPLACEMENT PROJECT
 WATER DISPENSER PLANS,
 SECTIONS, & ELEVATIONS

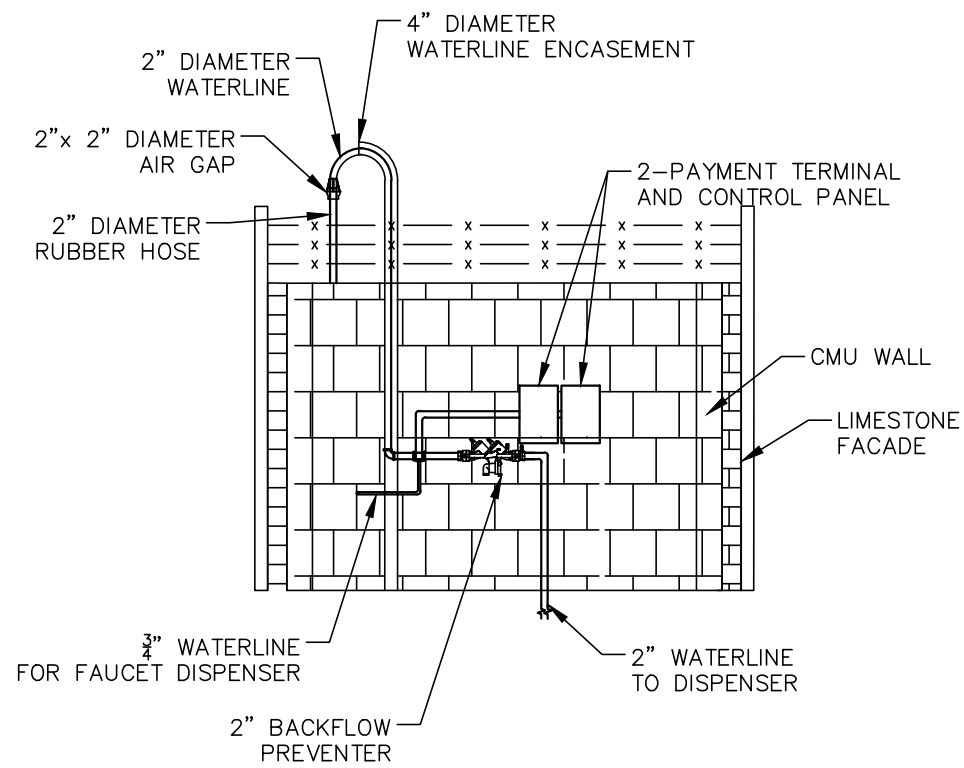
DATE:	OCTOBER 2015
DESIGNED BY:	BAL
DRAWN BY:	FJC
REVIEWED BY:	WCC
GB PRJ.#:	103187-00001

SHEET
 S-SPS-10
 SHEET 43 OF 99





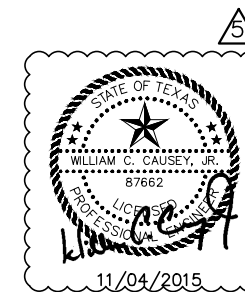
RIGHT SIDE VIEW
 SCALE: 1"=5'



BACK VIEW
 SCALE: 1"=5'



FACADE PATTERN



ADDENDUM NO.	5	P.E. SEAL DATE	11.04.2015	W.C.C.	11.04.2015
No.				Approved	Date

SAN ANTONIO WATER SYSTEM
 DSP CLAYTON TANK REPLACEMENT PROJECT
 WATER DISPENSER DETAILS

DATE:	OCTOBER 2015
DESIGNED BY:	BAL
DRAWN BY:	FJC
REVIEWED BY:	WCC
GB PRJ.#:	103187-00001



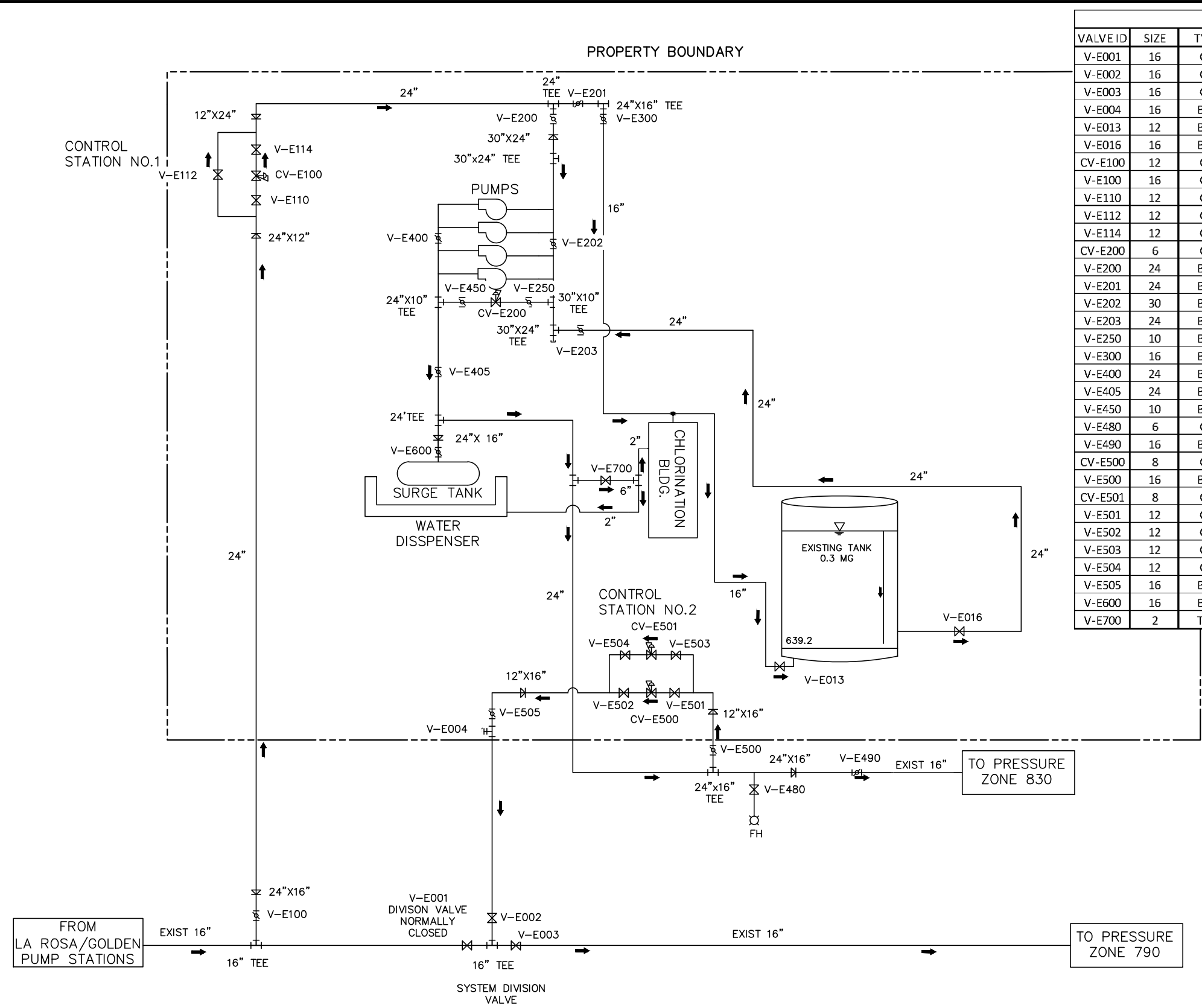
5	ADDENDUM NO. 5	P.E. SEAL DATE	W.C.C.	11.04.2015
No.	Revision	Approved	Date	

SAN ANTONIO WATER SYSTEM
DSP CLAYTON TANK REPLACEMENT PROJECT
EXISTING SYSTEM PMID

DATE:	OCTOBER 2015
DESIGNED BY:	BAL
DRAWN BY:	FJC
REVIEWED BY:	WCC
GB PRJ.#:	103187-00001

EXISTING VALVES					
VALVE ID	SIZE	TYPE	ACTUATOR	OPEN	FUNCTION
V-E001	16	GV	MANUAL	LEFT	ISOLATION VALVE FROM LAROSA TO SOMERSET FACILITY
V-E002	16	GV	MANUAL	LEFT	ISOLATION VALVE
V-E003	16	GV	MANUAL	LEFT	ISOLATION VALVE
V-E004	16	BFV	MANUAL	LEFT	ISOLATION VALVE
V-E013	12	BFV	MANUAL	LEFT	ISOLATES THE FLOW FROM CONTROL STATION 1 TO EXISTING TANK
V-E016	16	BFV	MANUAL	LEFT	EXISTING TANK OUTLET VALVE
CV-E100	12	CV	ELECTRIC	N/A	PRESSURE SUSTAINING VALVE
V-E100	16	GV	MANUAL	LEFT	ISOLATION VALVE
V-E110	12	GV	MANUAL	LEFT	CONTROL STATION 1 VALVE
V-E112	12	GV	MANUAL	LEFT	CONTROL STATION 1 VALVE
V-E114	12	GV	MANUAL	LEFT	CONTROL STATION 1 VALVE
CV-E200	6	CV	N/A	N/A	BOOSTER PUMP BYPASS VALVE
V-E200	24	BFV	MANUAL	LEFT	ISOLATION VALVE
V-E201	24	BFV	MANUAL	LEFT	ISOLATION VALVE
V-E202	30	BFV	MANUAL	LEFT	BOOSTER PUMP ISOLATION VALVE
V-E203	24	BFV	MANUAL	LEFT	ISOLATION VALVE
V-E250	10	BFV	MANUAL	LEFT	ISOLATION VALVE
V-E300	16	BFV	MANUAL	LEFT	ISOLATION VALVE
V-E400	24	BFV	MANUAL	LEFT	BOOSTER PUMP ISOLATION VALVE
V-E405	24	BFV	MANUAL	LEFT	ISOLATION VALVE
V-E450	10	BFV	MANUAL	LEFT	ISOLATION VALVE
V-E480	6	GV	MANUAL	LEFT	ISOLATES FIRE HYDRANT
V-E490	16	BFV	MANUAL	LEFT	ISOLATION VALVE
CV-E500	8	CV	ELECTRIC	N/A	CONTROL STATION 2 VALVE
V-E500	16	BFV	MANUAL	LEFT	ISOLATES CONTROL STATION NO. 2
CV-E501	8	CV	ELECTRIC	N/A	CONTROL STATION 2 BYPASS VALVE
V-E501	12	GV	MANUAL	LEFT	CONTROL STATION 2 VALVE
V-E502	12	GV	MANUAL	LEFT	CONTROL STATION 2 VALVE
V-E503	12	GV	MANUAL	LEFT	CONTROL STATION 2 VALVE
V-E504	12	GV	MANUAL	LEFT	CONTROL STATION 2 VALVE
V-E505	16	BFV	MANUAL	LEFT	ISOLATION VALVE
V-E600	16	BFV	MANUAL	LEFT	ISOLATES SURGE TANK
V-E700	2	TAP	MANUAL	LEFT	FACILITY WATER SERVICE CHLORINE/DISPENSER

V-XXXX - EXISTING VALVE
V-PXXX - PROPOSED VALVE



Date: Nov 04, 2015, 11:39am User ID: fcantero
File: G:\103187\00001\10318700001SPS_EXIST_PMD.dwg





APPENDUM NO. 5	P.E. SEAL DATE	11.04.2015	W.C.C.	Approved	Date
No.	Revision				

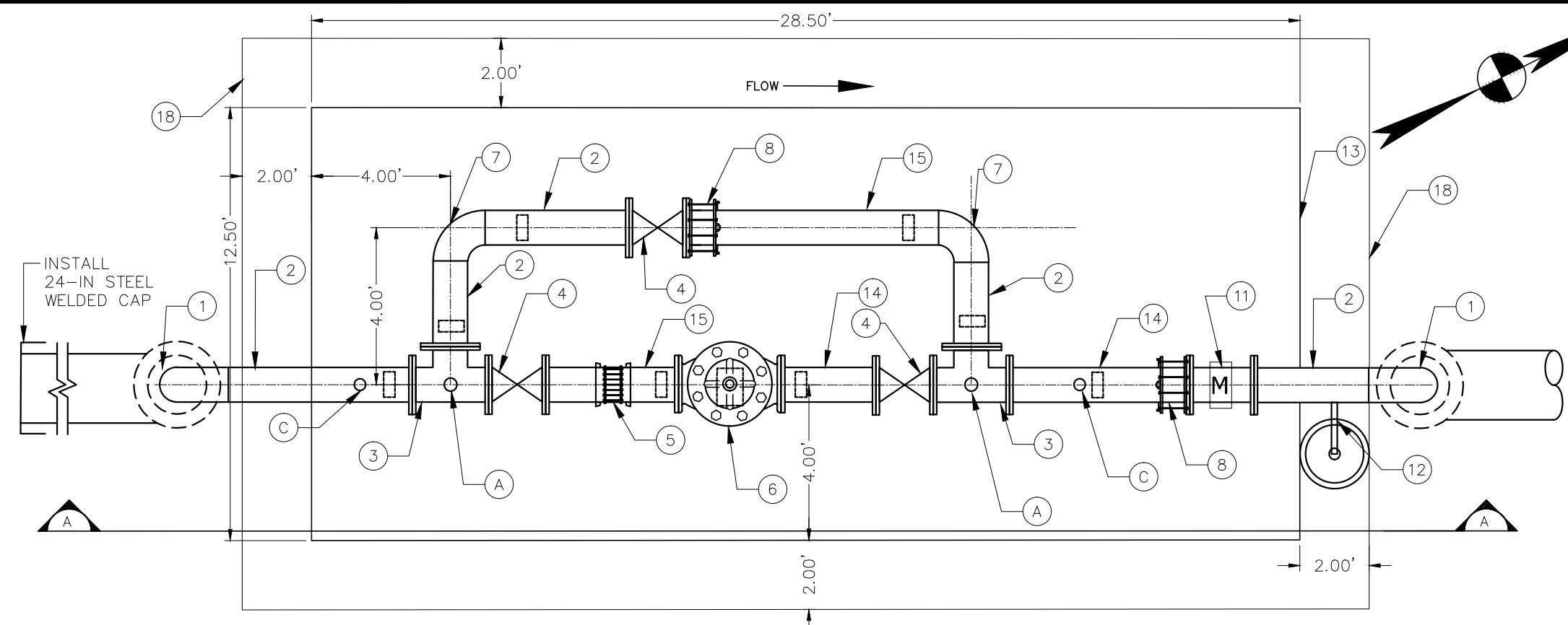
SAN ANTONIO WATER SYSTEM
DSP CLAYTON TANK REPLACEMENT PROJECT
CONTROL STATION NO.3 PLAN & PROFILE

