



**SAN ANTONIO WATER SYSTEM
CENTRAL WATER INTEGRATION PIPELINE
MALTSBERGER PUMP STATION IMPROVEMENTS
SAWS Job No. 18-8617
SAWS Solicitation No. CO-00190**

**ADDENDUM No. 4
August 31, 2018**

To Bidder of Record:

This addendum, applicable to work referenced above, is an amendment to the bidding documents and as such will be made a part of and included in the Contract Documents. Acknowledge receipt of this addendum by entering the addendum number and issue date in the space provided in submitted copies of the proposal.

QUESTIONS AND ANSWERS

1. See Addendum No. 4, Questions and Answers, included with this addendum, which includes responses to questions received by the deadline of 10:00 am CDT on August 23, 2018 and additional questions posed after the deadline.
2. Questions and Answers contained in Addendum No. 4 are either revisions to previously answered questions or answers to new questions received.

REVISIONS TO CONTRACT DOCUMENTS AND TECHNICAL SPECIFICATIONS

TECHNICAL SPECIFICATIONS

SECTION 01040 – COORDINATION

a) On Page 01040-1, ADD the following as Paragraph 1.01.H.2:

2. Pipeline Segment 5-4

Contractor to coordinate shut down of 24” water line at PRV-3 on Maplewood Drive with the Central Water Integration Pipeline Segment 5-4 Project.

SECTION 01600 – MATERIAL AND EQUIPMENT

a) On Page 01600-4, delete Paragraph 1.11 in its entirety.

SECTION 04220 – CONCRETE MASONRY

a) Replace Section 04220 – Concrete Masonry in its entirety with Section 04220 – Concrete Masonry attached herein.

SECTION 07110 - BITUMINOUS DAMPROOFING

a) Delete Section 07110 Bituminous Damproofing in its entirety.

SECTION 09900 - PAINTING AND COATING

a) On Page 09900-10, delete Paragraph 2.03.C.1 in its entirety and replace with the following:

1. Class 3 Exposures shall consist of all exterior below grade surfaces for cast in place or precast vaults (PRV vaults) and all exterior below grade concrete or masonry surfaces for building stemwalls.

b) On Page 09900-11, Add the following as Paragraph 2.03.I.1.h:

h. PRV vault piping

SECTION 17325 – PROCESS CONTROL SYSTEM CONTROL PANELS

b) On Page 17325-2, delete Table 17325 PCSI-Furnished Control Panels in its entirety and replace with following:

Table 17325 PCSI-Furnished Control Panels

PANEL ID	ENCLOSURE MATERIAL	ENCLOSURE RATING	PANEL LOCATION	MINIMUM ENCLOSURE SIZE*
Supervisory Control Panel	Painted White Steel	NEMA 12	Electrical Building	48" W x 30" D x 90" H
Security Cabinet	Painted White Steel	NEMA 12	Electrical Building	36" W x 18" D x 36" H
FCV-2320 Control Cabinet	Stainless Steel	NEMA 4X	Flow Control Valve Assembly (Maltsberger)	18" W x 8" D x 18" H
FCV-2330 Control Cabinet	Stainless Steel	NEMA 4X	Flow Control Valve Assembly (Maltsberger)	18" W x 8" D x 18" H
Flow Control Valve Control Cabinet	Stainless Steel	NEMA 4X	Flow Control Valve Assembly (Basin)	18" W x 8" D x 18" H
PRV-2 SCADA Panel	Stainless Steel	NEMA 4X	PRV-2	36" W x 18" D x 72" H

PRV-3 SCADA Panel	Stainless Steel	NEMA 4X	PRV-3	36" W x 18" D x 72" H
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REVISIONS TO DRAWINGS

SHEET G-2301 – DRAWING INDEX, LEGEND AND ABBREVIATIONS

a) Insert the following into the INDEX:

E-2308 MALTSBERGER PS ELECTRICAL DUCTBANK SECTION - IV

SHEET M-2301 – GENERAL NOTES

a) Remove Sheet M-2301 in its entirety and replace with the revised version included in this Addendum

SHEET M-2302 – INTERCONNECTION PLAN AND PROFILE PRV2

a) Remove Sheet M-2302 in its entirety and replace with the revised version included in this Addendum.

SHEET M-2304 – PRESSURE REDUCING VALVE ASSEMBLY PLAN PRV2

a) Remove Sheet M-2304 in its entirety and replace with the revised version included in this Addendum.

SHEET M-2306 – INTERCONNECTION PLAN AND PROFILE PRV3

a) Remove Sheet M-2306 in its entirety and replace with the revised version included in this Addendum

SHEET M-2307 – INTERCONNECTION PLAN AND PROFILE PRV3

a) Remove Sheet M-2307 in its entirety and replace with the revised version included in this Addendum

SHEET M-2309 – PRESSURE REDUCING VALVE ASSEMBLY PLAN PRV3

a) Remove Sheet M-2309 in its entirety and replace with the revised version included in this Addendum

SHEET E-2304 – MALTSBERGER PS ELECTRICAL SITE PLAN - I

a) Remove Sheet E-2304 in its entirety and replace with the revised version included in this Addendum.

SHEET E-2305 – MALTSBERGER PS ELECTRICAL DUCTBANK SECTION - I

a) Remove Sheet E-2305 in its entirety and replace with the revised version included in this Addendum

SHEET E-2306 – MALTSBERGER PS ELECTRICAL DUCTBANK SECTION - II

a) Remove Sheet E-2306 in its entirety and replace with the revised version included in this Addendum.

SHEET E-2307 – MALTSBERGER PS ELECTRICAL DUCTBANK SECTION - III

- a) Remove Sheet E-2307 in its entirety and replace with the revised version included in this Addendum.

SHEET E-2308 – MALTSBERGER PS ELECTRICAL DUCTBANK SECTION - IV

- a) Add Sheet E-2308 to the plan set included in this Addendum.

SHEET E-2320 – MALTSBERGER PS ELECTRICAL ENLARGED POWER PLAN

- a) Remove Sheet E-2320 in its entirety and replace with the revised version included in this Addendum.

SHEET E-2321 – MALTSBERGER PS ELECTRICAL BUILDING POWER PLAN

- a) Remove Sheet E-2321 in its entirety and replace with the revised version included in this Addendum.

SHEET E-2331 – MALTSBERGER PS HIGH SERVICE PUMP CONTROL SCHEMATICS

- a) Remove Sheet E-2331 in its entirety and replace with the revised version included in this Addendum.

SHEET E-2332 – MALTSBERGER PS WELL PUMP CONTROL SCHEMATICS

Remove Sheet E-2332 in its entirety and replace with the revised version included in this Addendum.

SHEET E-2335 – MALTSBERGER PS MODULATING FCV CONTROL SCHEMATICS

- a) Remove Sheet E-2335 in its entirety and replace with the revised version included in this Addendum.

SHEET E-2337 – MALTSBERGER PS WELL PUMP RISER DIAGRAM

- a) Remove Sheet E-2337 in its entirety and replace with the revised version included in this Addendum.

SHEET E-2338 – MALTSBERGER PS PANEL SCHEDULE

- a) Remove Sheet E-2338 in its entirety and replace with the revised version included in this Addendum.

SHEET E-2351 - PRV II ELECTRICAL SITE PLAN

- a) Remove Sheet E-2351 in its entirety and replace with the revised version included in this Addendum.

SHEET E-2352 – PRV II ONE LINE DIAGRAM

- a) Remove Sheet E-2352 in its entirety and replace with the revised version included in this Addendum.

SHEET E-2353 – PRV II ELECTRICAL VAULT POWER PLAN

- a) Remove Sheet E-2353 in its entirety and replace with the revised version included in this Addendum.

SHEET E-2354 – PRV III ELECTRICAL SITE PLAN

a) Remove Sheet E-2354 in its entirety and replace with the revised version included in this Addendum.

SHEET E-2355 – PRV III ONE LINE DIAGRAM

a) Remove Sheet E-2355 in its entirety and replace with the revised version included in this Addendum.

SHEET E-2356 – PRV III ELECTRICAL VAULT POWER PLAN

a) Remove Sheet E-2356 in its entirety and replace with the revised version included in this Addendum.

SHEET E-2359 – PRV ANTENNA MAST AND LIGHTING DETAILS

a) Remove Sheet E-2359 in its entirety and replace with the revised version included in this Addendum.

SHEET E-2360 – PRV PANEL SCHEDULE

a) Remove Sheet E-2360 in its entirety and replace with the revised version included in this Addendum.

SHEET E-2395 – STANDARD ELECTRICAL DETAILS PRV

a) Delete Detail 7 on Sheet E-2395 in its entirety.
The remainder of the bid documents remain unchanged.

This addendum is comprised of a total of **43** pages (including attachments).



END OF ADDENDUM No. 4

Project: Central Water Integration Pipeline Maltberger Pump Station Improvements Project		
Question and Answer Form		Solicitation No.: CO-00190
		Job No.: 18-8617
Question No.	Question	Answer
27	Sheet E-2303: Ductbank from electrical equipment area to well pump 1 is shown to be demolished.	Ductbanks to existing pumps from the electrical equipment area are to be demolished as described on SHEET E-2302. This is reflected in the changes to SHEET E-2302 per Addendum No. 3.
35	Sheet E-2322: Please revise and identify ALL light fixtures.	Luminaire schedule has been provided. This is reflected in the changes to SHEET E-2338 per Addendum No. 4.
43	Sheet E-2351: Please provide a location for the CPS service pole and feeder from service to the electrical panelboard.	Refer to updated SHEET E-2351 per Addendum No. 4.
44	Sheet E-2351: Raceway I.D. P007 is not listed on the conduit schedule on Sheet E-2360. Please revise.	Refer to updated SHEET E-2351 per Addendum No. 4.
45	Sheet E-2352: For panel "A" it says to see sheet E-2805 for panel "A" schedule. There was no sheet E-2805 provided. Please revise.	Reference has been updated to "see SHEET E-2360". This is reflected in the changes to SHEET E-2352 per Addendum No. 4.
46	Sheet E-2352: Please identify all raceways with conduit tags so we may reference the conduit schedule accurately.	Refer to updated SHEET E-2352 per Addendum No. 4.
47	Sheet E-2353: Please identify equipment and instrumentation and provide a revised conduit schedule that accurately shows the "from-to". Example, conduit "P003" per the conduit schedule goes from "panel A" to "pressure trans panel. "P003" on Sheet E-2353 does not go to a panel, it is shown in the vault.	Conduit schedule has been revised. This is reflected in the changes to SHEET E-2360 per Addendum No. 4.
48	Sheet E-2353: Please provide a conduit schedule showing ALL conduits and their respective source and destination points.	Refer to updated SHEET E-2353 per Addendum No. 4.
49	Sheet E-2355: For panel "A" it says to see sheet E-2805 for panel "A" schedule. There was no sheet E-2805 provided. Please revise.	Reference has been updated to SHEET E-2360. This is reflected in the changes to SHEET E-2352 per Addendum No. 4.
50	Sheet E-2355: Please identify all raceways with conduit tags so we may reference the conduit schedule accurately.	Refer to updated SHEET E-2355 per Addendum No. 4.
51	Sheet E-2356: Please identify equipment and instrumentation and provide a revised conduit schedule that accurately shows the "from-to". Example, conduit "P003" per the conduit schedule goes from "panel A" to "pressure trans panel. "P003" on Sheet E-2353 does not go to a panel, it is shown in the vault.	Conduit schedule has been revised. This is reflected in the changes to SHEET E-2360 per Addendum No. 4.
52	Sheet E-2356: Please provide a conduit schedule showing ALL conduits and their respective source and destination points.	Refer to updated SHEET E-2356 per Addendum No. 4.
53	Sheet E-2360: Please revise conduit schedule and pane "A" schedule so they show ALL conduits and circuits. Refer to previous question for examples. We have not notated all discrepancies due to the amount of discrepancies found. Please revise accordingly.	Refer to updated SHEET E-2360 per Addendum No. 4.
62	Refer to plan sheets E2351, E2352, 2353 add a general note to refer the Contractor to the conduit schedule on plan sheet E2360.	Refer to updated SHEET E-2351, E-2352, E-2353 and E-2360 per Addendum No. 4.
63	Refer to plan sheet E2351 and E2360, the conduit schedule indicates tag SS1 as the feeder from the utility to the proposed panelboard A. However conduit run tag SS1 does not appear on the PRV-II site plan E2351, and we need to know the location of the utility connection.	Refer to updated SHEET E-2351 and E-2360 per Addendum No. 4.
64	Refer to the power pedestal elevation details on plan sheets E2352 (PRV-II site) and E2355(PRV-III site), also detail 7 on plan sheet E2395. These panels are a special custom manufactured product that are equipped with internal time clocks, lighting contactors, fluorescent lighting, etc, and are not applicable to the specification section 16470 (panelboards) in the bid spec set. Please provide us with a specification for these custom unmetered pedestal panelboards.	Power pedestal panel is not required on this project. Detail 7 on SHEET E-2395 is deleted per Addendum No. 4.
90	Please provide a light fixture schedule for the fixtures shown to be installed in the electrical building at the Maltberger Pump Station	Luminaire schedule has been provided. This is reflected in the changes to SHEET E-2338 per Addendum No. 4.
91	Sheet M-2302; "This is not a 45 deg bend (1/8)"	Refer to updated SHEET M-2302 per Addendum No. 4.