DATE:	OCTOBER 2015	DESIGNED BY:	BAL
DRAWN BY:	FJC	REVIEWED BY:	WCC
GB PRJ.#:	103187-00001		

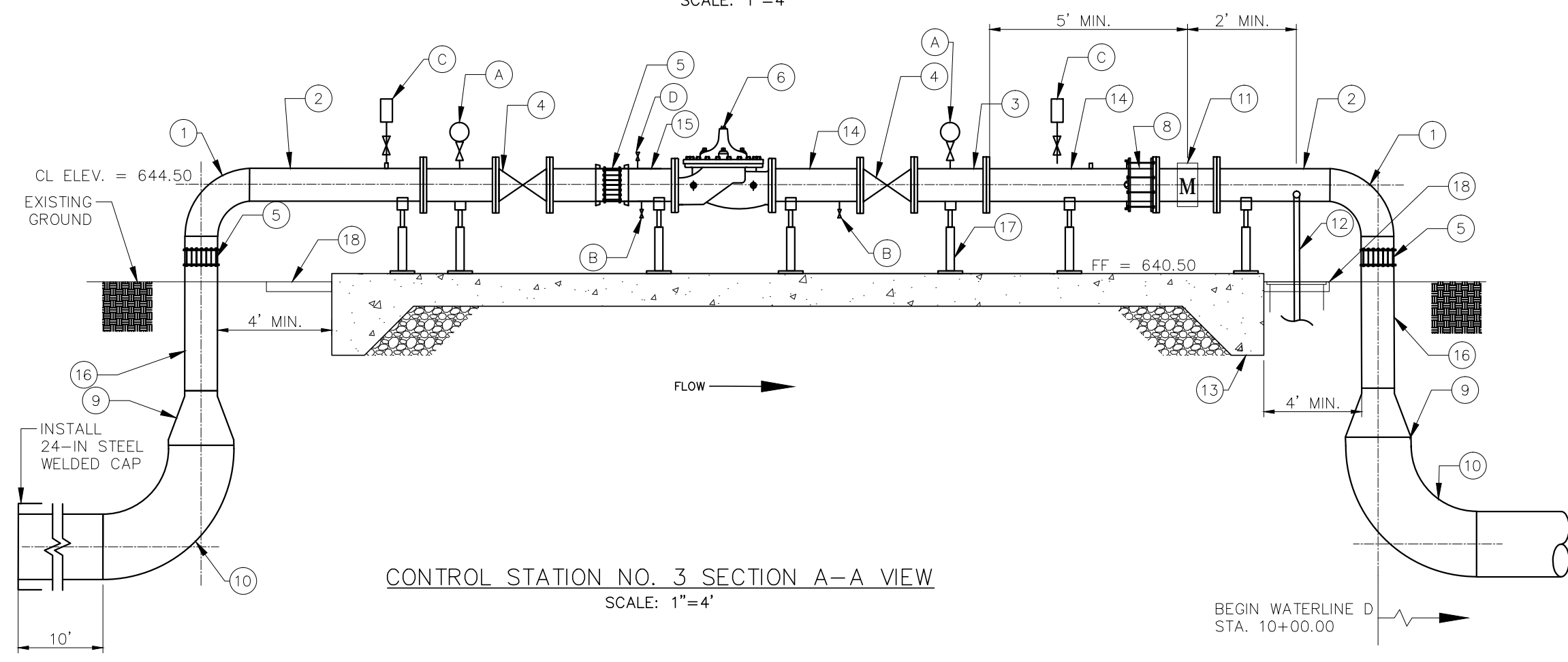
- EQUIPMENT LIST:**
- 12" 90° ELBOW
 - 12" SPOOL (L.A.R.) FLG x WLD
 - 12" X 12" TEE
 - 12" GATE VALVE FLG
 - 12" HARNESS COUPLING (RESTRAINED)
 - 12" CONTROL VALVE, PRESSURE REDUCING/ALTITUDE VALVE
 - 12" 90° ELBOW WLD x WLD
 - 12" FLANGE COUPLING ADAPTER (RESTRAINED)
 - 24" X 12" REDUCER
 - 24" 90° BEND
 - 12" MAG METER
 - 2" PVC CHLORINE SOLUTION LINE FROM CHLORINATOR
 - CONCRETE FOUNDATION
 - 12" SPOOL (L.A.R.) FLG x FLG
 - 12" SPOOL (L.A.R.) FLG x PE
 - 12" SPOOL (L.A.R.) WLD x WLD
 - PIPE SUPPORT
 - 2-FT MOW STRIP

- A. PRESSURE GAUGE (4" DIA. FACE)
B. 2" DRAIN TAP
C. 4" COMBINATION AIR/VACUUM VALVE
D. 3/4" SAMPLE TAP
- BFV - BUTTERFLY VALVE
FLG - FLANGE
WLD - WELDED STEEL
GV GATE VALVE
L.A.R. - LENGTH AS REQUIRED
STL - STEEL
DI - DUCTILE IRON
PE - POLYETHYLENE FUSION

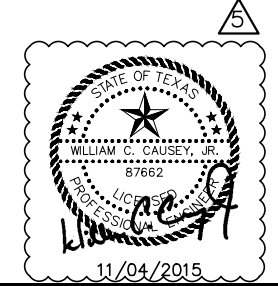
- NOTE:**
- SEE SHEET M-SPS-11 DETAIL A FOR CHEMICAL APPLICATION POINT DETAIL.
 - SEE SHEET M-SPS-9 FOR PIPE SUPPORT DETAIL.
 - PROVIDE FLANGE INSULATION GASKETS FOR DISSIMILAR METALS.
 - ALL PIPING FOR CONTROL STATION NO. 3 SHALL BE STEEL.



CONTROL STATION NO. 3 PLAN VIEW
SCALE: 1"=4'



CONTROL STATION NO. 3 SECTION A-A VIEW
SCALE: 1"=4'



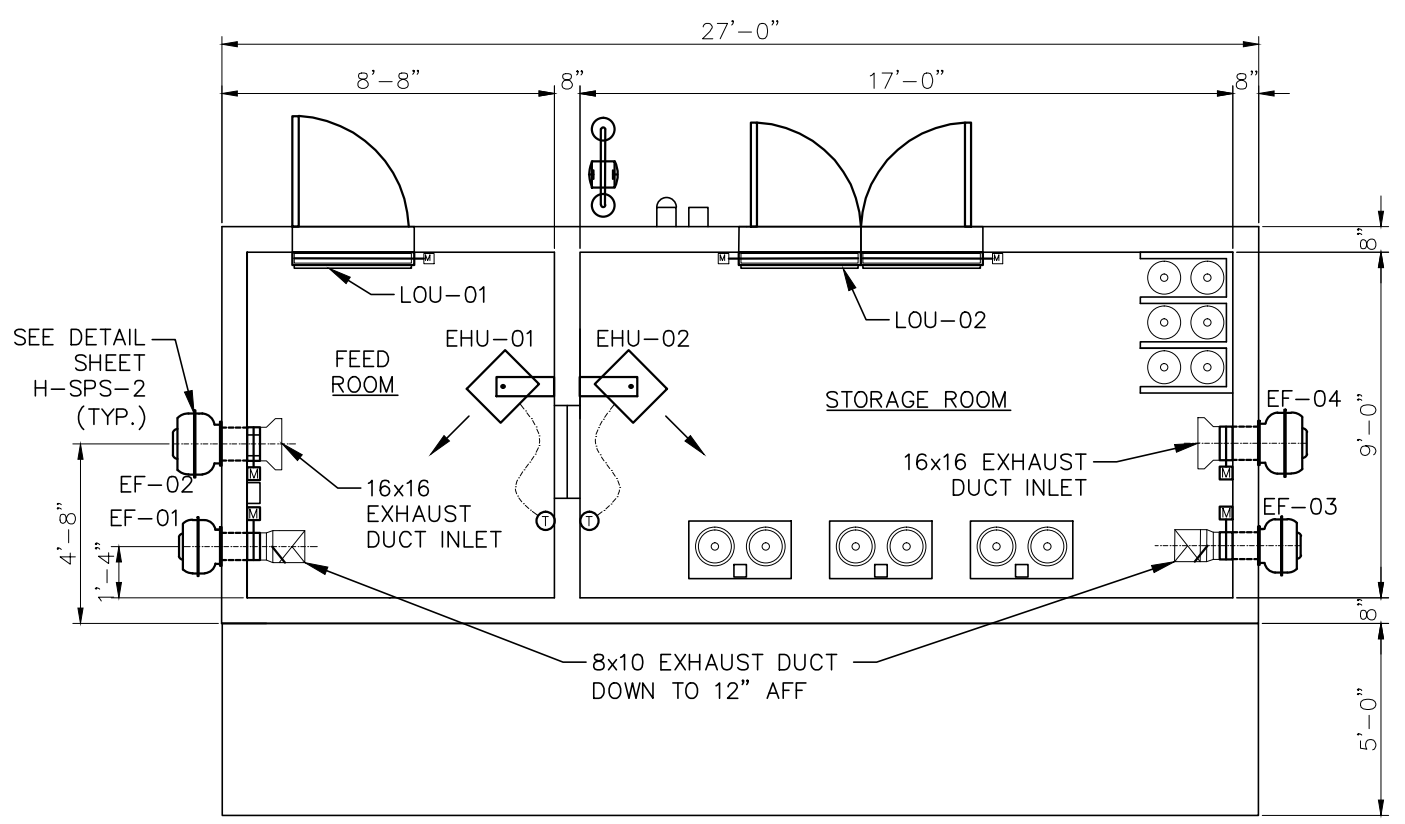


5	ADDENDUM NO. 5	P.E. SEAL DATE	W.C.C.	11.04.2015
No.	Revision	Approved	Date	

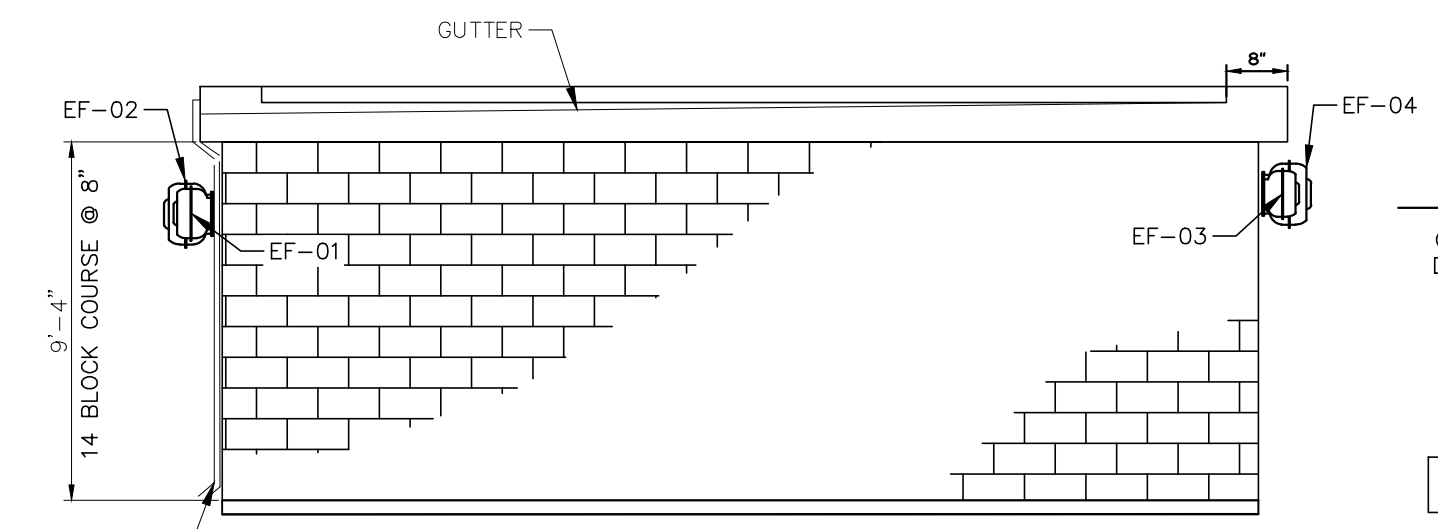
SAN ANTONIO WATER SYSTEM
DSP CLAYTON TANK REPLACEMENT PROJECT
HVAC EQUIPMENT LAYOUT