Project: Central Water Integration Pipeline Maltberger Pump Station Improvements Project		
Question and Answer Form		Solicitation No.: CO-00190
		Job No.: 18-8617
Question No.	Question	Answer
92	Sheet M-2302; "This is not a 90 deg bend (1/4)"	Refer to updated SHEET M-2302 per Addendum No. 4.
93	Sheet M-2304; "Can't put a slip on flange on a gate valve or on DI Pipe".	Refer to updated SHEET M-2304 per Addendum No. 4.
94	Sheet M-2304; "M-2302 shows these to be MJ. Can't be steel and MJ. Where do you want to change from DI to Steel?"	Refer to updated SHEET M-2304 per Addendum No. 4.
95	Sheet M-2306; "These are not 1/4 bends. They are about 30-35 deg. Closest available MJ fitting is 22.5 deg."	Refer to updated SHEET M-2306 per Addendum No. 4.
96	Sheet M-2306; "These are not 1/4 bends. They are about 60 deg. 60 deg MJ fittings are not available."	Refer to updated SHEET M-2306 per Addendum No. 4.
101	On drawing E-2343 are we to supply equipment on this drawing? If so can we can more detail on the lines sizes and etc..	Refer to updated SHEET E-2343 per Addendum No. 4.
103	Due to the proximity to the San Antonio Airport, are there any FCC and/or FAA regulations and requirements?	Contractor will be required to follow the regulations and requirements of both the FCC and FAA as it pertains to the construction activity on the site. Any existing licenses and/or requirements for the existing radio system will be shared with the successful bidder and it will upon the contractor to coordinate with the FCC and/or the FAA any changes that will require a revision to these agreements.
104	Section 01600, paragraph 1.11 appears to be information for a different project. Please confirm/correct.	Paragraph 1.11 will be deleted per Addendum No. 4

SECTION 04220

UNIT MASONRY SYSTEM

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Concrete masonry and brick.
- B. Reinforcement, anchorage, and accessories.

1.02 PRODUCTS FURNISHED FOR INSTALLATION UNDER OTHER SECTIONS

- A. Metal Fabrications: Placement of loose steel lintels.
- B. Flashing and Sheet

1.03 RELATED SECTIONS

- A. Section 07110 - Bituminous Dampproofing: Dampproofing masonry surfaces.
- B. Section 07620 – Roof Related Sheet Metal Work: Metallic Through Wall Flashing.
- C. Section 07920 - Joint Sealers: Rod and sealant at control and expansion joints.

1.04 REFERENCES

- A. ANSI/ASTM C216 - Facing Brick (Solid Masonry Units Made From Clay or Shale).
- B. ASTM A123 - Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
- C. ASTM A615 - Deformed and Plain Billet Steel Bars for Concrete Reinforcement.
- D. ASTM C150 - Portland Cement.
- E. ASTM C144 - Aggregate for Masonry Mortar.
- F. ASTM C207 - Hydrated Lime for Masonry Purposes.
- G. ASTM C476 - Grout for Reinforced and Non-reinforced Masonry.
- H. ASTM C404 - Aggregate for masonry grout.
- I. ASTM C270 - Mortar for Unit Masonry.

1.05 QUALITY ASSURANCE

- A. Masonry installation shall comply with the requirements of the Brick Institute of America, Local Codes or Codes and Texas Masonry Institute. Where requirements of agencies or codes conflict, request clarification from Architect/Engineer before proceeding.
- B. When requested by Architect/Engineer provide evidence and test data confirming that brick and/or concrete masonry unit conform to standards stated herein.
- C. Submit test results certifying that brick to be supplied for this project have been sampled and tested in accordance with ASTM C67 for efflorescence and that brick are non-efflorescent.
- D. Submit test results certifying that 3 test specimens containing 5 brick and 4 mortar joints have been tested for efflorescence using the procedure established in ASTM C67 for testing individual bricks. Mortar shall be mixed from actual materials and to proportions proposed for use on this project. Certify that bricks and mortar are non-efflorescent.

1.06 SUBMITTALS

- A. Submit product data under provisions of Section 01300.
- B. Submit product data for masonry ties and mortar materials.
- C. Submit samples under provisions of Section 01300.
- D. Submit four samples of each color of face brick to illustrate color, texture and extremes of color range.
- E. Submit manufacturer's installation and cleaning instructions under provisions of Section 01330.

1.07 QUALIFICATIONS

- A. Installer: Company specializing in performing the work of this Section with minimum 10 years documented experience.

1.08 SAMPLE PANELS

- A. Provide sample panels of each type of masonry under provisions of Section 01300.
- B. Provide field sample (sample panel) of integrally colored concrete unit masonry under provisions of Section 01400.
- C. Erect 4 x 4 feet face brick sample panel of each type of masonry; include specified mortar.
- D. Include in Base Bid Price the cost of constructing up to two sample panels for each type of masonry. One panel of each type of masonry will be constructed initially. Subsequent panels will be constructed after the previous panels have been observed and evaluated by the

Architect and Owner. Modification of mortar color may be requested and subsequent panels constructed.

- E. Retain, identify and protect approved sample panel at project site for duration of project. Remove rejected sample panels when directed by Architect/Engineer.
- F. When accepted, sample panel will demonstrate minimum standard for the Work.

1.09 QUALIFICATIONS

- A. Installer: Company specializing in performing the work of this Section with minimum 10 years documented experience.

1.10 PRE-INSTALLATION CONFERENCE

- A. Convene one week prior to commencing work of this Section.

1.11 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products to site under provisions of Section 01600.
- B. Store and protect products under provisions of Section 01600.

1.12 ENVIRONMENTAL REQUIREMENTS

- A. Maintain materials and surrounding air temperature to minimum 50 degrees F prior to, during, and 48 hours after completion of masonry work.

1.13 SEQUENCING AND SCHEDULING

- A. Coordinate the masonry work with adjacent construction, flashings and dampproofing.

PART 2 PRODUCTS

2.01 CONCRETE MASONRY UNITS

- A. Hollow Load Bearing Block Units: ASTM C90, Grade N, Type I with minimum compressive wall design strength of FM-1350 PSI where reinforced - Moisture Controlled; light weight; 5 x 16 x 8 inches (nominal) and standard 8 x 16 x 8 inches unless otherwise noted.
 - 1. With fly ash meeting the requirements of ASTM replacing a portion of the cement normally used in production of the units; proportion of fly ash to cement established by manufacturer.
 - 2. Provide bull-nosed outside corners at jambs, columns and sills unless otherwise indicated.
 - 3. Integrally waterproof exterior units with Dry-Block manufactured by W. R. Grace (adds .15 - .20 c/sf use only when used on exterior)

4. Introduce waterproofing compound in to block mix at rate prescribed by manufacturer. Mix block mix ingredients thoroughly to complete and uniform blending.
 5. Completed units shall comply with ASTM E514, Class E, showing no water on the reverse side of wall after 72 hour test exposure equivalent to 5-1/2 inch rainfall per hour accompanied by 62.5 mile per hour wind.
- B. Integrally Colored Units: ASTM C90, Grade N, Type I, moisture controlled; light weight; 8 x 8 x 16 inches unless otherwise noted; split faced (Rockface) face texture, **integrally colored units of types as noted on drawings**; manufactured by Featherlite or equivalent.
1. Provide square outside corners at jambs, columns and sills unless otherwise indicated.
 2. Where units are load bearing provide units with minimum compressive wall design strength of FM-1500 PSI.

2.02 BRICK UNITS

- A. Face Brick: ANSI/ASTM C216, Type FBS, Grade SW; modular size; colors as follows:
1. Selection: Acme Brick
 - a. (dark color) Ebony 29-153-01-27, or approved equal.
 - b. (light color) Mushroom Brown 29-102-01-21, or approved equal.

2.03 MORTAR MATERIALS

- A. Portland Cement: ASTM C150, normal Type I; gray color.
- B. Mortar Aggregate: ASTM C144, standard masonry type; clean, dry protected against dampness, freezing, and foreign matter.
- C. Hydrated Lime: ASTM C207, Type S.
- D. Mortar Color: Non-fading, non-staining, mineral oxide pigment color as selected. Allow for white mortar; "A" series manufactured by Solomon Grind-Chem Service or equal.
- E. Water: Clean and potable.
- F. Water-repellent Admixture for Use with Split Face Concrete Unit Masonry: Integral liquid polymeric water-repellent; Dry-Block Mortar Admixture manufactured by W. R. Grace, Inc.

2.04 GROUT MATERIALS

- A. Portland Cement: ASTM C150, normal type I, gray.

- B. Aggregates: ASTM C404, dry and free of foreign material; fine aggregate Size No.1, coarse aggregate Size No. 89.
- C. Water: Clean and potable.

2.05 REINFORCEMENT AND ANCHORAGE

- A. Brick Ties for Metal Stud Back-up: 14 gauge steel units, hot dipped galvanized after fabrication in accordance with ASTM A123 for 1.25 oz/s.f. zinc coating; with rectangular ties of length to suit application; DW-10 manufactured by Hohmann & Barnard, Inc.
- B. Single Wythe Joint Reinforcement: Truss type; hot dip galvanized after fabrication cold-drawn steel conforming to ANSI/ASTM A82, No. 9 gauge side rods with No. 9 gauge cross ties; DUR-WAL Truss manufactured by DUR-0-WAL, INC.
- C. Reinforcing Steel: ASTM A615, 60 ksi yield grade, deformed billet bars, unprotected finish.

2.06 FLASHINGS

- A. Metal through wall flashing per Section 07620.

2.07 ACCESSORIES

- A. Joint Filler: Closed cell polyethylene; oversized 50 percent to joint width; self-expanding; maximum lengths; Sonofoam manufactured by Sonneborn Building Products.
- B. Cleaning Solutions: Non-acidic, not harmful to masonry work or adjacent materials.
- C. Plastic Weepholes: Unless otherwise indicated, provide 1/4" round x 4" long medium density polyethylene plastic tubes to form weepholes.

2.08 MORTAR MIXING

- A. Accurately proportion mortar and mix in accordance with ASTM C270 to produce the following mortar types.
 - 1. Type "N" W 2 Type "A" units of mortar color for face brick and concrete unit masonry.
- B. Add mortar color, if required, in accordance with manufacturer's instructions. Ensure uniformity of mix and coloration. Provide different colored mortars for different colored brick.
- C. Do not use anti-freeze or air entraining compounds to lower the freezing point of mortar.
- D. If water is lost by evaporation, retemper with 2 hours of mixing. Do not retemper mortar after 2 hours of mixing.

2.09 GROUT MIXING

- A. Proportion grout ingredients in accordance with ASTM C476 and as required to develop 28 day compressive strength of 2500 psi, or as otherwise indicated on drawings, when tested in accordance with ASTM C39.
- B. Thoroughly mix ingredients in quantities required for immediate use. Machine mix grout not less than 5 minutes.
- C. Do not use anti-freeze or air entraining compounds in grout.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field conditions are acceptable and are ready to receive work.
- B. Verify items provided by other Sections of work are properly sized and located.
- C. Verify that built-in items are in proper location, and ready for roughing into masonry work.
- D. Beginning of installation means installer accepts existing conditions.

3.02 PREPARATION & PROTECTION

- A. Direct and coordinate placement of metal anchors and accessories supplied to other Sections.
- B. Provide temporary bracing during installation of masonry work. Maintain in place until building structure provides permanent bracing.
- C. Cover tops of walls with tarps, plastic sheeting or other substantial material at termination of each day's construction. Anchor protective covering to ensure covering is not displaced by weather.

3.03 COURSING

- A. Establish lines, levels, and coursing indicated. Protect from displacement.
- B. Maintain masonry courses to uniform dimension. Form vertical and horizontal joints of uniform thickness.
- C. Lay concrete masonry units in running bond except where noted otherwise. Course one unit and one mortar joint to equal 8 inches. Form concave mortar joints.
- D. Lay brick units in running bond except where noted otherwise. Course three brick units and three mortar joints to equal 8 inches. Form concave mortar joints.

3.04 PLACING AND BONDING

- A. Lay solid masonry units in full bed of mortar, with full head joints, uniformly jointed with other work.
- B. Lay hollow masonry units with face shell bedding on head and bed joints.
- C. Buttering corners of joints or excessive furrowing of mortar joints are not permitted.
- D. Remove excess mortar as work progresses.
- E. Interlock external corners.
- F. Do not shift or tap masonry units after mortar has achieved initial set. Where adjustment must be made, remove mortar and replace.
- G. Perform job site cutting of masonry units with proper tools to provide straight, clean, unchipped edges. Prevent broken masonry unit corners or edges.
- H. Isolate masonry partitions from vertical structural framing members with 3/4 inch void with joint filler.
- I. Isolate top joint of masonry partitions from horizontal structural framing members and slabs or decks with compressible joint filler.

3.05 WEEPS AND VENTS

- A. Provide open head joint weep holes in veneer at 32 inches on center horizontally above through-wall shelf angles and at bottom of walls.

3.06 CAVITY WALL

- A. Do not permit mortar to drop or accumulate into cavity air space or to plug weep holes.

3.07 REINFORCEMENT AND ANCHORAGES - SINGLE WYTHE MASONRY

- A. Install horizontal joint reinforcement in concrete masonry units 16 inches on center.
- B. Place masonry joint reinforcement in first and second horizontal joints above and below openings. Extend minimum 16 inches each side of opening.
- C. Place joint reinforcement continuous in first and second joint below top of walls.
- D. Lap joint reinforcement ends minimum 12 inches. Extend minimum 16 inches each side of openings.

3.08 REINFORCEMENT AND ANCHORAGES - VENEER MASONRY

- A. Secure wall ties to back-up wall and embed into masonry veneer at maximum 16 inches o.c. vertically and 32 inches on center horizontally. Place at maximum 3 inches on center each way around perimeter of openings, within 12 inches of openings.
- B. Offset adjacent rows of anchors to center anchors of one row over the spaces between anchors of the row below.

3.09 REINFORCEMENT AND ANCHORAGES - REINFORCED UNIT MASONRY

- A. Install horizontal joint reinforcement 16 inches on center.
- B. Place masonry joint reinforcement in first and second horizontal joints above and below openings. Extend minimum 16 inches each side of opening.
- C. Place joint reinforcement continuous in first and second joint below top of walls.
- D. Lap joint reinforcement ends minimum 6 inches. Extend minimum 16 inches each side of openings.
- E. Support and secure reinforcing bars from displacement. Maintain position within 1/2 inch of dimensioned position.

3.10 MASONRY FLASHINGS

- A. Extend flashings under and through veneer, turn up minimum 8 inches and seal into sawn reglet in concrete.
- B. Lap end joints minimum 6 inches and seal watertight.
- C. Use flashing manufacturer's recommended adhesive and sealer.
- D. Seal flashings to metal support angles.

3.11 LINTELS

- A. Install loose steel lintels over window openings and door openings. Provide 8 inch bearing minimum.
- B. Install reinforced unit masonry lintels over openings where steel lintels are not scheduled.
- C. Reinforce unit masonry lintels as detailed.
- D. Use single piece reinforcing bars only.
- E. Support and secure reinforcing bars from displacement. Maintain position within 1/2 inch of dimensioned position.
- F. Place and consolidate grout fill without displacing reinforcing.

- G. Allow masonry lintels to attain specified strength before removing temporary supports.
- H. Maintain minimum 8 inch bearing on each side of opening.

3.12 GROUTED COMPONENTS

- A. Reinforce bond beam with 2 No. 5 bars, placed horizontally, 1 inch above bottom of units.
- B. Reinforce cells and pilasters as detailed.
- C. Lap splices minimum 24 bar diameters.
- D. Support and secure reinforcing bars from displacement. Maintain position within 1/2 inch of dimensioned position.
- E. Place and consolidate grout fill without displacing reinforcing.
- F. At bearing locations, fill masonry cores with grout for a minimum 12 inches either side of opening.

3.13 CONTROL AND EXPANSION JOINTS

- A. Do not continue horizontal joint reinforcement through control and expansion joints.
- B. Install preformed control joint device in continuous lengths. Seal butt and corner joints in accordance with manufacturer's instructions.
- C. Size control joint in accordance with Section 07 92 00 for sealant performance.
- D. Form expansion joint as detailed.
- E. Provide control and expansion joints in locations indicated but in no case spaced greater than 30 feet on center. Consult with Architect if unbroken runs in excess of 30 feet are encountered. Use industry standards for masonry joints if not shown indicate, consult with architect prior to commencing the work.
- F. Provide expansion joints at the intersection of columns/pilasters and wall surfaces and inside corners of walls.

3.14 BUILT-IN WORK

- A. As work progresses, build in metal door and glazed frames fabricated metal frames and other items furnished by other Sections.
- B. Build in items plumb and level.
- C. Bed anchors of metal door and glazed frames in adjacent mortar joints. Fill frame voids solid with grout. Fill adjacent masonry cores with grout minimum 12 inches from framed openings.
- D. Do not build in organic materials subject to deterioration.

3.15 TOLERANCES

- A. Maximum Variation From Unit to Adjacent Unit: 1/32 inch.
- B. Maximum Variation From Plane of Wall: 1/4 inch in 10 feet and 1/2 inch in 20 feet or more.
- C. Maximum Variation From Plumb: 1/4 inch per story non-cumulative; 1/2 inch in two stories or more.
- D. Maximum Variation From Level Coursing: 1/8 inch in 3 feet and 1/4 inch in 10 feet 1/2 inch in 30 feet.
- E. Maximum Variation of Joint Thickness: 1/8 inch in 3 feet.
- F. Maximum Variation From Cross Sectional Thickness of Walls: 1/4 inch.

3.16 CUTTING AND FITTING

- A. Cut and fit for chases pipes, conduit, sleeves. Coordinate with other Sections of work to provide correct size, shape, and location.
- B. Obtain Architect/Engineer approval prior to cutting or fitting masonry work not indicated or where appearance or strength of masonry work may be impaired.

3.17 CLEANING

- A. Clean work under provisions of Section 01710.
- B. Remove excess mortar and mortar smears.
- C. Replace defective mortar. Match adjacent work.
- D. Clean soiled surfaces with cleaning solution.
- E. Use non-metallic tools in cleaning operations.

3.18 PROTECTION OF FINISHED WORK

- A. Protect finished installation under provisions of Section 01500.
- B. Without damaging completed work, provide protective boards at exposed external corners which may be damaged by construction activities.

END OF SECTION

GENERAL WATER NOTES

- All materials and construction procedures within the scope of this work on PRV sites 2 & 3 shall be approved by the San Antonio Water System (SAWS) and comply with the Plans, Specifications, General Conditions and with the following applicable:
 - Current Texas Commission on Environmental Quality (TCEQ) "Design Criteria for Domestic Wastewater System", Texas Administrative Code (TAC) Title 30 Part 1 Chapter 217 and "Public Drinking Water", TAC Title 30 Part 1 Chapter 290.
 - Current Texas Department of Transportation (TXDOT) "Standard Specification for Construction of Highways, Streets and Drainage."
 - Current San Antonio Water System "Standard Specification for Water and Sanitary Sewer Construction." See SAWS website for current information. (www.saws.org)
 - Current City of San Antonio "Standard Specifications for Public Works Construction."
 - Current City of San Antonio "Utility Excavation Criteria Manual"
- The Contractor is to make arrangements with the SAWS Construction Inspection Division at 233-3500 and provide notification procedures the contractor will use to notify affected home residents and/or property owners 48 hours prior to excavation.
- Locations and depths of existing utilities and service laterals shown on the plans are understood to be approximate. Actual locations and depths must be field verified by the Contractor 48 hours prior to construction. It shall be the Contractor's responsibility to locate utility service lines as required for construction and to protect them during construction at no cost to SAWS.
- The Contractor shall verify the exact location of underground utilities and drainage structures at least 48 hours prior to construction whether shown on plans or not. The following contact information are supplied for verification purposes:

SAWS Utility Locates: 233-2010
 SAWS Production Control Center: 233-2016
 COSA Drainage: 207-8048
 COSA Traffic Signal Operations: 207-7720
 Texas State Wide One Call Locator: 1-800-545-6005 or 811
- The Contractor shall comply with City of San Antonio or other governing Municipality's tree ordinances when excavating near trees.
- The Contractor shall not place any waste materials or spoils in the 100-year Flood Plain without first obtaining an approved Flood Plain Permit.
- Prior to tie-ins, any shutdowns of existing mains of any size must be coordinated with the SAWS Construction Inspection Division at (210) 233-3500 and/or SAWS Production groups at least two weeks in advance of the shutdown. The Contractor must also provide a sequence of work as related to the tie-ins; this is at no additional cost to SAWS or the project and it is the responsibility of the Contractor to sequence the work accordingly.
- Where water lines and new sewer lines are installed with a separation distance closer than nine feet (i.e. water lines crossing wastewater lines, water lines paralleling wastewater lines, or water lines next to manholes) the installation must meet the requirements of 30 TAC 217.53(d) (Pipe Design) and 30 TAC 290.44 (e)(Water Distribution).
- Asbestos Cement (AC) pipe, also known as transit pipe which is known to contain asbestos-containing material (ACM), may be located within the project limits. Special waste management procedures and health and safety requirements will be applicable when removal and/or disturbance of this pipe occurs. Payment for such work is to be made under Special Specification Item for Asbestos Cement Pipe.
- Any work completed without prior written authorization which is not included in these plans and specifications will not be compensated by the San Antonio Water System.
- Contractor shall maintain access to all existing and proposed water valves at all times.
- Power poles are to be braced by the contractor.
- Contractor to cut & plug any irrigation lines in SAWS work area. Contractor to relocate lines if necessary to keep system operational.