DATE:	OCTOBER 2015
DESIGNED BY:	BAL
DRAWN BY:	FJC
REVIEWED BY:	WCC
GB PRJ.#:	103187-00001

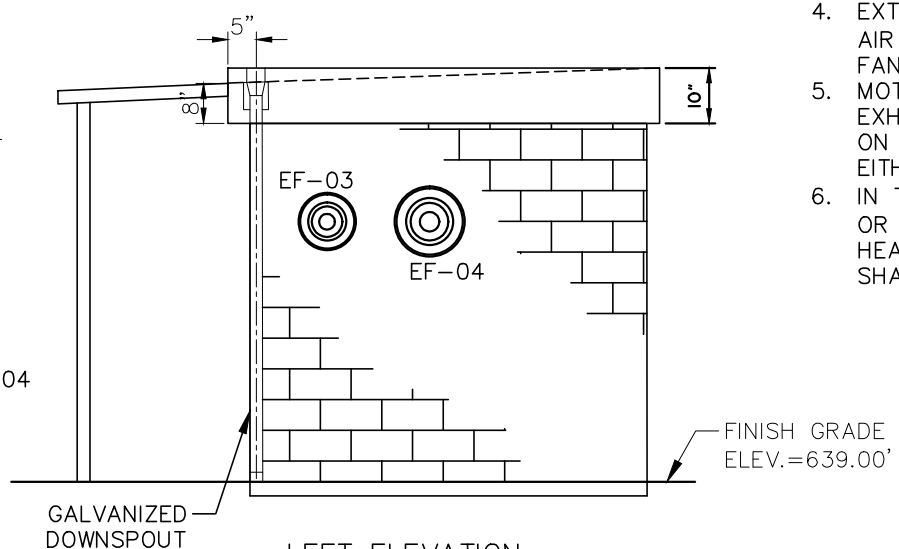
SHEET
H-SPS-1
SHEET 55 OF 99



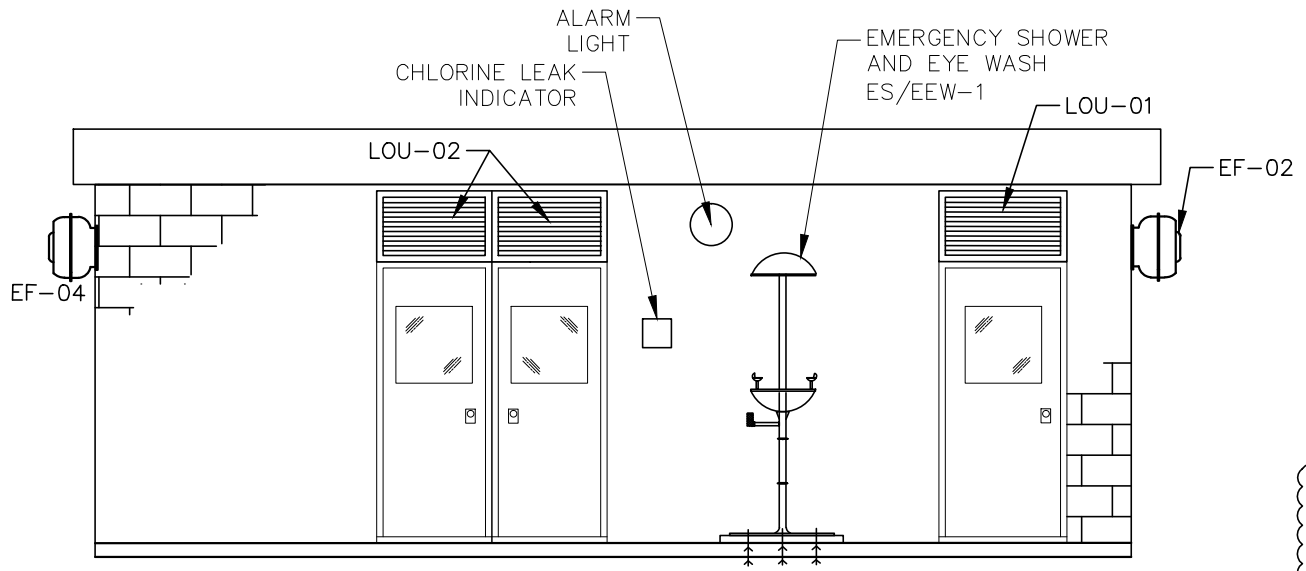
HVAC EQUIPMENT PLAN
SCALE: 1" = 5'



BACK ELEVATION
SCALE: 1" = 5'



LEFT ELEVATION
SCALE: 1" = 5'



FRONT ELEVATION
SCALE: 1" = 5'

GENERAL NOTES

1. DUCTWORK, DAMPERS, SUPPORTS AND ACCESSORIES SHALL BE ALL ALUMINUM CONSTRUCTION.
2. MOTORIZED DAMPER ACTUATORS SHALL HAVE NEMA-4X NON-METAL ENCLOSURES, AS MANUFACTURED BY BELIMO.
3. PROVIDE DUCT SUPPORTS EVERY 5' MAX.
4. PROVIDE ALUMINUM DUCT SLEEVES THRU WALLS FOR ALL PENETRATIONS AND SEAL AIRTIGHT. SLEEVES SHALL BE HEAVY GAUGE, 0.068" THICKNESS MIN.

SEQUENCE OF OPERATION

1. EF-1 & EF-3 SHALL RUN CONTINUOUSLY TO PROVIDE 1CFM/FT2 MINIMUM VENTILATION. DUCTWORK SHALL BE EXTENDED TO 12" AFF FOR LOW-POINT EXHAUST.
2. EF-2 & EF-4 SHALL OPERATE BASED ON THEIR RESPECTIVE ROOM MOUNTED TEMPERATURE SENSOR. THE ROOM TEMPERATURE SENSOR SHALL SEND A 0-10VDC SIGNAL DIRECTLY TO THE EXHAUST FAN MOTOR (EC TYPE WITH INTEGRAL SPEED CONTROL AND CONTROL XFMR). EXHAUST FAN SHALL START WHEN SIGNAL IS ABOVE 1.9V AND RAMP FROM MINIMUM (20% RATED SPEED) UP TO DESIGN AIRFLOW INDICATED ON SCHEDULE AT 10V. INITIAL TEMPERATURE SETPOINT SHALL BE 80°F (ADJ). TEMPERATURE SENSOR SHALL BE INDUSTRIAL GRADE, NEMA 4X, WITH TEMPERATURE DISPLAY.
3. UNIT HEATERS SHALL OPERATE INTERMITTENTLY BASED ON THEIR RESPECTIVE ROOM MOUNTED THERMOSTATS AND CYCLE ON/OFF TO MAINTAIN A MINIMUM ROOM TEMPERATURE OF 50°F (ADJ). UNIT HEATERS SHALL PROVIDE HEAT FOR OUTSIDE AIR PULLED INTO THE ROOM BY EF-1 & EF-3.
4. EXTERIOR WALL LOUVERS SHALL PROVIDE OUTSIDE AIR TO THE ROOM (MAKE-UP) FOR THE EXHAUST FANS.
5. MOTORIZED DAMPERS SHALL OPEN WHEN RESPECTIVE EXHAUST FAN IS ENERGIZED. MOTORIZED DAMPERS ON WALL LOUVER INTAKES SHALL BE OPENED WHEN EITHER FAN IS ENERGIZED.
6. IN THE EVENT OF A CHLORINE LEAK (BY MECHANICAL OR ELECTRICAL): ALL EXHAUST FANS AND UNIT HEATERS SHALL BE SHUT DOWN AND ALL DAMPERS SHALL CLOSE.

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LOUVER SCHEDULE

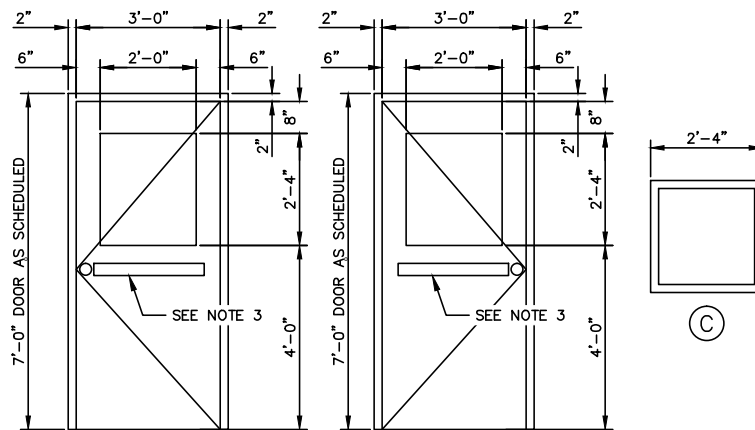
EQUIPMENT TAG NUMBER	LOU-01	LOU-02
BUILDING	CHLORINE BUILDING	CHLORINE BUILDING
AREA SERVED	FEED ROOM	STORAGE ROOM
DIRECTION	SEE PLANS	SEE PLANS
APPROX SIZE, WIDTH X HEIGHT	-	-
APPROX AIRFLOW, CFM	540	1165
FREE AREA, FT2	1.2	1.2
APPROX FREE AREA VELOCITY, FPM	-	-
MATERIAL	ALUMINUM	ALUMINUM
MANUFACTURER	GREENHECK	GREENHECK
MODEL	ESD-403	ESD-403
DAMPER	N/A	N/A
NOTES	1	1

REMARKS: (APPLICABLE TO ALL UNITS)

A. LOUVER SHALL BE PROVIDED AND INSTALLED BY THE GENERAL CONTRACTOR.

B. LOUVER PERFORMANCE AND CONSTRUCTION SHALL BE EQUAL TO THE MANUFACTURER/MODEL SCHEDULED.

C. PROVIDE WITH ALUMINUM BIRDCREEN.



DOOR/WINDOW TYPE ELEVATIONS
SCALE: N.T.S.

NOTES:

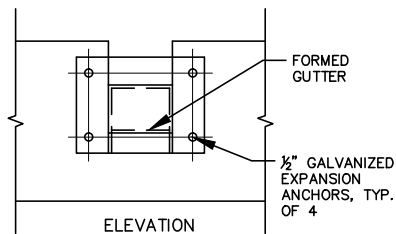
- ALL EXTERIOR DOORS PROVIDE WEATHER STRIPPING AROUND DOOR AT JAMB AND A RAIN DRIP AT BOTTOM OF DOOR AT THRESHOLD.
- ALL DOORS FRAMES TO BE 5 3/4" X 2" FIBERGLASS PROVIDED BY DOOR MFG.
- ALL DOORS TO BE PROVIDED WITH PUSH BAR - CRASH/EMERGENCY TYPE DOOR HARDWARE WITH CLOSERS.

DOOR SCHEDULE

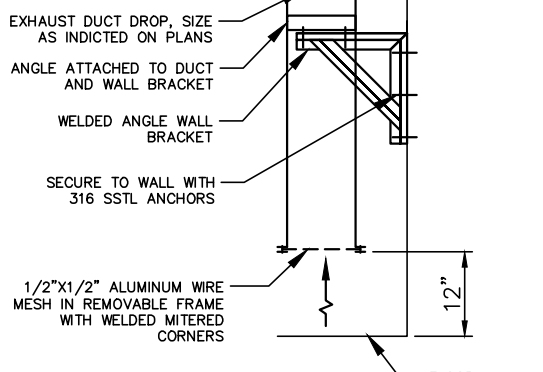
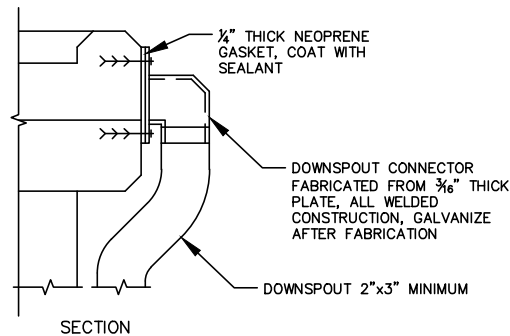
DOOR NO.	DOOR TYPE	TYPE FRAME	MATERIAL FRAME	DOOR SIZE	THK.	FIRE RATING (HOURS)	REMARKS
1	A	FIBERGLASS	FIBERGLASS	3'-0" X 7'-0"	0'-1 3/4"	3/4	SEE SPECS FOR HARDWARE SCHEDULE
2	B	FIBERGLASS	FIBERGLASS	3'-0" X 7'-0"	0'-1 3/4"	3/4	SEE SPECS FOR HARDWARE SCHEDULE

ROOM FINISH SCHEDULE

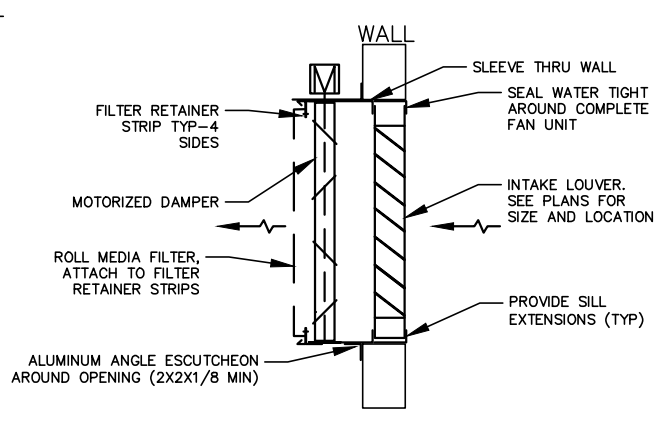
ROOM NO.	WALL				FLOOR	CEILING
	N	E	S	W		
1	PT	PT	PT	PT	CONC	PT
2	PT	PT	PT	PT	CONC	PT



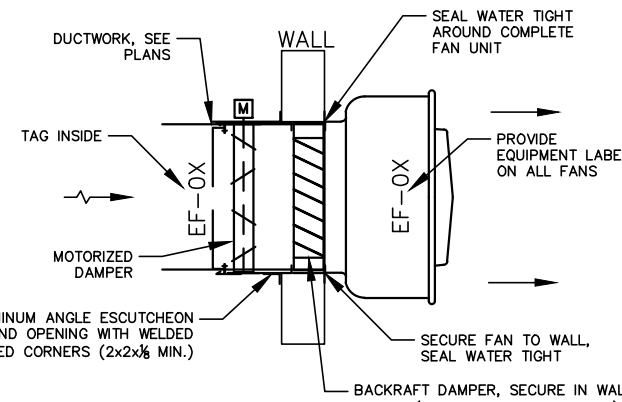
FABRICATED GUTTER CONNECTION
SCALE: NTS



WALL MOUNTED EXHAUST DUCT
SCALE: NTS



WALL MOUNTED INTAKE ASSEMBLY
SCALE: NTS



- NOTES:**
- ALL FASTENERS SHALL BE 316 SSSL UNLESS NOTED OTHERWISE

WALL MOUNTED EXHAUST FAN
SCALE: NTS



FAN SCHEDULE

EQUIPMENT TAG NUMBER	EF-01	EF-02	EF-03	EF-04
BUILDING	CHLORINE BUILDING	CHLORINE BUILDING	CHLORINE BUILDING	CHLORINE BUILDING
AREA SERVED	FEED ROOM	FEED ROOM	STORAGE ROOM	STORAGE ROOM
SERVICE	EXHAUST	EXHAUST	EXHAUST	EXHAUST
UNIT CONFIGURATION	CENTRIFUGAL	CENTRIFUGAL	CENTRIFUGAL	CENTRIFUGAL
DISCHARGE	SIDE WALL	SIDE WALL	SIDE WALL	SIDE WALL
ALTITUDE, FT. ABOVE SEA LEVEL	-	-	-	-
FAN MATERIAL OF CONSTRUCTION	ALUMINUM	ALUMINUM	ALUMINUM	ALUMINUM
FAN TYPE	CENTRIFUGAL	CENTRIFUGAL	CENTRIFUGAL	CENTRIFUGAL
AIRFLOW, CFM	125	415	265	900
TOTAL STATIC PRESSURE	0.04	0.11	0.13	0.45
AIR STREAM TEMP RANGE, DEG F	40-105	40-106	40-107	40-108
FAN RPM	1725	1725	1725	1725
DRIVE TYPE	DIRECT	DIRECT	DIRECT	DIRECT
MOTOR HP	1	1	1	1
MOTOR RPM	1725	1725	1725	1725
MOTOR ENCLOSURE	TEFC	TEFC	TEFC	TEFC
FAN CONTROL	CONSTANT SPEED	VARIABLE SPEED	CONSTANT SPEED	VARIABLE SPEED
VOLTS/PHASE/HERTZ	208/1/60	208/1/60	208/1/60	208/1/60
SOUND DATA (DBA @ 5FT. RADIUS)	51.2	58.8	55.2	60.9
VIBRATION ISOLATORS	MFG. STD.	MFG. STD.	MFG. STD.	MFG. STD.
ROOF/WALL OPENING SIZE, IN X IN	15.5" X 15.5"	15.5" X 15.5"	15.5" X 15.5"	15.5" X 15.5"
OPERATING WEIGHT, LBS	90	90	90	90
MANUFACTURER	GREENHECK	GREENHECK	GREENHECK	GREENHECK
MODEL NUMBER	CW-141-VG	CW-141-VG	CW-141-VG	CW-141-VG
BIRDSCREEN	ALUMINUM	ALUMINUM	ALUMINUM	ALUMINUM
ROOF CURB	N/A	N/A	N/A	N/A
DAMPER	GRAVITY	GRAVITY	GRAVITY	GRAVITY
FILTER(S)	N/A	N/A	N/A	N/A
NOTES	1,2,5	1,3,4,5	1,2,5	1,3,4,5
CONTROLS NOTES	C1	C2	C1	C2

REMARKS: (APPLICABLE TO ALL UNITS)

- A. SCHEDULE IS INCOMPLETE WITHOUT SPECIFICATION SECTION 15860.
- B. PROVIDE WITH SINGLE POINT POWER CONNECTION.

NOTES:

- PROVIDE WITH PREMIUM EFFICIENCY ELECTRONICALLY COMMUTATED (EC) MOTOR.
- THE MOTOR SPEED SHALL BE CONTROLLED BY A POTENTIOMETER DIAL ON THE MOTOR.
- THE MOTOR SPEED SHALL BE CONTROLLED BY THE POTENTIOMETER DIAL AND A REMOTE 0-10 VDC SIGNAL.
- PROVIDE WITH FACTORY MOUNTED 24V TRANSFORMER.
- PROVIDE FAN AND DAMPER WITH HIPRO POLYESTER COATING.

CONTROLS NOTES:

PROVIDE FAN CONTROL AS INDICATED BELOW AND IN ACCORDANCE WITH HVAC SEQUENCE OF OPERATION.

CONTRACTOR SHALL COORDINATE THE WORK OF ALL TRADES TO PROVIDE CONTROL INDICATED BELOW.

C1 ON-OFF SWITCHED CONTROL (BY ELECTRICAL). AUTO MODE: FAN SPEED VARIES BASED ON REMOTE 0-10 VDC SIGNAL FROM ROOM TEMPERATURE SENSOR (2.0 VDC FAN RUNS AT MINIMUM, 10.0 VDC FAN RUNS AT MAX SPEED SET BY MOTOR DIAL).

ELECTRIC UNIT HEATER SCHEDULE

EQUIPMENT TAG NUMBER	EHU-01	EHU-02
EQUIPMENT TYPE	INDUSTRIAL UNIT HEATER	INDUSTRIAL UNIT HEATER
BUILDING	CHLORINE BUILDING	CHLORINE BUILDING
AREA SERVED	FEED ROOM	STORAGE ROOM
TOTAL CAPACITY, KW	3	3
AIRFLOW, CFM	362	362
AIR THROW, FT	15	15
AIR TEMP RISE, DEG F	21	21
FAN TYPE	PROPELLER	PROPELLER
MOTOR ENCLOSURE	MFG STD	MFR STD
MOTOR RPM	1200	1200
TERMINAL ENCLOSURE	MFR STD	MFR STD
RATING	NON-HAZARDOUS NON CHROSIVE	NON-HAZARDOUS NON CHROSIVE
VOLTS/PHASE/HERTZ	208/1/60	208/1/60
TOTAL CURRENT DRAW, AMPS	17	17
EMERGENCY POWER	NO	NO
OPERATING WEIGHT, LBS	45	45
MANUFACTURER	INDEECO	INDEECO
MODEL NUMBER	238-UT03C	238-UT03C
NOTES	1-6	1-6

REMARKS: (APPLICABLE TO ALL UNITS)

A. SCHEDULE IS INCOMPLETE WITHOUT SPECIFICATION SECTION 15550.

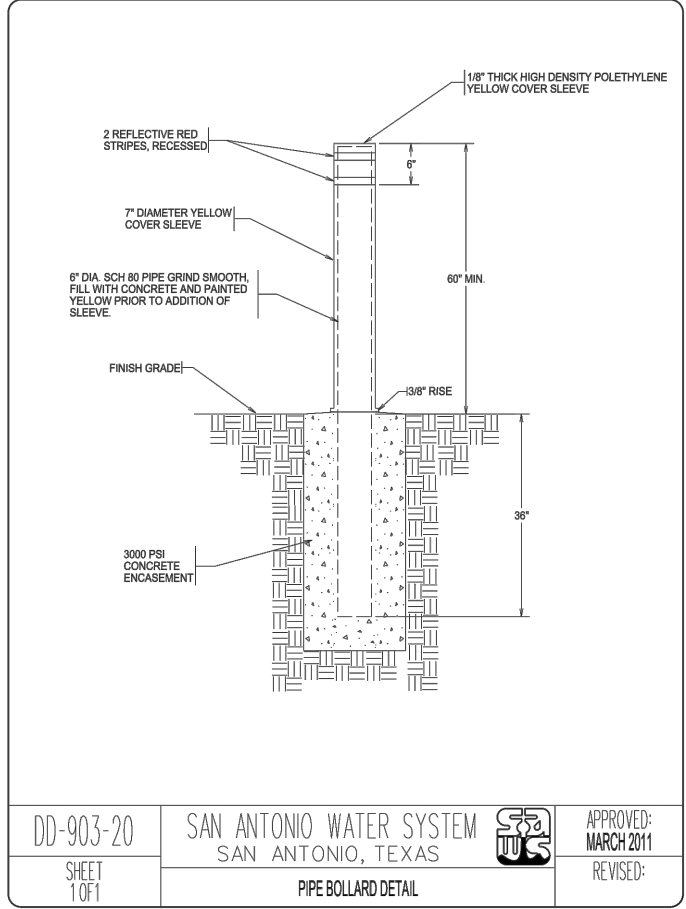
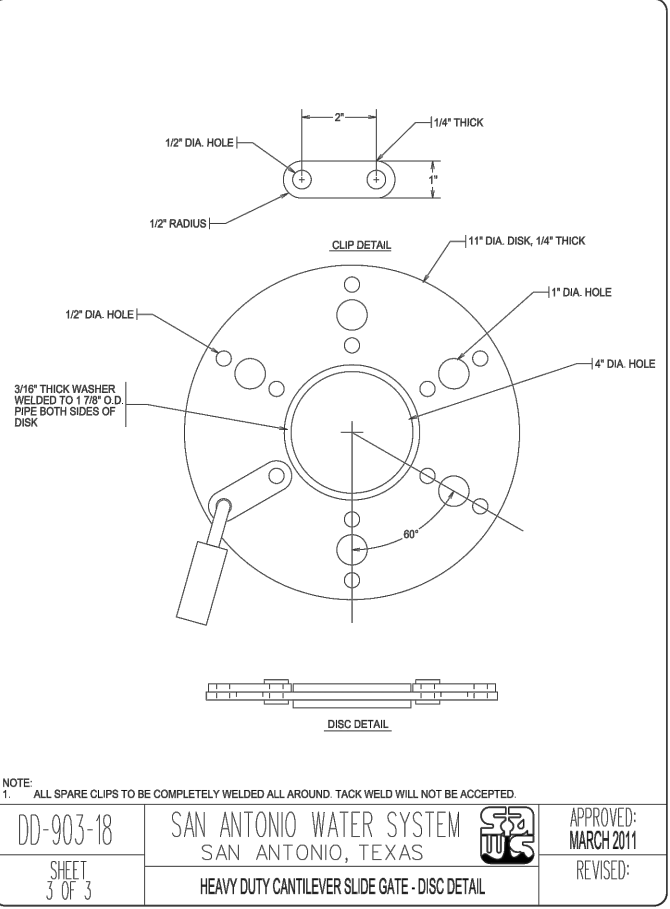
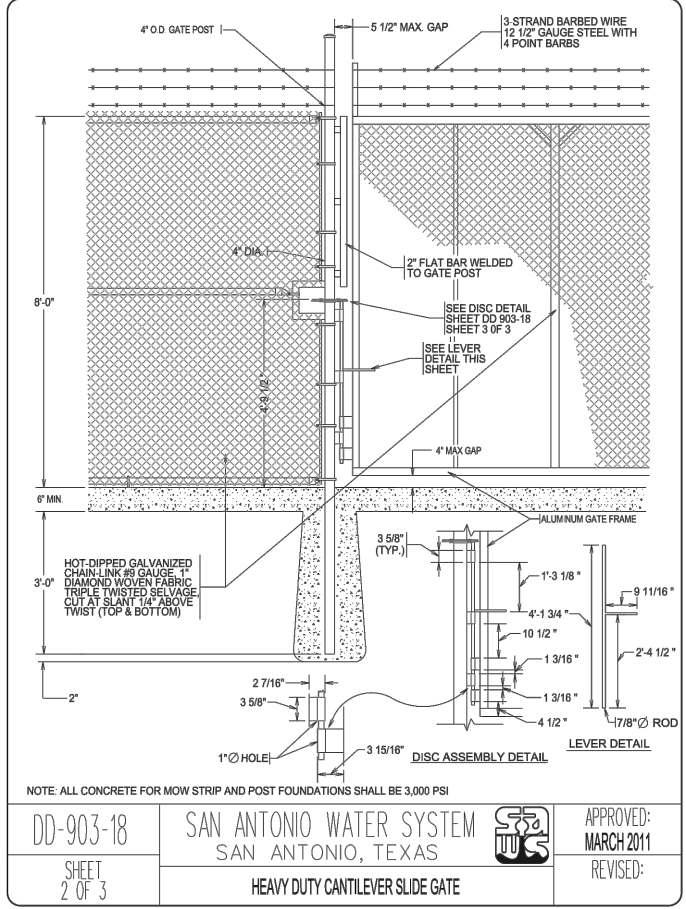
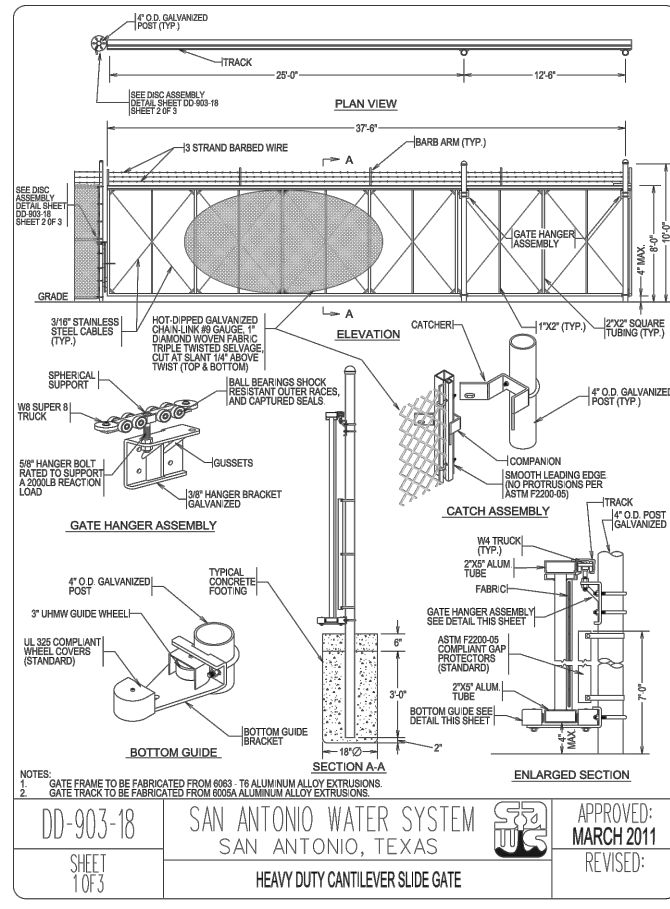
NOTES:

- MOUNT AT 7'-0" AFF MINIMUM, UNLESS NOTED OTHERWISE ON PLANS.
- UNIT SHALL BE SINGLE POINT ELECTRICAL CONNECTION WITH INTEGRAL TRANSFORMER FOR UNIT CONTROLS AND DISCONNECT.
- PROVIDE WITH SWIVEL BRACKET FOR WALL MOUNTING WHERE SHOWN ON PLANS.
- PROVIDE WITH PILOT LIGHT FOR "HEATER ELEMENT ON" INDICATION.
- HEATING ELEMENTS SHALL BE STAINLESS STEEL.
- PROVIDE WITH REMOTE WALL-MOUNTED THERMOSTAT, AND AUTO RESET.