NOTE:

CPS ENERGY NOTE:
 CALL THE TEXAS STATE WIDE ONE CALL LOCATOR NUMBER 1-800-545-6005 OR 811, 48 HOURS BEFORE BEGINNING ANY EXCAVATION.

DUE TO FEDERAL REGULATIONS TITLE 49, PART 192.181, CPS ENERGY MUST MAINTAIN ACCESS TO GAS VALVES AT ALL TIMES. THE CONTRACTOR MUST PROTECT AND WORK AROUND ANY GAS VALVES THAT ARE IN THE PROJECT AREA.

THE PROJECT MUST BE GAS LEAK SURVEYED PRIOR TO THE FINAL OVERLAY. ALLOW 10 WORKING DAYS FOR THE LEAK SURVEY AND ALLOW AN ADDITIONAL 10 WORKING DAYS FOR VALVE ADJUSTMENTS. THE CONTRACTOR MUST COORDINATE THE SURVEY AND THE ADJUSTMENTS THROUGH THE PROJECT INSPECTOR.

THE CONTRACTOR WILL BE RESPONSIBLE FOR PROTECTING CPS ENERGY OVERHEAD AND UNDERGROUND ELECTRIC FACILITIES IF ADJACENT TO WORK AREAS.

NOTES:

- CONTRACTOR TO FIELD VERIFY THE DEPTH OF ALL UTILITIES BEFORE BEGINNING OF CONSTRUCTION.
- CONTRACTOR SHALL RESTRAIN ALL PROPOSED PIPES, VALVES AND FITTINGS AT NO ADDITIONAL COST.

AT&T NOTE:

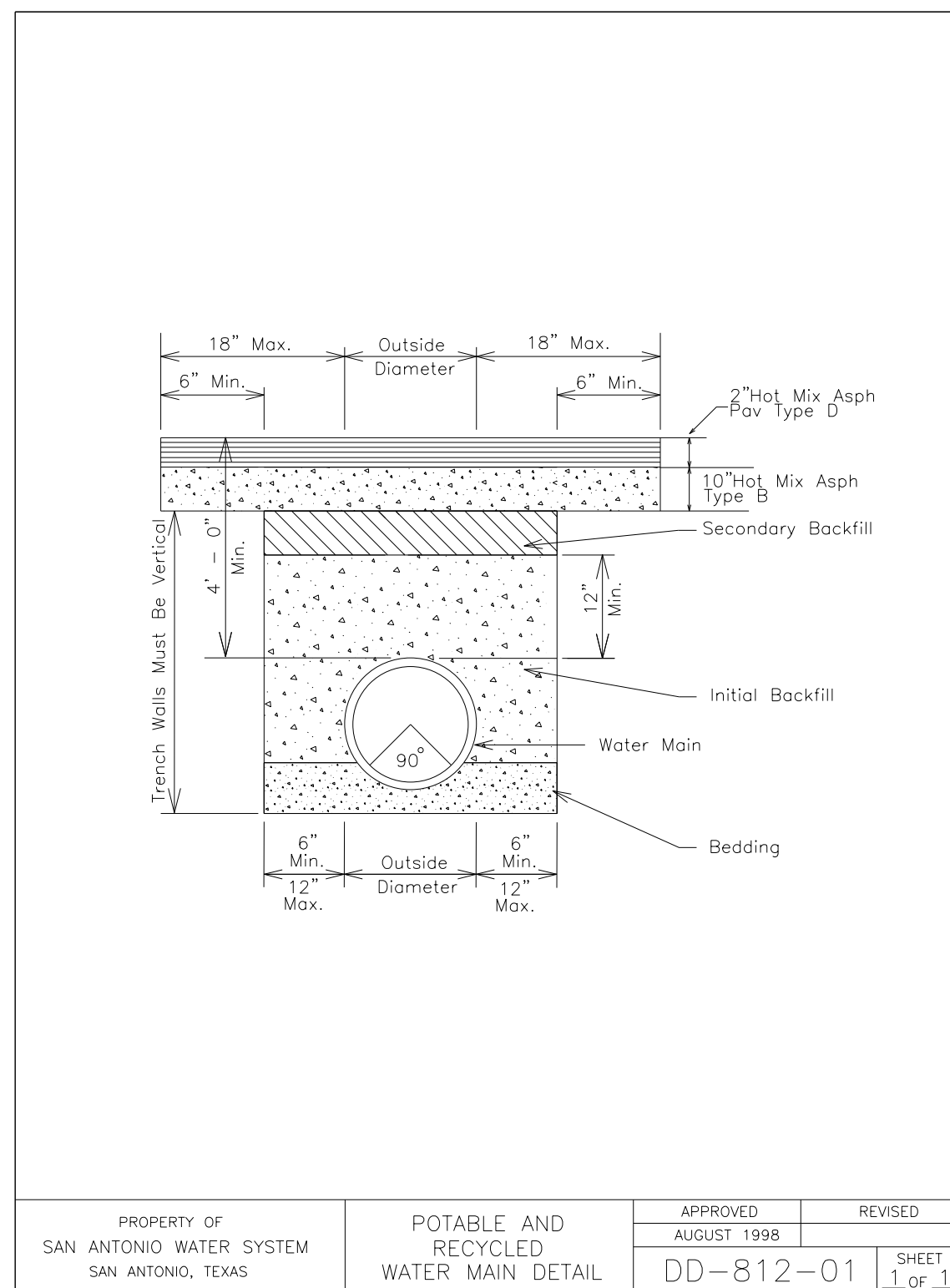
THE EXISTENCE AND LOCATION OF UNDERGROUND CABLE INDICATED ON THE PLANS ARE TAKEN FROM THE BEST RECORDS AVAILABLE AND ARE NOT GUARANTEED TO BE ACCURATE. CONTRACTOR IS TO CONTACT THE TELEPHONE COMPANY LOCATOR 48 HOURS PRIOR TO EXCAVATION AT 1-800-828-5127. CONTRACTOR IS TO PROTECT AND SUPPORT TELEPHONE COMPANY PLANT DURING CONSTRUCTION.

TRENCH EXCAVATION SAFETY PROTECTION

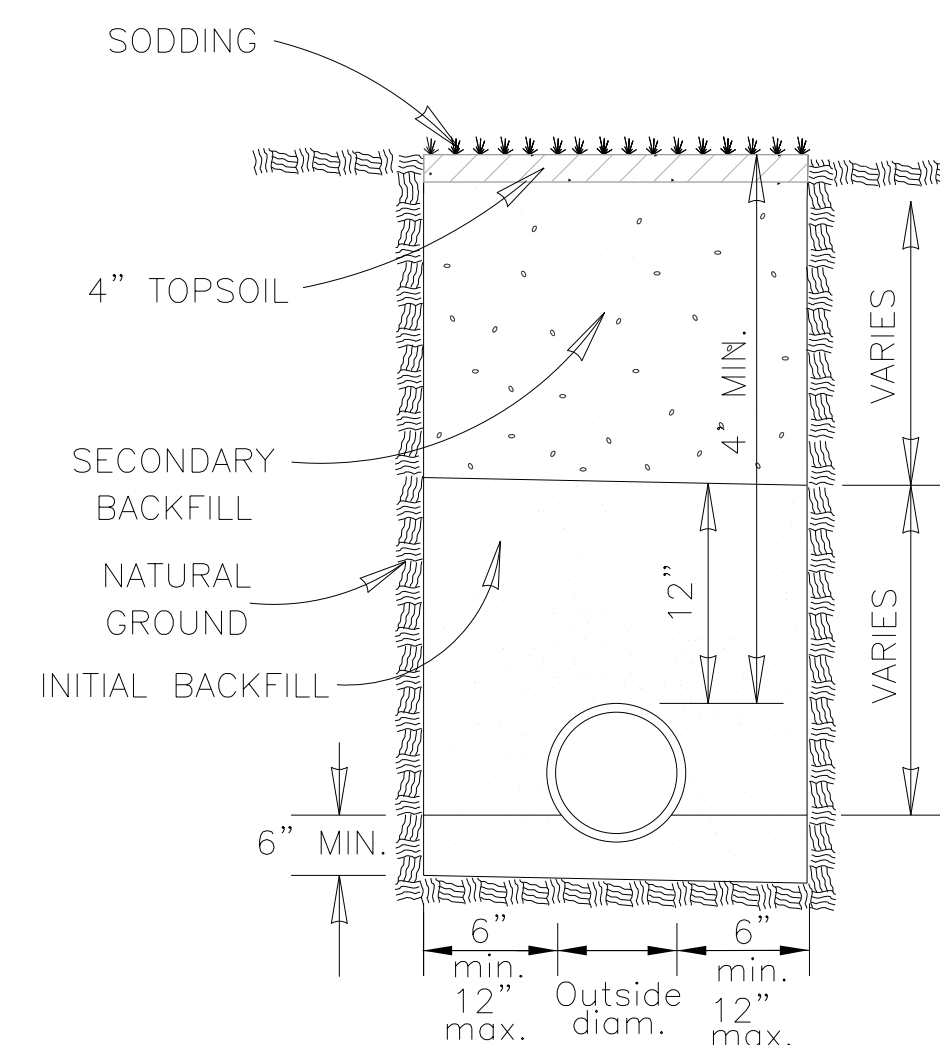
CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/ EQUIPMENT CONSULTANT, IF ANY SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITE(S) WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES. THE CONTRACTOR'S IMPLEMENTATION OF THE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLIES WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OF SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

"THE CONTRACTOR SHOULD CALL FOR LOCATES THROUGH THE "ONE CALL" UTILITY LOCATE SERVICE (1-800-344-8377) 48 HOURS PRIOR TO CONSTRUCTION/EXCAVATION WORK. CONTRACTORS HAVE THE RESPONSIBILITY TO PROTECT AND SUPPORT TELEPHONE COMPANY PLANT DURING CONSTRUCTION".

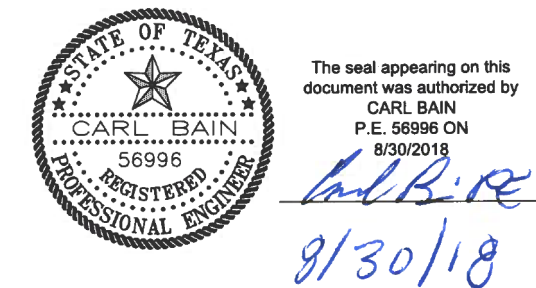
THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING TO ITS ORIGINAL, OR BETTER CONDITION ANY DAMAGE DONE TO EXISTING CURBS, SIDEWALK, OR DRIVEWAYS.



TYPICAL DETAIL
 (WITHIN PROPOSED ASPHALT AREAS)
 N.T.S.



TYPICAL DETAIL
 (OUTSIDE ASPHALT AREAS)
 N.T.S.