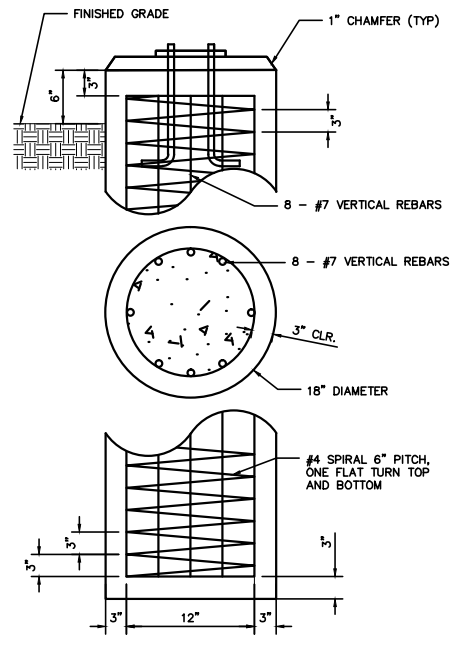


5	ADDENDUM NO.	5	P.E. SEAL DATE	W.C.C.	11.04.2015
No.				Approved	Date
				Revision	

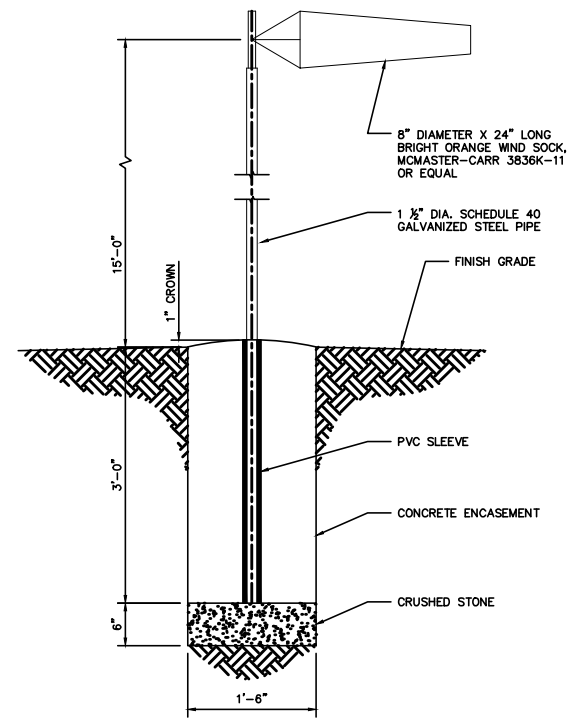
SAN ANTONIO WATER SYSTEM
DSP CLAYTON TANK REPLACEMENT PROJECT
HVAC EQUIPMENT TABLE



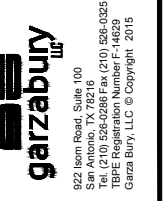
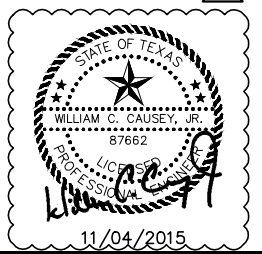
SITE GATE DETAILS



GATE ACCESS STATION REINFORCEMENT DETAIL
 SCALE: NTS



WINDSOCK DETAIL
 SCALE: NTS

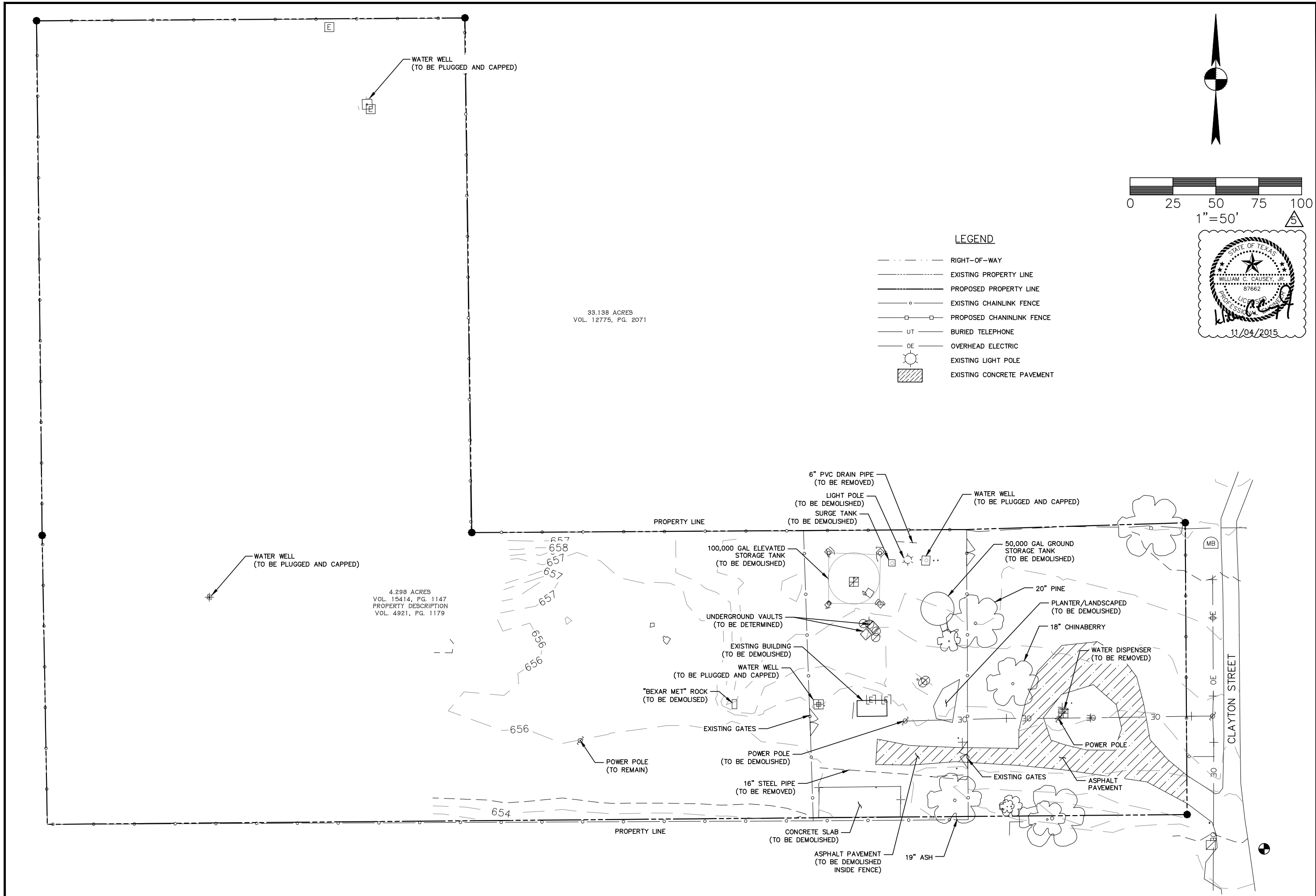


5	ADDENDUM NO. 5	P.E. SEAL DATE	11.04.2015
	W.C.C.	Approved	Date
		Revision	No.

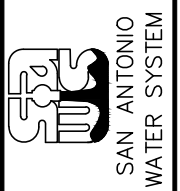
SAN ANTONIO WATER SYSTEM
 DSP CLAYTON TANK REPLACEMENT PROJECT
 MISCELLANEOUS DETAILS I

DATE:	OCTOBER 2015
DESIGNED BY:	BAL
DRAWN BY:	FJC
REVIEWED BY:	WCC
GB PRJ.#:	103187-00001

Date: Nov. 04, 2015, 11:40am User ID: fcontero
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SAWS JOB NO.
P-14-6101



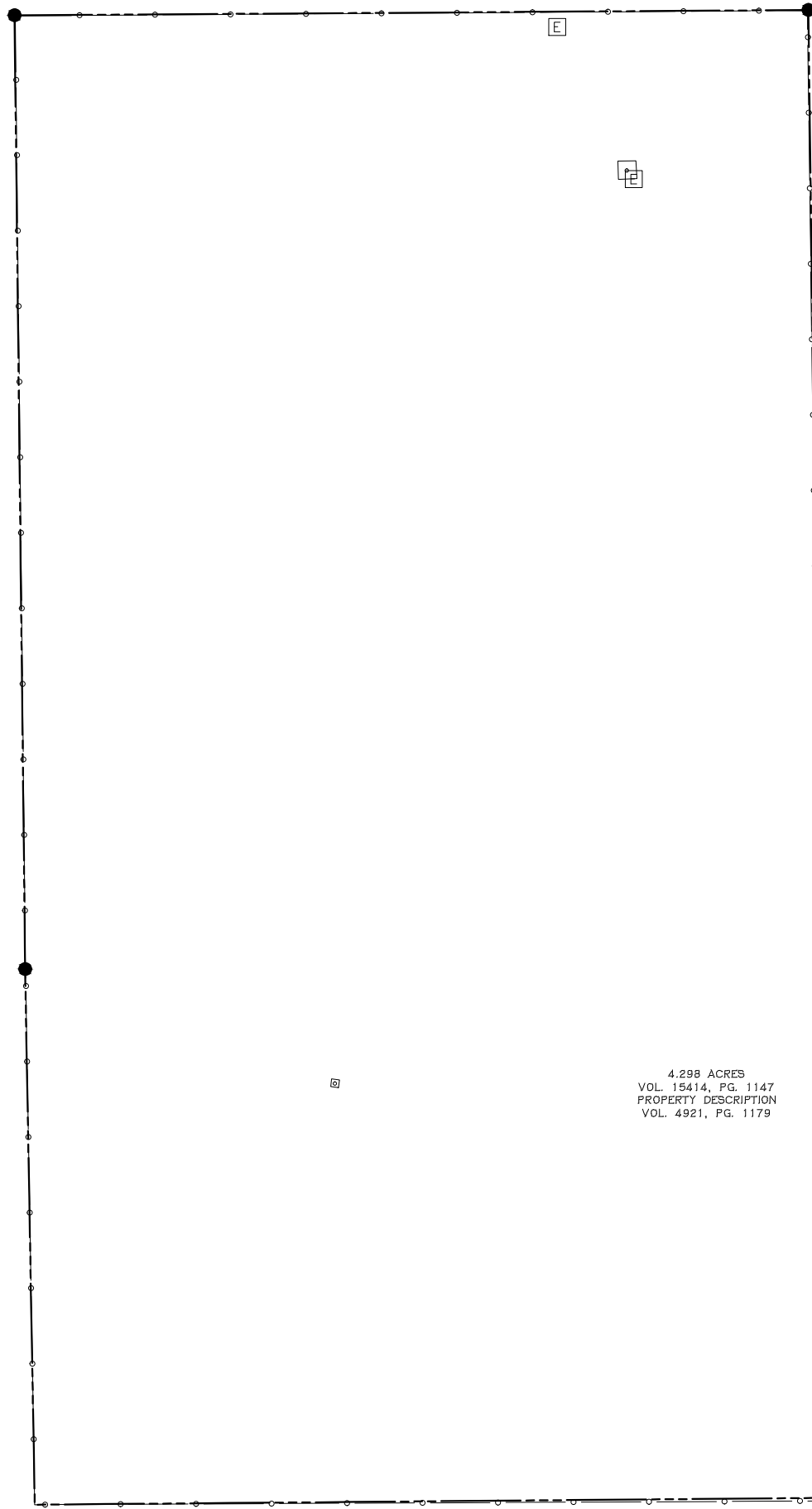
5	ADDENDUM NO.	5	P.E. SEAL DATE	W.C.C.	11.04.2015
No.				Approved	Date

SAN ANTONIO WATER SYSTEM
 DSP CLAYTON TANK REPLACEMENT PROJECT
 CLAYTON EXISTING SITE PLAN

DATE: OCTOBER 2015
 DESIGNED BY: BAL
 DRAWN BY: FJC
 REVIEWED BY: WCC
 GB PRJ.#: 103187-00001

SHEET
C-CPS-1
SHEET 90 OF 99

Date: Nov. 04, 2015, 11:41am User ID: fcantero
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E

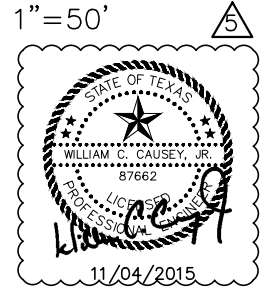
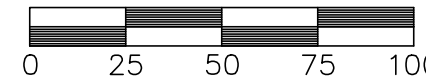
E

B

4.298 ACRES
 VOL. 15414, PG. 1147
 PROPERTY DESCRIPTION
 VOL. 4921, PG. 1179

33.138 ACRES
 VOL. 12775, PG. 2071

BENCHMARK DATA			
POINT #	NORTHING	EASTING	ELEVATION
TBM A	13632008.2300	2075389.8950	655.41
TBM B	13631345.8200	2075365.4250	639.88



TBM A
 1/2 INCH IRON ROD WITH BPI CAP IN THE EASTERLY RIGHT OF WAY OF CLAYTON STREET, ±134'
 NORTH OF JAMES STREET
 ELEV.=655.41'

TBM B
 1/2 INCH IRON ROD WITH BPI CAP IN THE CLAYTON STREET RIGHT OF WAY, ±528' SOUTH OF
 JAMES STREET.
 ELEV.=639.88'

TBM B LOCATED
 APPROX. 660'



SAWS JOB NO.
 P-14-6101



ADDENDUM NO.	5	P.E. SEAL DATE	W.C.C.	11.04.2015
No.			Approved	Date

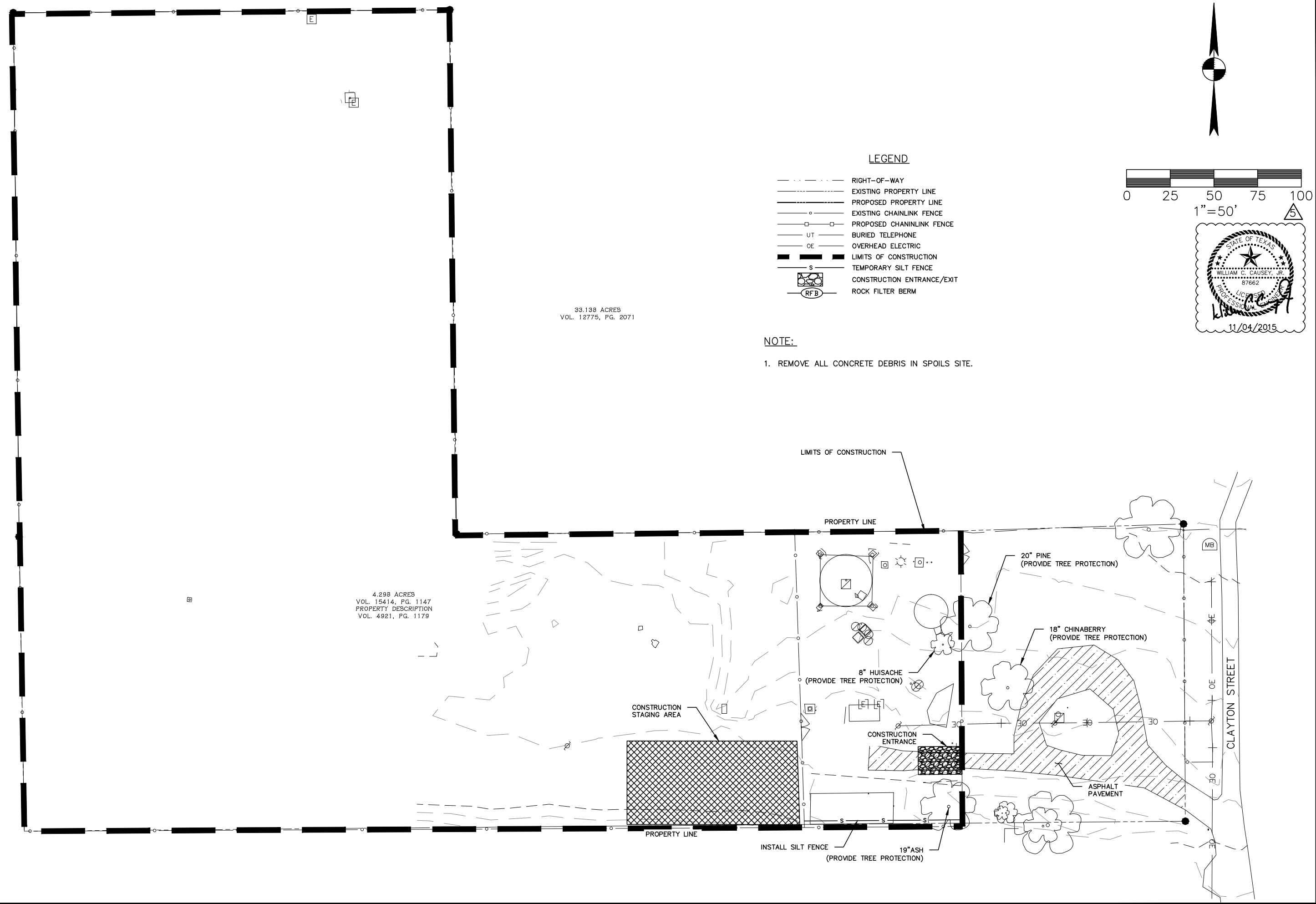
SAN ANTONIO WATER SYSTEM
 DSP CLAYTON TANK REPLACEMENT PROJECT

DATE: OCTOBER 2015
 DESIGNED BY: BAL
 DRAWN BY: FJC
 REVIEWED BY: WCC
 CB PRJ.#: 103187-00001

SHEET
 C-CPS-3
 SHEET 92 OF 99

HORIZONTAL & VERTICAL
 CONTROL PLAN

Date: Nov. 04, 2015, 11:41am User ID: fcantero
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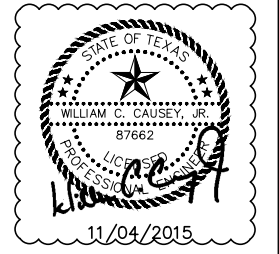
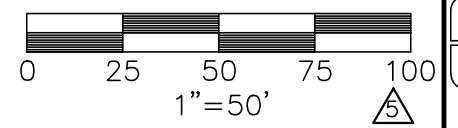


33.138 ACRES
 VOL. 12775, PG. 2071

4.298 ACRES
 VOL. 15414, PG. 1147
 PROPERTY DESCRIPTION
 VOL. 4921, PG. 1179

LEGEND

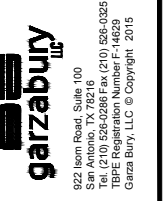
- RIGHT-OF-WAY
- EXISTING PROPERTY LINE
- PROPOSED PROPERTY LINE
- o- EXISTING CHAINLINK FENCE
- o- PROPOSED CHAINLINK FENCE
- UT BURIED TELEPHONE
- OE OVERHEAD ELECTRIC
- LIMITS OF CONSTRUCTION
- S TEMPORARY SILT FENCE
- [Hatched Box] CONSTRUCTION ENTRANCE/EXIT
- [Circle with RFB] ROCK FILTER BERM



NOTE:

1. REMOVE ALL CONCRETE DEBRIS IN SPOILS SITE.

SAWS JOB NO.
 P-14-6101



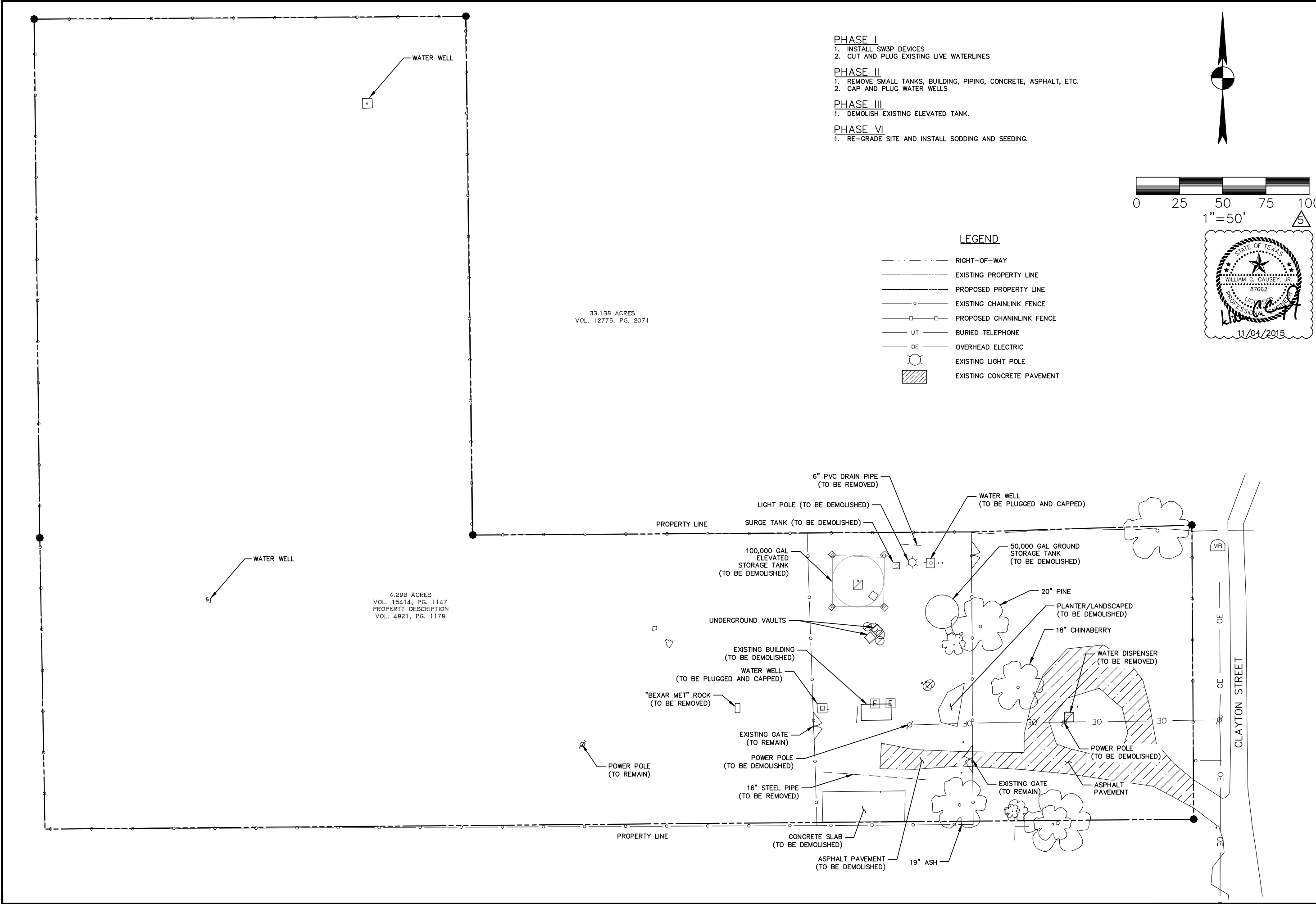
5	ADDENDUM NO.	5	P.E. SEAL DATE	W.C.C.	11.04.2015
No.				Approved	Date

SAN ANTONIO WATER SYSTEM
 DSP CLAYTON TANK REPLACEMENT PROJECT
STORM WATER POLLUTION PREVENTION PLAN AND TREE PROTECTION PLAN

DATE: OCTOBER 2015
 DESIGNED BY: BAL
 DRAWN BY: FJC
 REVIEWED BY: WCC
 GB PRJ.#: 103187-00001

SHEET
 C-CPS-4
 SHEET93 OF99

Date: Nov. 04, 2015, 11:42am User ID: fcantero
 File: G:\103187\00001\10318700001\CPS_CSO_PH01.dwg



33.138 ACRES
 VOL. 12775, PG. 2071

4.298 ACRES
 VOL. 15414, PG. 1147
 PROPERTY DESCRIPTION
 VOL. 4921, PG. 1179

PHASE I
 1. INSTALL SW3P DEVICES
 2. CUT AND PLUG EXISTING LIVE WATERLINES

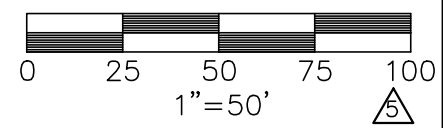
PHASE II
 1. REMOVE SMALL TANKS, BUILDING, PIPING, CONCRETE, ASPHALT, ETC.
 2. CAP AND PLUG WATER WELLS

PHASE III
 1. DEMOLISH EXISTING ELEVATED TANK.

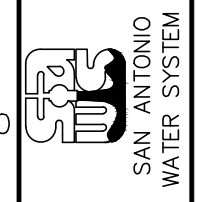
PHASE VI
 1. RE-GRADE SITE AND INSTALL SODDING AND SEEDING.

LEGEND

- RIGHT-OF-WAY
- - - EXISTING PROPERTY LINE
- PROPOSED PROPERTY LINE
- ○ — EXISTING CHAINLINK FENCE
- □ — PROPOSED CHAINLINK FENCE
- UT — BURIED TELEPHONE
- OE — OVERHEAD ELECTRIC
- ☉ EXISTING LIGHT POLE
- ▨ EXISTING CONCRETE PAVEMENT



SAWS JOB NO.
 P-14-6101



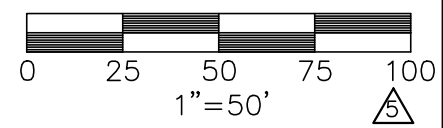
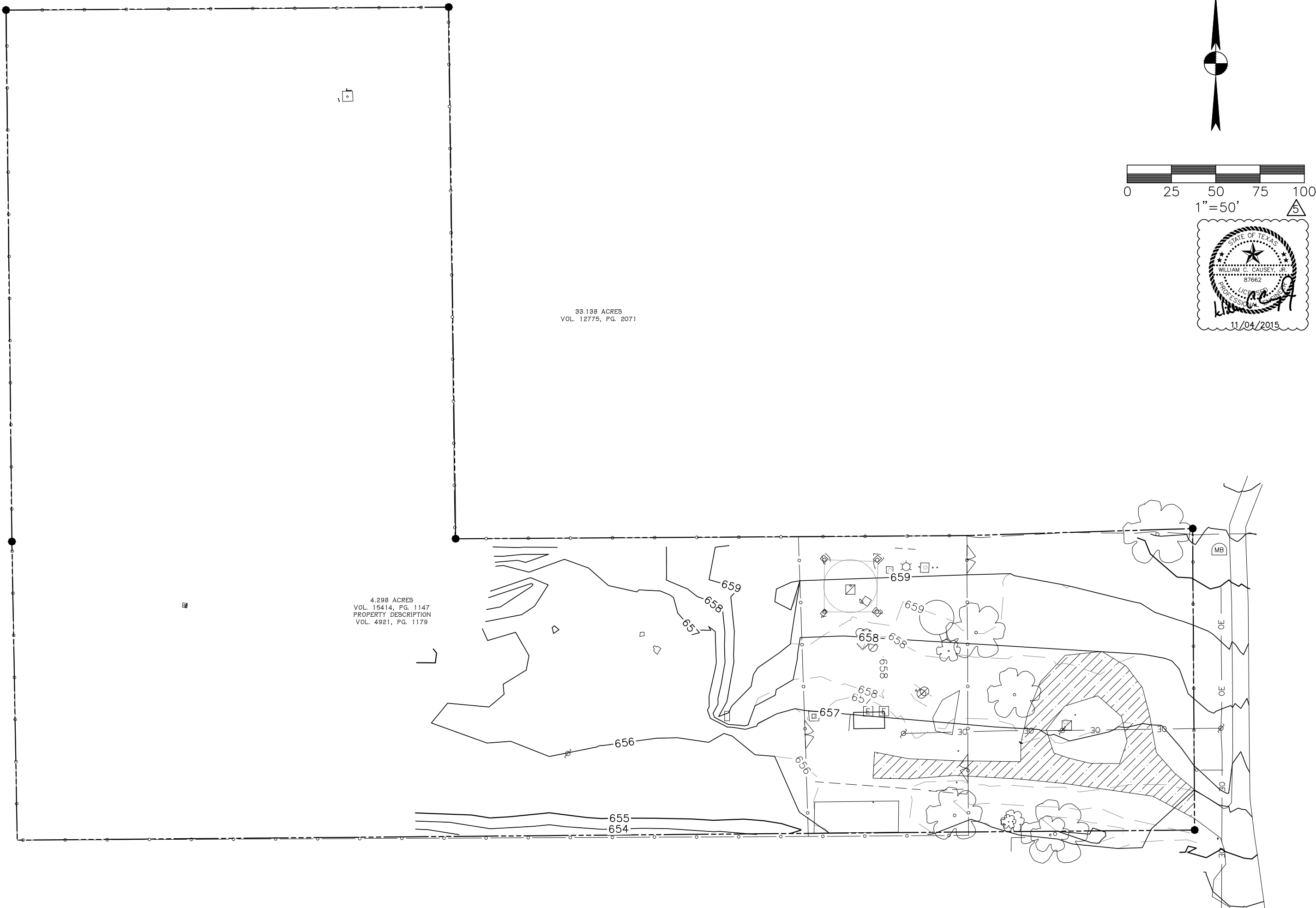
5	ADDENDUM NO.	5	P.E. SEAL DATE	W.C.C.	11.04.2015
No.				Approved	Date