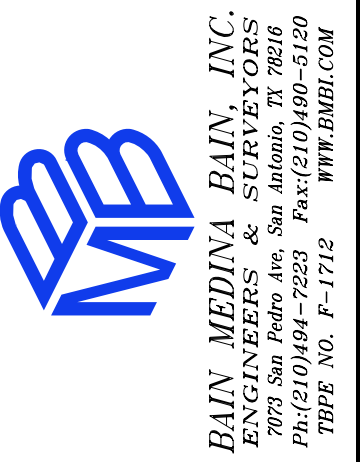
12/13/2017 9:43:19 AM - W:\WORK\1471 SAWS VISTA RIDGE INTEGRATION PROJECT (TETRA TECH)\REFERENCE\G-B5-22\3\AVT-TF.DWG - MANUEL CORTINA



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 Ph: (210) 299-7900 Fax: (210) 226-8497

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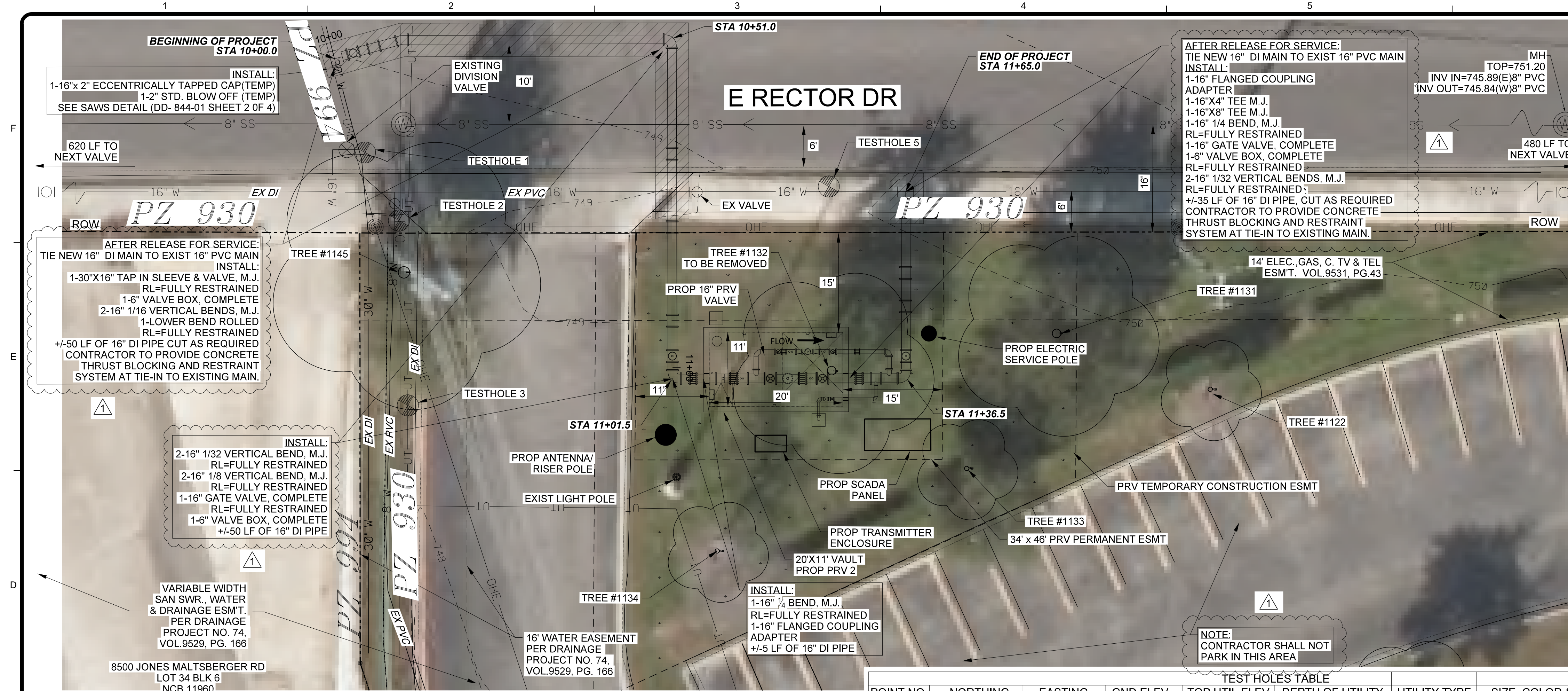
MARK	DATE	DESCRIPTION	BY
1	08-30-2018	Addendum No. 4	TT

GENERAL NOTES

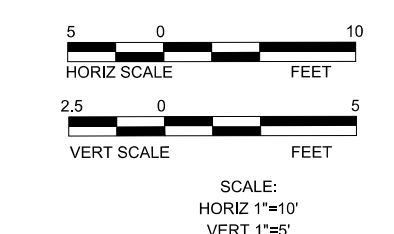
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 CHKD: CB

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TREE LIST			
POINT NO.	SIZE & TYPE	DRIP DIA.	
1121	7" OAK	20"	
1122	6" ELM	15"	
1131	12" OAK	30"	
* 1132	12" OAK	30"	TO BE REMOVED
1133	9" OAK	15"	
1134	6" OAK	15"	
1145	14" OAK	40"	
1188	3" HAK	5"	

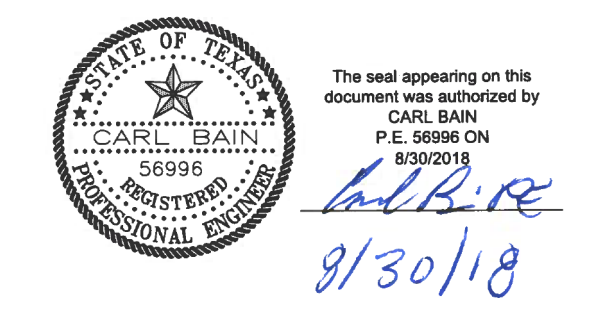
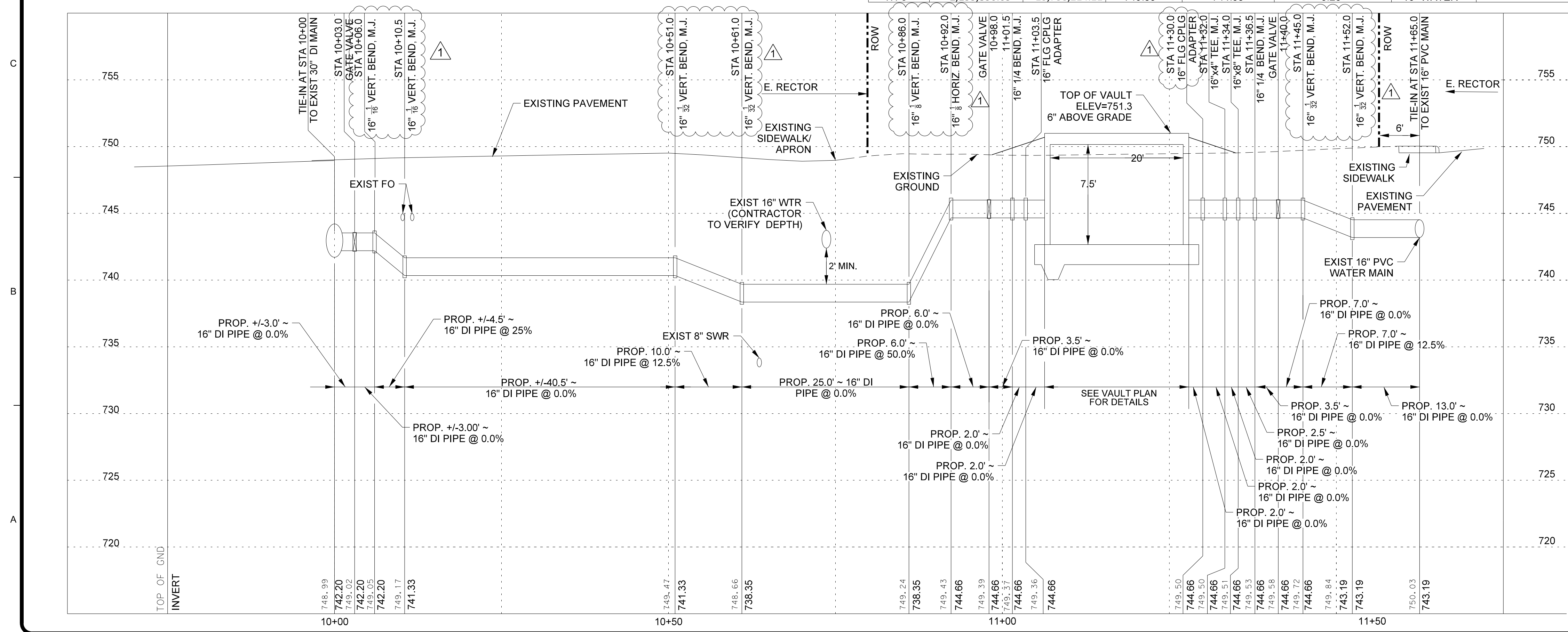


LEGEND

- TESTHOLE
- PROP. WATER VALVE
- PROP. WATER
- EXISTING SAN. SEWER
- EXISTING WATER MAIN
- EXISTING GAS MAIN
- EXISTING DIVISION VALVE
- EXISTING WATER VALVE
- UNDERGROUND ELEC.
- UNDERGROUND TELE.
- PVMT SDLK & DRWY REPAIR
- SODDING & LANDSCAPE REPAIR
- SEDIMENT CONTROL FENCE

TEST HOLES TABLE							
POINT NO.	NORTHING	EASTING	GND ELEV	TOP UTIL ELEV	DEPTH OF UTILITY	UTILITY TYPE	SIZE, COLOR & MATERIAL OF UTILITY
TH-1	2,133,767.16	13,738,218.77	748.69	743.91	4.78	30" WATER	CONCRETE
TH-2	2,133,772.31	13,738,208.60	748.08	743.53	4.55	FIBER OPTIC	2-4" PVC COMMUNICATION LINES
TH-3	2,133,773.81	13,738,180.96	748.49	743.77	4.72	FIBER OPTIC	2-4" PVC COMMUNICATION LINES
TH-5	2,133,836.65	13,738,214.11	749.83	744.55	5.28	16" WATER	PVC

PROPOSED PRV 2



TRENCH SAFETY PROTECTION: CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND ANTICIPATED INSTALLATION SITE(S) WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES. THE CONTRACTOR'S IMPLEMENTATION OF THE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATIONS SAFETY PROTECTION THAT COMPLIES WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

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SAN ANTONIO WATER SYSTEM

BY	DATE	DESCRIPTION
TT	08-30-2018	Addendum No. 4

SAN ANTONIO WATER SYSTEM
CENTRAL WATER INTEGRATION PIPELINE
MALTSBERGER PS IMPROVEMENTS

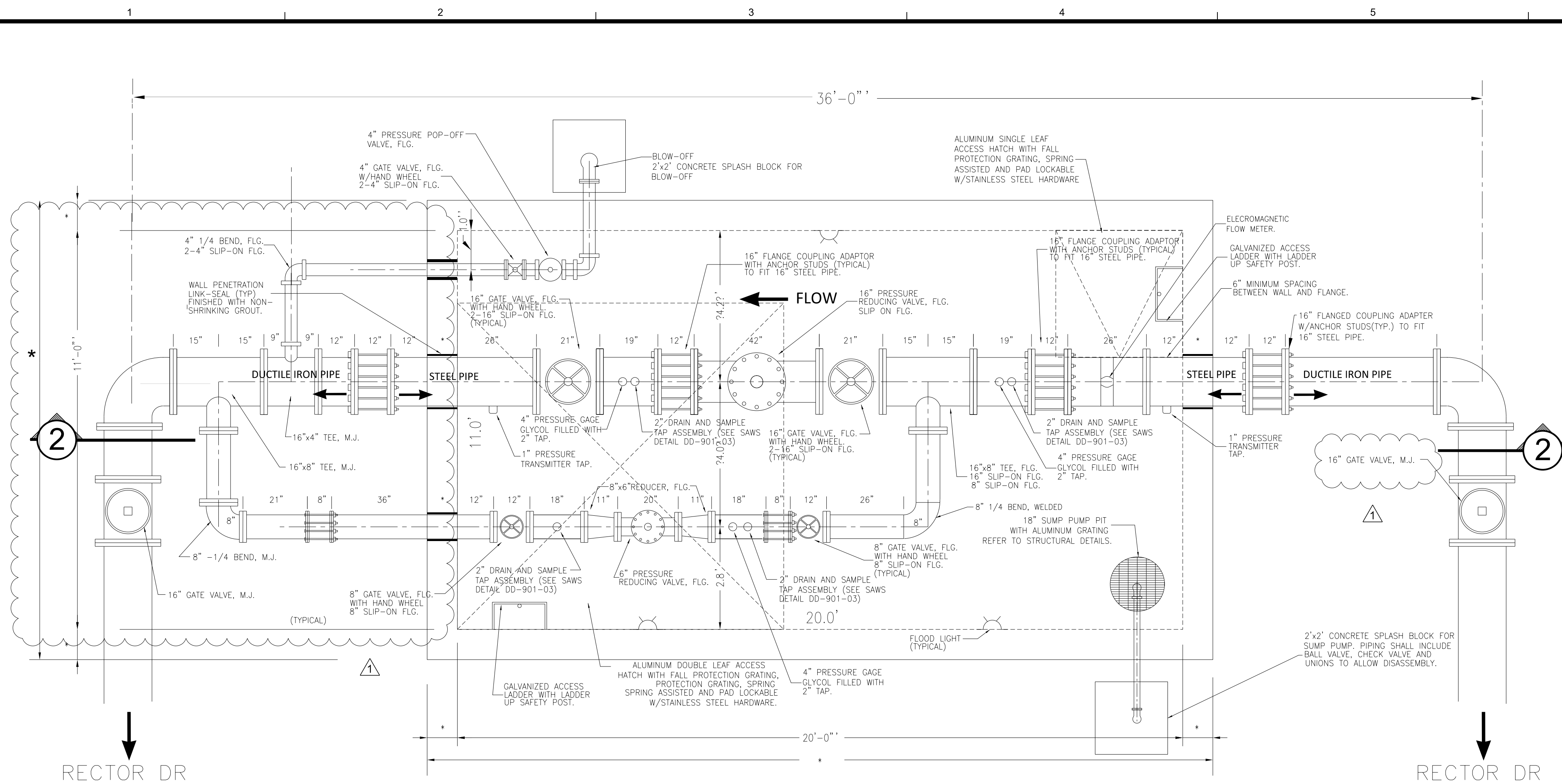
**INTERCONNECTION
PLAN & PROFILE PRV2**

PROJ: 200-09308-18001
DESN: CC
DRWN: C-3805
CHKD: CB

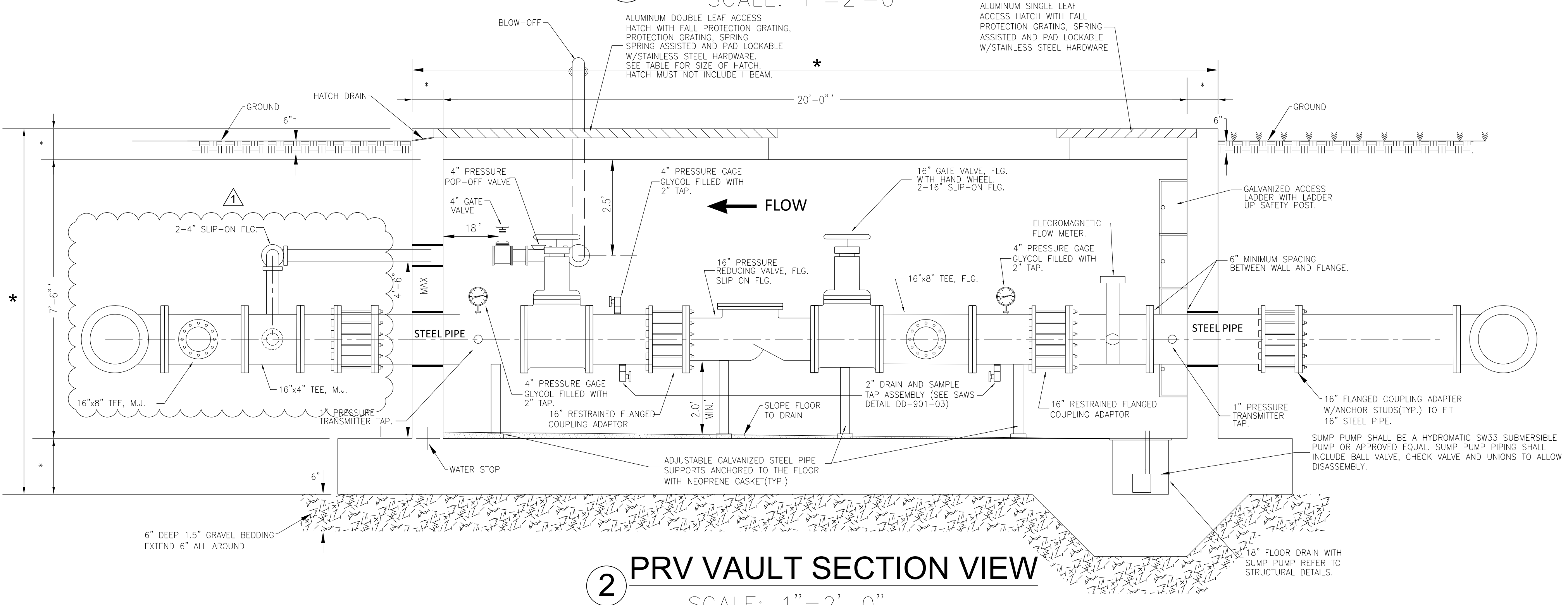
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1 PRV VAULT PLAN VIEW
SCALE: 1"=2'-0"



2 PRV VAULT SECTION VIEW
SCALE: 1"=2'-0"

- NOTES:**
- ALL COUPLING ADAPTORS SHALL HAVE A MINIMUM GAP OF 1" AND A MAXIMUM GAP OF 2".
 - SEE SAWS DETAIL DD-902-02, FOR RATED COUPLING ADAPTER DIMENSIONS.
 - ALL WELDED COUPLINGS SHALL BE RATED FOR 3000 LBS.
 - INSTALL CLOTH GASKET ISOLATION KITS BETWEEN ALL DISSIMILAR METALS.
 - ALL PROPOSED VALVES TO BE DIRECTLY BURIED SHALL BE "OPEN RIGHT" AND THE VALVE LID SHALL BE STAMPED "OPEN RIGHT".
 - CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR PIPING, FITTINGS, VALVES, AND ALL OTHER EQUIPMENT TO BE INSTALLED.
 - STEEL PIPE AND FLANGES SHALL BE RATED FOR A MINIMUM OPERATING PRESSURE OF 200 PSI AND SHALL MEET THE REQUIREMENTS OF SAWS MATERIAL STANDARD SPECIFICATION 05-30, "SPECIFICATION FOR STEEL WATER PIPE".
 - GATE VALVES SHALL BE RATED FOR A MINIMUM OPERATING PRESSURE OF 200 PSI AND SHALL MEET THE REQUIREMENTS OF SAWS MATERIAL STANDARD SPECIFICATION 21-02, "SPECIFICATIONS FOR RESILIENT-SEATED GATE AND TAPPING VALVES FOR WATER SUPPLY SERVICE ANSIAWWA C 509-01, 3-INCH THROUGH 20-INCH". VALVES SHALL BE MANUFACTURED BY AN APPROVED MANUFACTURER FROM THIS SPECIFICATION.
 - PRESSURE REDUCING AND PRESSURE RELIEF VALVES SHALL BE SUPPLIED BY THE CONTRACTOR. PRESSURE REDUCING VALVES SHALL BE CLA-VAL MODEL 90-01 AND PRESSURE RELIEF VALVE SHALL BE CLA-VAL MODEL 50-01.
 - STEEL COUPLING ADAPTORS SHALL BE RATED FOR A MINIMUM OPERATING PRESSURE OF 200 PSI. COUPLINGS SHALL BE MANUFACTURED BY DRESSER, JCM, SMITH-BLAIR, INC., OR APPROVED EQUAL.
 - THE INITIAL OPERATING PRESSURES FOR THE 16-INCH AND 6-INCH PRESSURE REDUCING VALVES SHALL BE SET TO 105 PSI AND 45 PSI & 50 PSI AND 50 PSI, RESPECTIVELY. (CONTRACTOR TO VERIFY WORKING PRESSURES BEFORE ORDERING VALVES)
 - PAINT SCHEDULE:
 - A. INTERIOR PIPING (INTERIOR AND EXTERIOR OF STEEL PIPE), VALVES, FITTINGS
 - 1 PRIMER COAT SHERWIN-WILLIAMS-MACROPOXY 646 PW @ 4-6 MILS DFT.
 - 2 FINISHED COATS SHERWIN-WILLIAMS-MACROPOXY 646 PW @ 4-6 MILS DFT.
 - B. EXTERIOR PIPING:
 - 1 PRIMER COAT SHERWIN-WILLIAMS-MACROPOXY 646 PW @ 4-6 MILS DFT.
 - 1 INTERMEDIATE COAT SHERWIN-WILLIAMS-MACROPOXY 646 PW @ 4-6 MILS DFT.
 - 1 FINISHED COAT SHERWIN-WILLIAMS-MACROPOXY 646 PW @ 3-4 MILS DFT.
 - SEE STRUCTURAL ENGINEER'S PLANS FOR VAULT DETAILS.

- NOTES:**
- GASKETS FOR FLANGES SHALL BE 1/8 INCH THICK, CLOTH-INSERTED RUBBER CORROSIVE ACID AND ALKALI FREE FOR POTABLE WATER SERVICE CONFORMING TO ANSI B16.21 AND AWWA C207. FLAT FACED FLANGES SHALL REQUIRE FULL-FACE GASKETS. RAISED FACE FLANGES SHALL REQUIRE FLAT RING GASKETS.
 - PRESSURE TRANSMITTERS SHALL BE INSTALLED WITH HEAT TRACE FREEZE PROTECTION AROUND THE FLUID HOUSING OF THE INSTRUMENT AND FITTINGS.