SAN ANTONIO WATER SYSTEM
 DSP CLAYTON TANK REPLACEMENT PROJECT
 CONSTRUCTION SEQUENCE

DATE: OCTOBER 2015	DESIGNED BY: BAL
DRAWN BY: FJC	REVIEWED BY: WCC
GB PRJ.#: 103187-00001	

SHEET
 C-CPS-7
 SHEET 96 OF 99

Date: Nov 04, 2015, 11:42am User ID: fcontero
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SAWS JOB NO.
 P-14-6101



ADDENDUM NO.	5	P.E. SEAL DATE	W.C.C.	11.04.2015
No.		Revision	Approved	Date

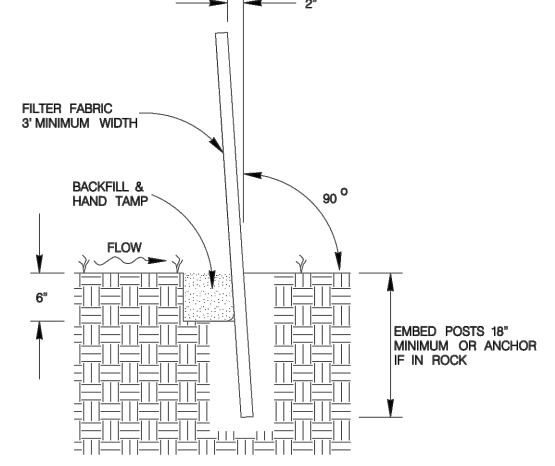
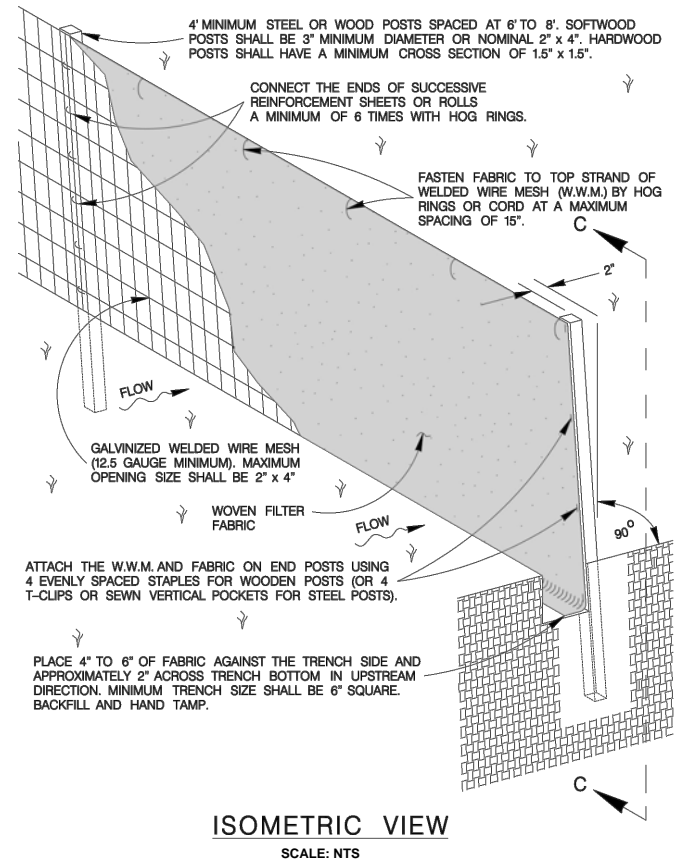
SAN ANTONIO WATER SYSTEM
 DSP CLAYTON TANK REPLACEMENT PROJECT
 CLAYTON GRADING LAYOUT

DATE: OCTOBER 2015
 DESIGNED BY: BAL
 DRAWN BY: FJC
 REVIEWED BY: WCC
 CB PRJ.#: 103187-00001

SHEET
 C-CPS-8
 SHEET97 OF99

5	ADDENDUM NO. 5	P.E. SEAL DATE	W.C.C.	11.04.2015
			Approved	Date
			Revision	No.

DATE:	OCTOBER 2015	DESIGNED BY:	BAL
DRAWN BY:	FJC	REVIEWED BY:	WCC
GB PRJ.#:	103187-00001		



TEMPORARY SEDIMENT CONTROL FENCE

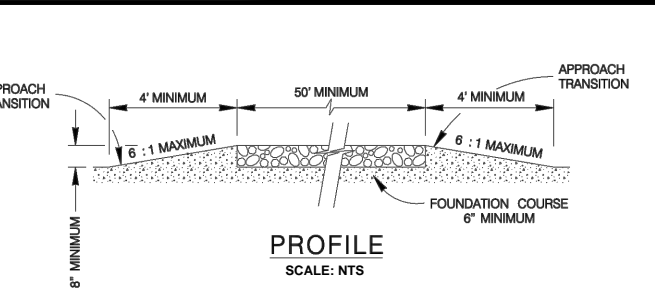
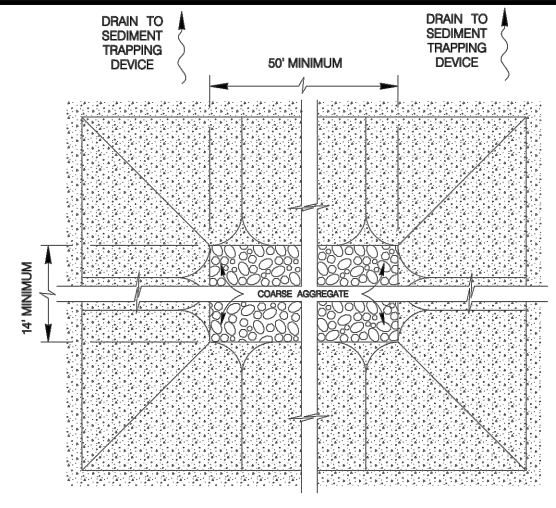
SEDIMENT CONTROL FENCE USAGE GUIDELINES

A SEDIMENT CONTROL FENCE MAY BE CONSTRUCTED NEAR THE DOWNSTREAM PERIMETER OF A DISTURBED AREA ALONG A CONTOUR TO INTERCEPT SEDIMENT FROM OVERLAND RUN-OFF. A 2 YEAR STORM FREQUENCY MAY BE USED TO CALCULATE THE FLOW RATE TO BE FILTERED.

SEDIMENT CONTROL FENCE SHOULD BE SIZED TO FILTER A MAXIMUM FLOW THRU RATE OF 100 GPM /FT SQUARED. SEDIMENT CONTROL FENCE IS NOT RECOMMENDED TO CONTROL EROSION FROM A DRAINAGE AREA LARGER THAN 2 ACRES.

GENERAL NOTES

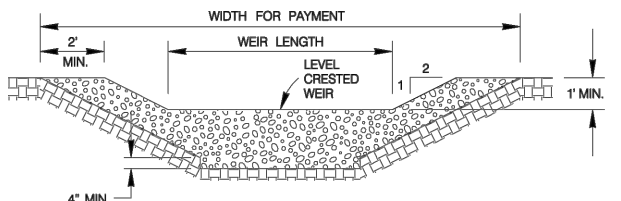
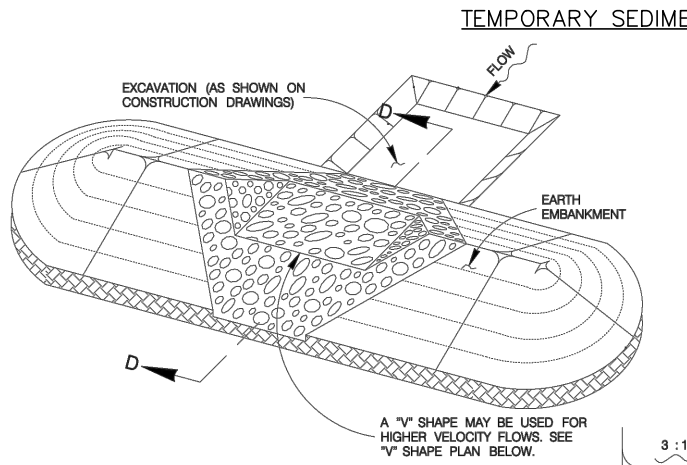
1. THE GUIDELINES SHOWN HEREON ARE SUGGESTIONS ONLY AND MAY BE MODIFIED BY THE ENGINEER.



CONSTRUCTION EXIT TYPE 1

GENERAL NOTES

1. THE LENGTH OF THE TYPE 1 CONSTRUCTION EXIT SHALL BE AS INDICATED ON THE PLANS, BUT NOT LESS THAN 50'.
2. THE COARSE AGGREGATE SHOULD BE OPEN GRADED WITH A SIZE OF 4" TO 8".
3. THE APPROACH TRANSITIONS SHOULD BE NO STEEPER THAN 6 : 1 AND CONSTRUCTED AS DIRECTED BY THE ENGINEER.
4. THE CONSTRUCTION EXIT FOUNDATION COURSE SHALL BE FLEXIBLE BASE, BITUMINOUS CONCRETE, PORTLAND CEMENT CONCRETE OR OTHER MATERIAL AS APPROVED BY THE ENGINEER.
5. THE CONSTRUCTION EXIT SHALL BE GRADED TO ALLOW DRAINAGE TO A SEDIMENT TRAPPING DEVICE.
6. THE GUIDELINES SHOWN HEREON ARE SUGGESTIONS ONLY AND MAY BE MODIFIED BY THE ENGINEER.



ROCK FILTER DAM USAGE GUIDELINES

ROCK FILTER DAMS SHOULD BE CONSTRUCTED DOWNSTREAM FROM DISTURBED AREAS TO INTERCEPT SEDIMENT FROM OVERLOAD RUNOFF AND /OR CONCENTRATED FLOW. THE DAMS SHOULD BE SIZED TO FILTER A MAXIMUM FLOW THRU RATE OF 80 GPM /FT SQUARED OF CROSS SECTIONAL AREA. A 2 YEAR STORM FREQUENCY MAY BE USED TO CALCULATE THE FLOW RATE.

TYPE 1 (18" HIGH WITH NO WIRE MESH):

TYPE 1 MAY BE USED AT THE TOE OF SLOPES, AROUND INLETS, IN SMALL DITCHES AND AT DIKE OR SWALE OUTLETS. THIS TYPE OF DAM IS RECOMMENDED TO CONTROL EROSION FROM A DRAINAGE AREA OF 5 ACRES OR LESS. TYPE 1 MAY NOT BE USED IN CONCENTRATED HIGH VELOCITY FLOWS (APPROXIMATELY 8 FT./SEC. OR MORE) IN WHICH AGGREGATE WASH OUT MAY OCCUR. SANDBAGS MAY BE USED AT THE EMBEDDED FOUNDATION (4" DEEP MIN.) FOR BETTER FILTERING EFFICIENCY OF LOW FLOWS IF CALLED FOR ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

TYPE 2 (18" HIGH WITH WIRE MESH):

TYPE 2 MAY BE USED IN DITCHES AND AT DIKE OR SWALE OUTLETS.

TYPE 3 (36" HIGH WITH WIRE MESH):

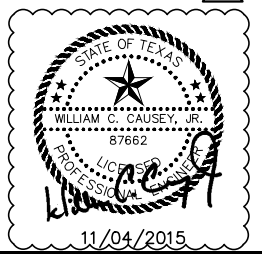
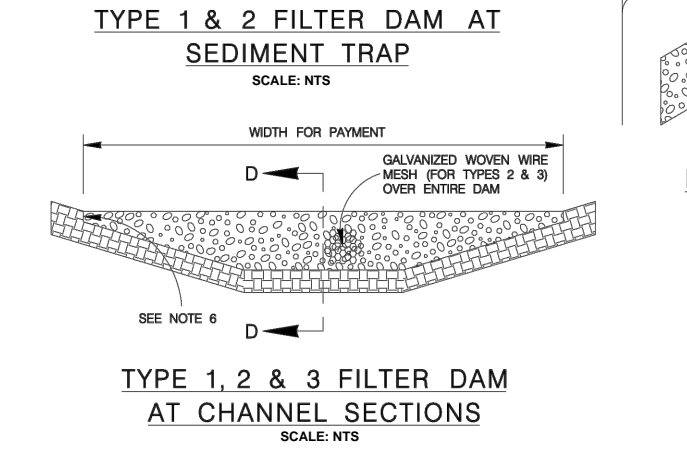
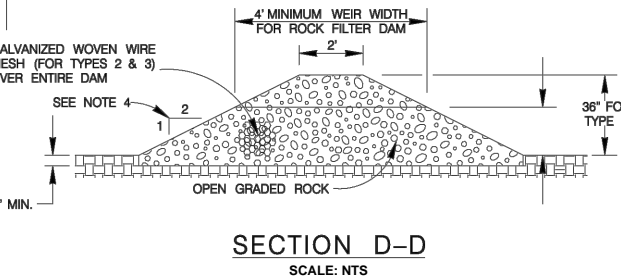
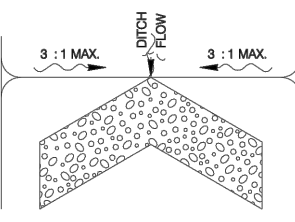
TYPE 3 MAY BE USED IN STREAM FLOW AND SHOULD BE SECURED TO THE STREAM BED.