The seal appearing on this document was authorized by
 CARL BAIN
 P.E. 59598 ON
 8/30/2018
Carl Bain
 8/30/18

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 7072 San Pedro Ave., San Antonio, TX 78216
 Ph: (210) 494-9225 Fax: (210) 494-5120
 T336, No. F-1712 www.mbinc.com

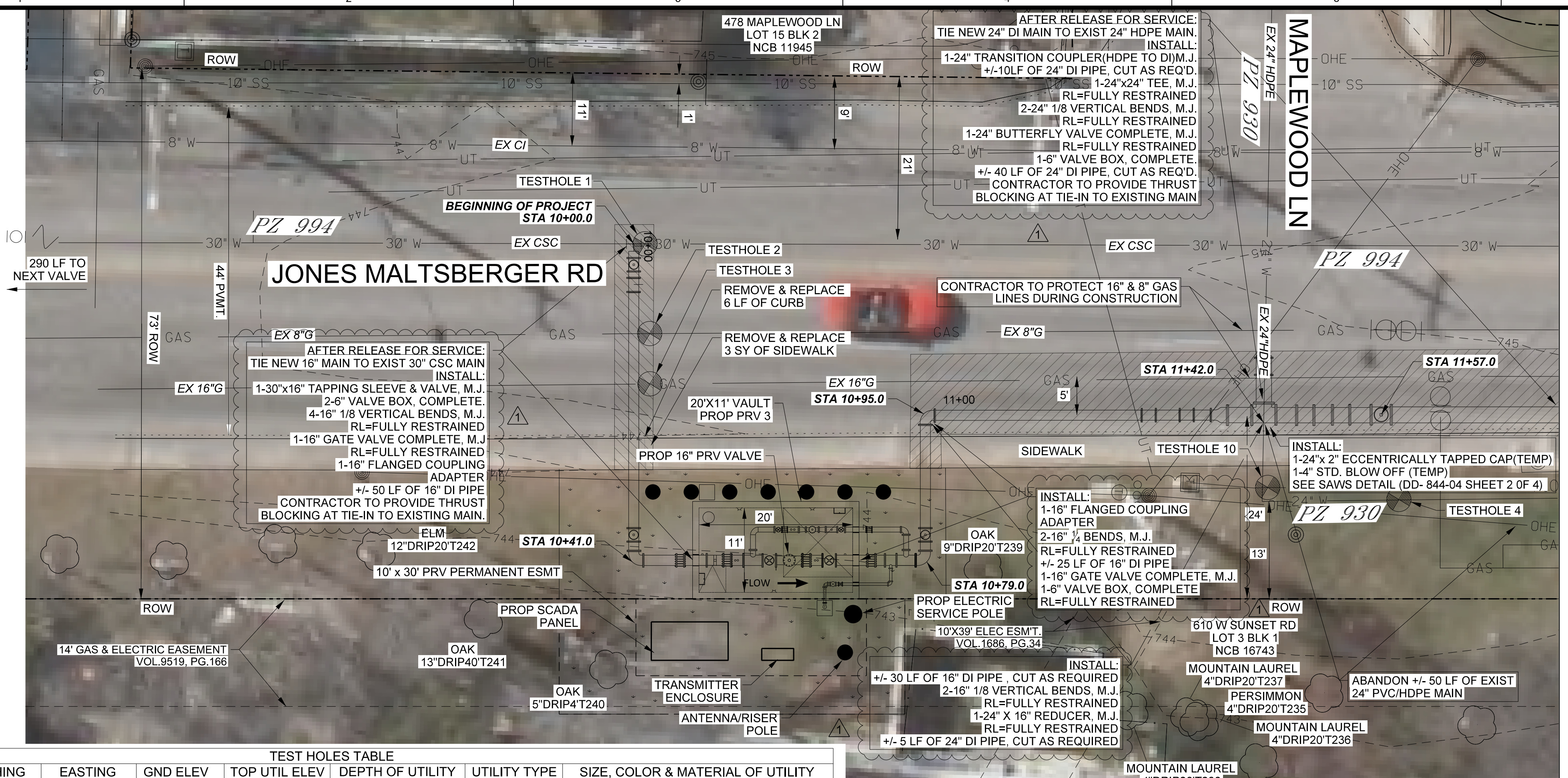
SAN ANTONIO WATER SYSTEM

MARK	DATE	DESCRIPTION	BY
1	08-30-2018	Addendum No. 4	TT

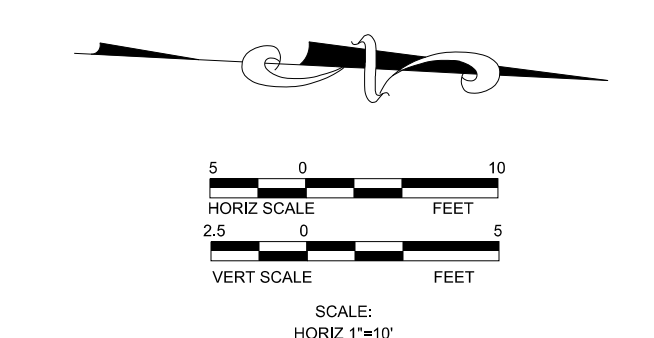
SAN ANTONIO WATER SYSTEM	PROJ: 200-09308-18001
CENTRAL WATER INTEGRATION PIPELINE	DESN: CC
MALTSBERGER PS IMPROVEMENTS	DRWN: C-3805
PRESSURE REDUCING VALVE ASSEMBLY PLAN	CHKD: CB
PRV-2	

M-2304

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NOTE: CONTRACTOR MUST COORDINATE WATER SHUT-DOWNS AND INTERRUPTIONS WITH PIPELINE SEMENT 5-4 PROJECT.

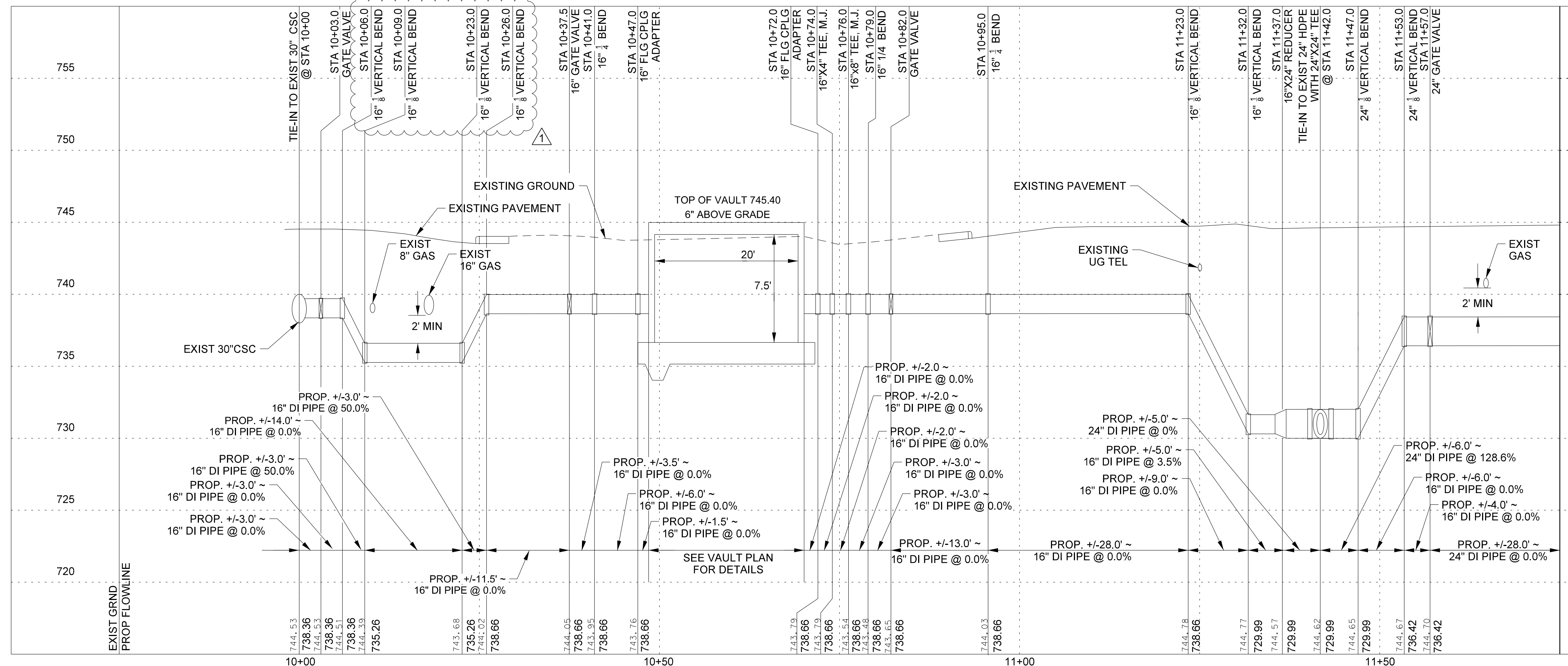


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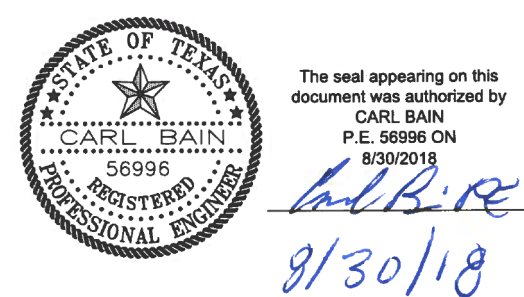
- TESTHOLE
- PROP. WATER VALVE
- PROP. WATER
- EXISTING SAN. SEWER
- EXISTING WATER MAIN
- EXISTING GAS MAIN
- EXISTING DIVISION VALVE
- EXISTING WATER VALVE
- UNDERGROUND ELEC.
- UNDERGROUND TELE.
- PVMT SDLK & DRWY REPAIR
- SODDING & LANDSCAPE REPAIR
- SEDIMENT CONTROL FENCE

POINT NO.	NORTHING	EASTING	GND ELEV	TOP UTIL ELEV	DEPTH OF UTILITY	UTILITY TYPE	SIZE, COLOR & MATERIAL OF UTILITY
TH-1	2,133,670.32	13,734,753.96	744.57	739.31	5.26	30" WATER	CONCRETE
TH-2	2,133,681.97	13,734,754.91	748.58	743.56	5.02	GAS	STEEL
TH-3	2,133,688.50	13,734,755.14	744.30	740.47	3.93	GAS	STEEL
TH-4	2,133,700.67	13,734,853.02	744.52	737.94	6.58	WATER	CONCRETE CAP
TH-10	2,133,699.61	13,734,835.90	745.17	742.56	2.61	FIBER OPTIC	2-4" PVC COMMUNICATION LINES