TYPE 4 (SACK GABIONS):

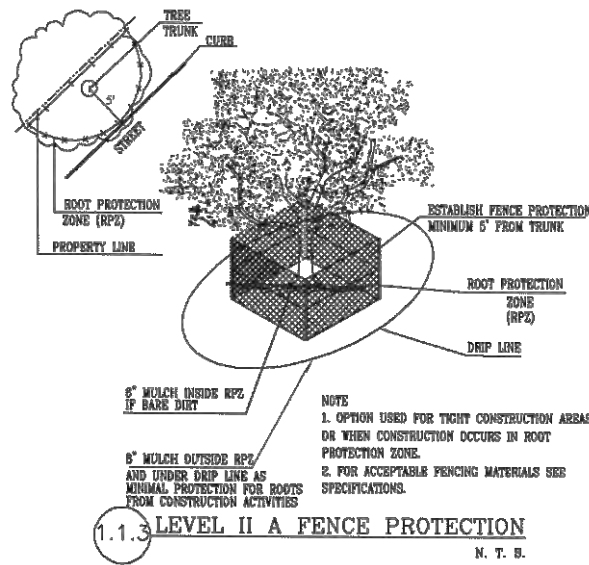
TYPE 4 MAY BE USED IN DITCHES AND SMALLER CHANNELS TO FORM AN EROSION CONTROL DAM.

GENERAL NOTES

1. IF SHOWN ON THE PLANS OR DIRECTED BY THE ENGINEER, FILTER DAMS SHOULD BE PLACED NEAR THE TOE OF SLOPES WHERE EROSION IS ANTICIPATED, UPSTREAM AND /OR DOWNSTREAM AT DRAINAGE STRUCTURES, AND IN ROADWAY DITCHES AND CHANNELS TO COLLECT SEDIMENT.
2. MATERIALS (AGGREGATE, WIRE MESH, SANDBAGS, ETC.) SHALL BE AS INDICATED BY THE SPECIFICATION FOR ROCK FILTER DAMS FOR EROSION AND SEDIMENTATION CONTROL.
3. THE ROCK FILTER DAM DIMENSIONS SHALL BE AS INDICATED ON THE STORM WATER POLLUTION PREVENTION PLANS.
4. SIDE SLOPES SHOULD BE 2 : 1 OR FLATTER. DAMS WITHIN THE SAFETY ZONE SHALL HAVE SIDE SLOPES OF 6 : 1 OR FLATTER.
5. MAINTAIN A MINIMUM OF 1' BETWEEN TOP OF ROCK FILTER DAM WEIR AND TOP OF EMBANKMENT FOR FILTER DAMS AT SEDIMENT TRAPS.
6. FILTER DAMS SHOULD BE EMBEDDED A MINIMUM OF 4" INTO THE EXISTING GROUND.
7. THE SEDIMENT TRAP FOR PONDING OF SEDIMENT LADEN RUNOFF SHALL BE OF THE DIMENSIONS SHOWN ON THE PLANS.
8. ROCK FILTER DAM TYPES 2 & 3 SHALL BE SECURED WITH 20 GAUGE GALVANIZED WOVEN WIRE MESH WITH 1" DIAMETER HEXAGONAL OPENINGS. THE AGGREGATE SHALL BE PLACED ON THE MESH TO THE HEIGHT AND SLOPES SPECIFIED. THE MESH SHALL BE FOLDED AT THE UPSTREAM SIDE OVER THE AGGREGATE AND TIGHTLY SECURED TO ITSELF ON THE DOWNSTREAM SIDE USING WIRE TIES OR HOG RINGS. IN STREAM USE, THE MESH SHOULD BE SECURED OR STAKED TO THE STREAM BED PRIOR TO AGGREGATE PLACEMENT.
9. SACK GABIONS SHOULD BE STAKED DOWN WITH 3/4" DIA. REBAR STAKES.
10. FLOW OUTLET SHOULD BE ONTO A STABILIZED AREA (VEGETATION, ROCK, ETC.).
11. THE GUIDELINES SHOWN HEREON ARE SUGGESTIONS ONLY AND MAY BE MODIFIED BY THE ENGINEER.

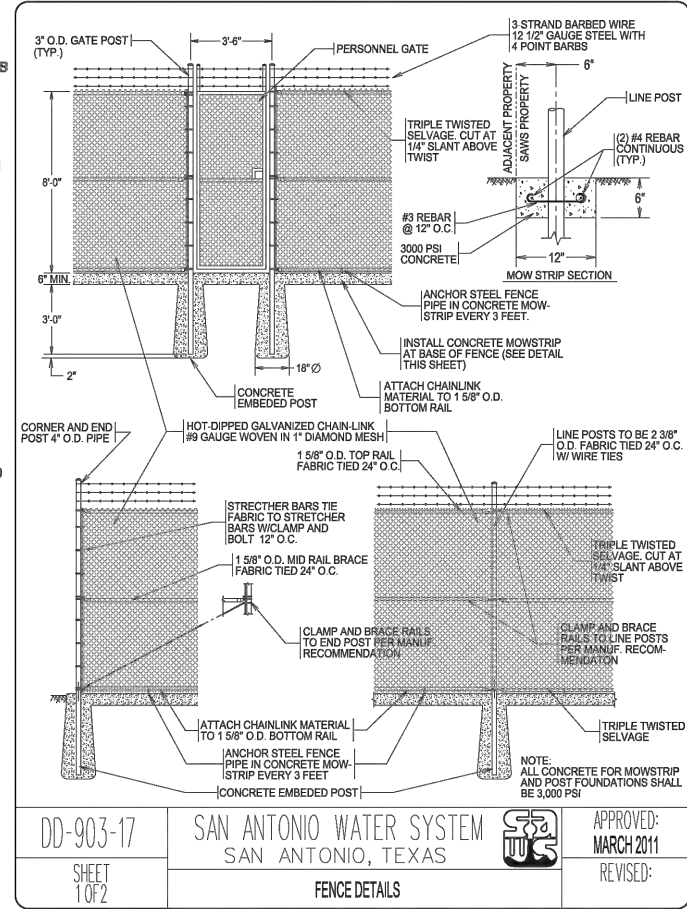


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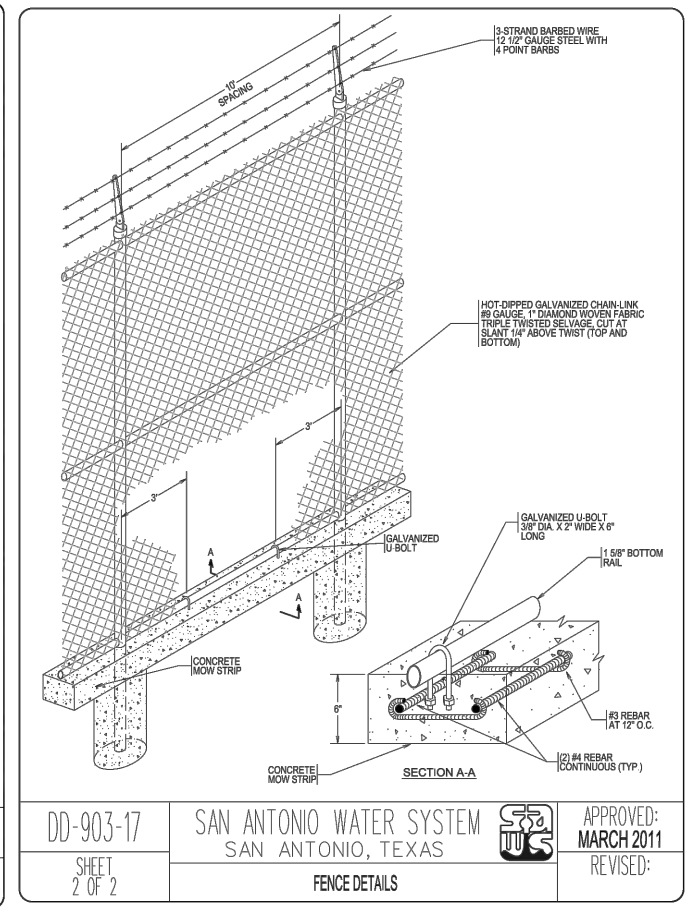


- GENERAL NOTES**
- ALL THE TREES WITH A DIAMETER GREATER THAN 3 INCHES AFFECTED BY CONSTRUCTION SHALL HAVE THE LIMBS AND ROOTS TRIMMED AND PRUNED ACCORDING TO ITEM No. 802. TREE PRUNING, SOIL AMENDING AND FERTILIZATION, UNLESS SPECIFIED TREES SHALL RECEIVE LEVEL 2 PROTECTION AS PER ITEM No. 802. TREES TO RECEIVE LEVEL 1 PROTECTION AS PER ITEM No. 802 ARE SHOWN ON TREE PROTECTION TABLE ON THIS SHEET.
 - ALL TREES SHALL REMAIN UNLESS NOTED ON THE PLANS.
 - NO SITE PREPARATION WORK SHALL BEGIN IN AREAS WHERE TREE PRESERVATION AND TREATMENT MEASURES HAVE NOT BEEN COMPLETED AND APPROVED.
 - TREE PROTECTION FENCING SHALL BE REQUIRED. TREE PROTECTION FENCING SHALL BE INSTALLED, MAINTAINED AND REPAIRED BY THE CONTRACTOR DURING SITE CONSTRUCTION.
 - THE CONTRACTOR SHALL AVOID CUTTING ROOTS LARGER THAN THREE INCHES IN DIAMETER WHEN EXCAVATING NEAR EXISTING TREES. EXCAVATION IN THE VICINITY OF TREES SHALL PROCEED WITH CAUTION. THE CONTRACTOR SHALL CONTACT THE CITY INSPECTOR.
 - THE ROOT PROTECTION ZONE IS THAT AREA SURROUNDING A TREE, AS MEASURED BY A RADIUS FROM THE TREE TRUNK, IN WHICH NO EQUIPMENT, VEHICLES OR MATERIALS MAY OPERATE OR BE STORED. THE REQUIRED RADIUS LENGTH IS 1 FOOT PER DIAMETER INCH OF THE TREE. FOR EXAMPLE, A 10-INCH DIAMETER TREE WOULD HAVE A 5-FOOT RADIUS ROOT PROTECTION ZONE AROUND THE TREE. ROOTS OR BRANCHES THAT ARE IN CONFLICT WITH THE CONSTRUCTION SHALL BE CUT CLEANLY ACCORDING TO PROPER PRUNING METHODS. LIVE OAK WOUNDS SHALL BE PAINTED OVER, WITHIN 20 MINUTES TO PREVENT OAK WILT.
 - ACCESS TO FENCED AREAS WILL BE PERMITTED ONLY WITH THE APPROVAL OF THE ENGINEER OR CITY INSPECTOR.
 - GRADING, IF REQUIRED, SHALL BE LIMITED TO A 3 INCH CUT OR FILL WITHIN THE FENCED ROOT ZONE AREAS.
 - TREES, SHRUBS OR BUSHES TO BE CLEARED FROM PROTECTED ROOT ZONE AREAS SHALL BE REMOVED BY HAND AS DIRECTED BY THE PROJECT MANAGER OR CITY INSPECTOR.
 - TREES DAMAGED OR LOST DUE TO CONTRACTOR'S NEGLIGENCE DURING CONSTRUCTION SHALL BE MITIGATED TO THE ENGINEER'S SATISFACTION.
 - EXPOSED ROOTS SHALL BE COVERED AT THE END OF EACH DAY USING TECHNIQUES SUCH AS COVERING WITH SOIL, MULCH OR WET BURLAP.
 - ANY TREE REMOVAL SHALL BE APPROVED BY THE CITY ARBORIST PRIOR TO ITS REMOVAL.

TREE PROTECTION DETAILS



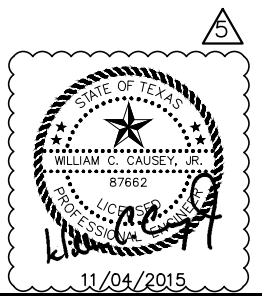
DD-903-17
 SHEET 1 OF 2
 SAN ANTONIO WATER SYSTEM
 SAN ANTONIO, TEXAS
 APPROVED: MARCH 2011
 REVISED:



DD-903-17
 SHEET 2 OF 2
 SAN ANTONIO WATER SYSTEM
 SAN ANTONIO, TEXAS
 APPROVED: MARCH 2011
 REVISED:

FENCE DETAILS

NOTE:
 PERSONNEL GATE WIDTH SHALL MATCH EXISTING. MINIMUM WIDTH OF 3'-6\"/>



ADDENDUM NO.	5 P.E. SEAL DATE	W.C.C.	11.04.2015
No.	Revision	Approved	Date

SAN ANTONIO WATER SYSTEM
 DSP CLAYTON TANK REPLACEMENT PROJECT
 MISCELLANEOUS DETAILS II

DATE: OCTOBER 2015	DESIGNED BY: BAL	DRAWN BY: FJC	REVIEWED BY: WCC	GB PRJ.#: 103187-00001
SHEET SD-2				
SHEET 99 OF 99				