PROPOSED PRV 3



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SAN ANTONIO WATER SYSTEM

BY	DATE	DESCRIPTION
TT	08-30-2018	Addendum No. 4

SAN ANTONIO WATER SYSTEM
 CENTRAL WATER INTEGRATION PIPELINE
 MALTSBERGER PS IMPROVEMENTS

**INTERCONNECTION
 PLAN & PROFILE PRV3**

PROJ: 200-09308-18001

DESN: CC

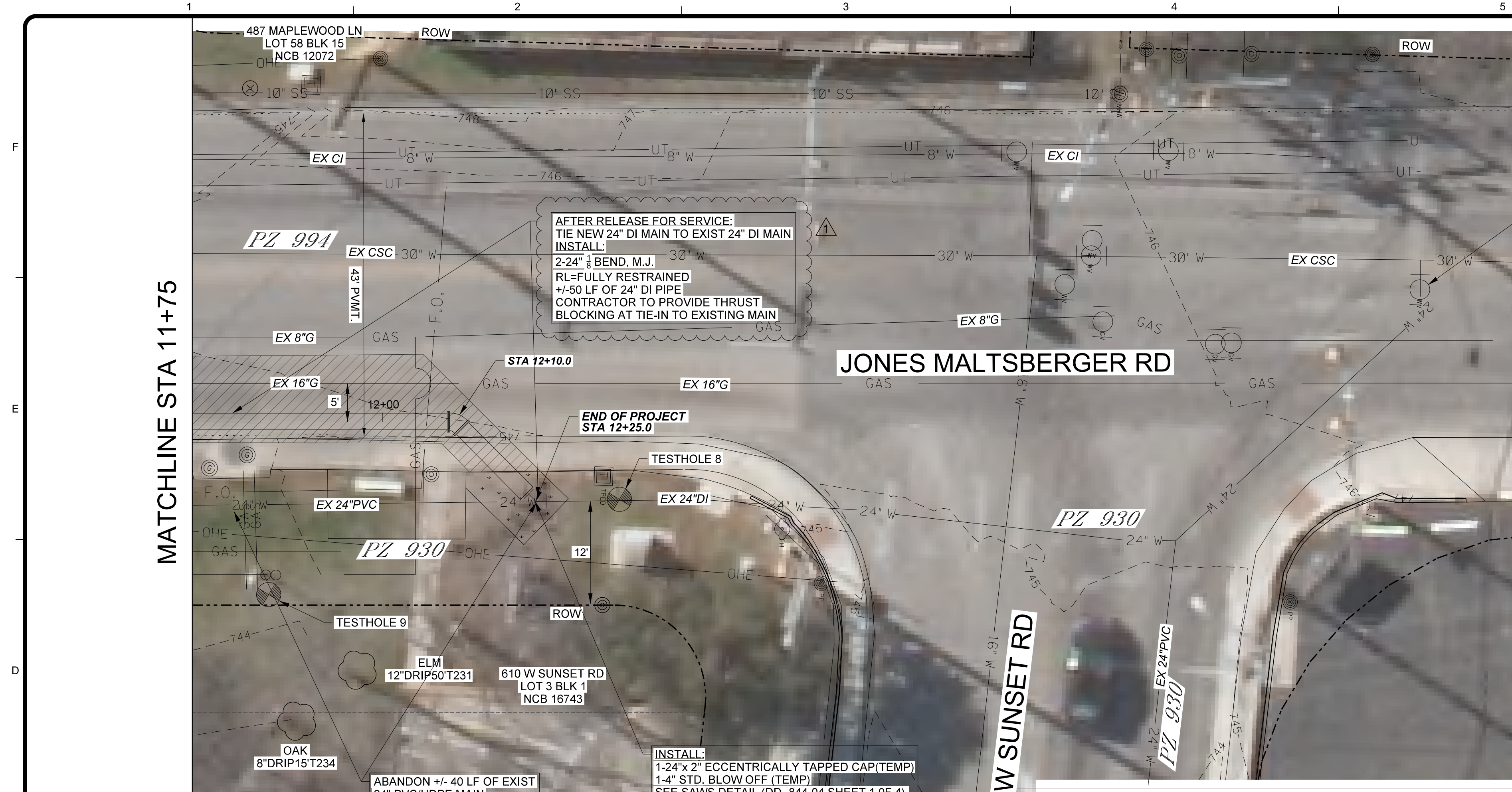
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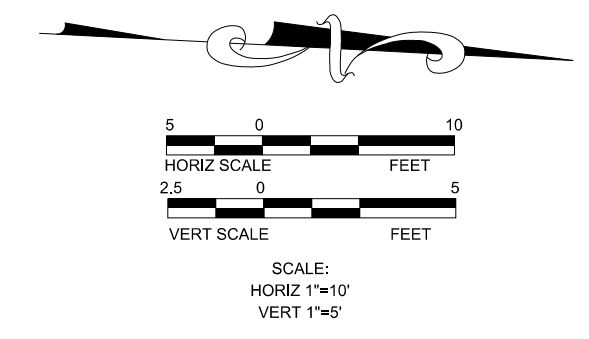
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TRENCH SAFETY PROTECTION:
 CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND ANTICIPATED INSTALLATION SITE(S) WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES. THE CONTRACTOR'S IMPLEMENTATION OF THE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATIONS SAFETY PROTECTION THAT COMPLIES WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

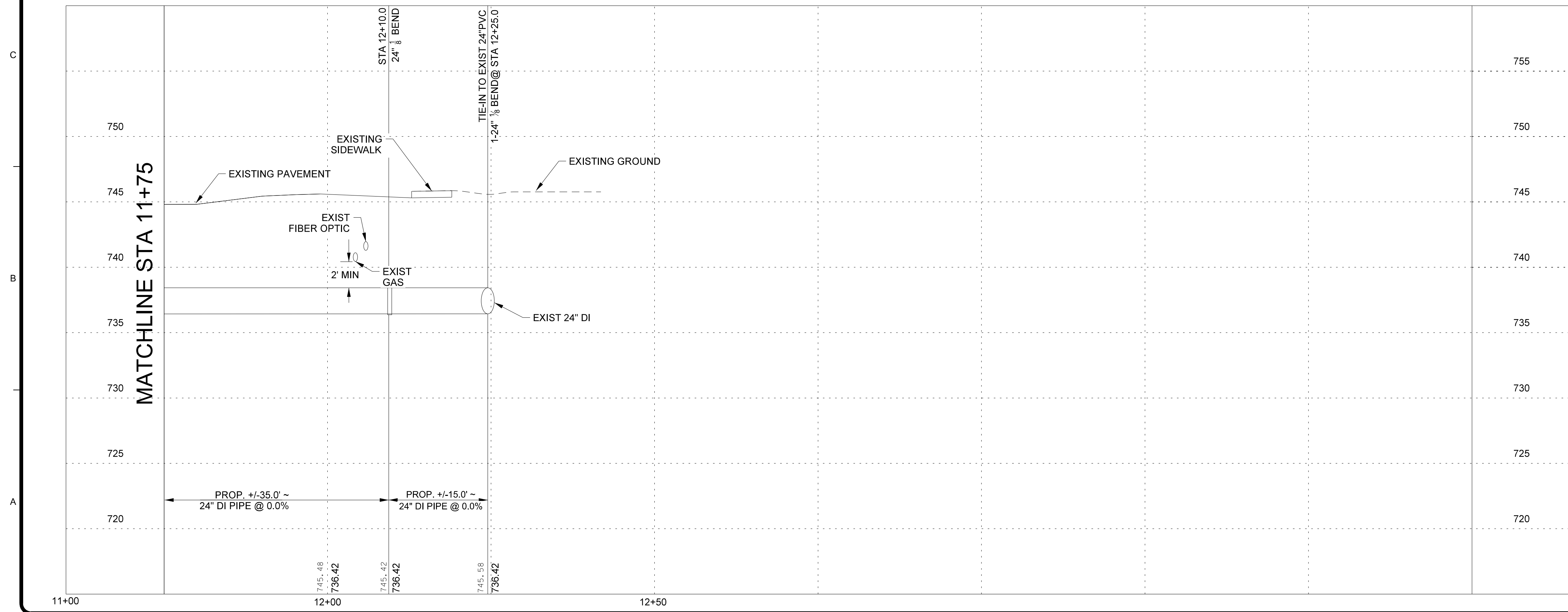


LEGEND

- TESTHOLE
- PROP. WATER VALVE
- PROP. WATER
- EXISTING SAN. SEWER
- EXISTING WATER MAIN
- EXISTING GAS MAIN
- EXISTING DIVISION VALVE
- EXISTING WATER VALVE
- UNDERGROUND ELEC.
- UNDERGROUND TELE.
- PVMT SDLK & DRWY REPAIR
- SODDING & LANDSCAPE REPAIR
- SEDIMENT CONTROL FENCE

POINT NO.	NORTHING	EASTING	GND ELEV	TOP UTIL ELEV	DEPTH OF UTILITY	UTILITY TYPE	SIZE, COLOR & MATERIAL OF UTILITY
TH-8	2,133,697.69	13,734,924.58	745.21	738.71	6.50	30" WATER	CONCRETE
TH-9	2,133,711.46	13,734,879.19	744.37	740.43	3.94	GAS	STEEL

PROPOSED PRV 3



The seal appearing on this document was authorized by
 CARL BAIN
 P.E. 55996 ON
 8/30/2018
Carl Bain
 8/30/18

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BID SET

SAN ANTONIO WATER SYSTEM

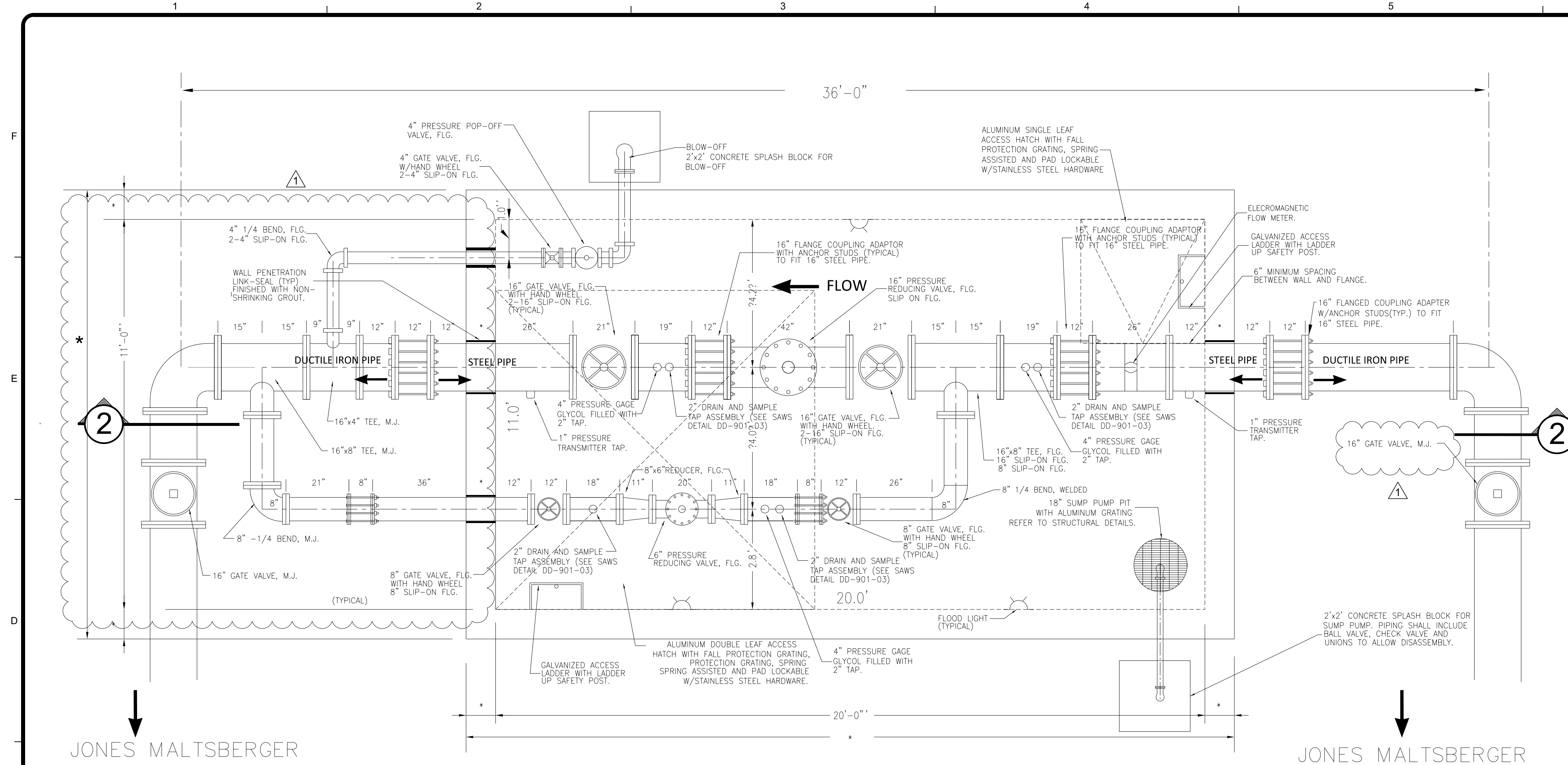
MARK	DATE	DESCRIPTION
1	08-30-2018	Addendum No. 4

SAN ANTONIO WATER SYSTEM
 CENTRAL WATER INTEGRATION PIPELINE
 MALTSBERGER PS IMPROVEMENTS
**INTERCONNECTION
 PLAN & PROFILE PRV3**

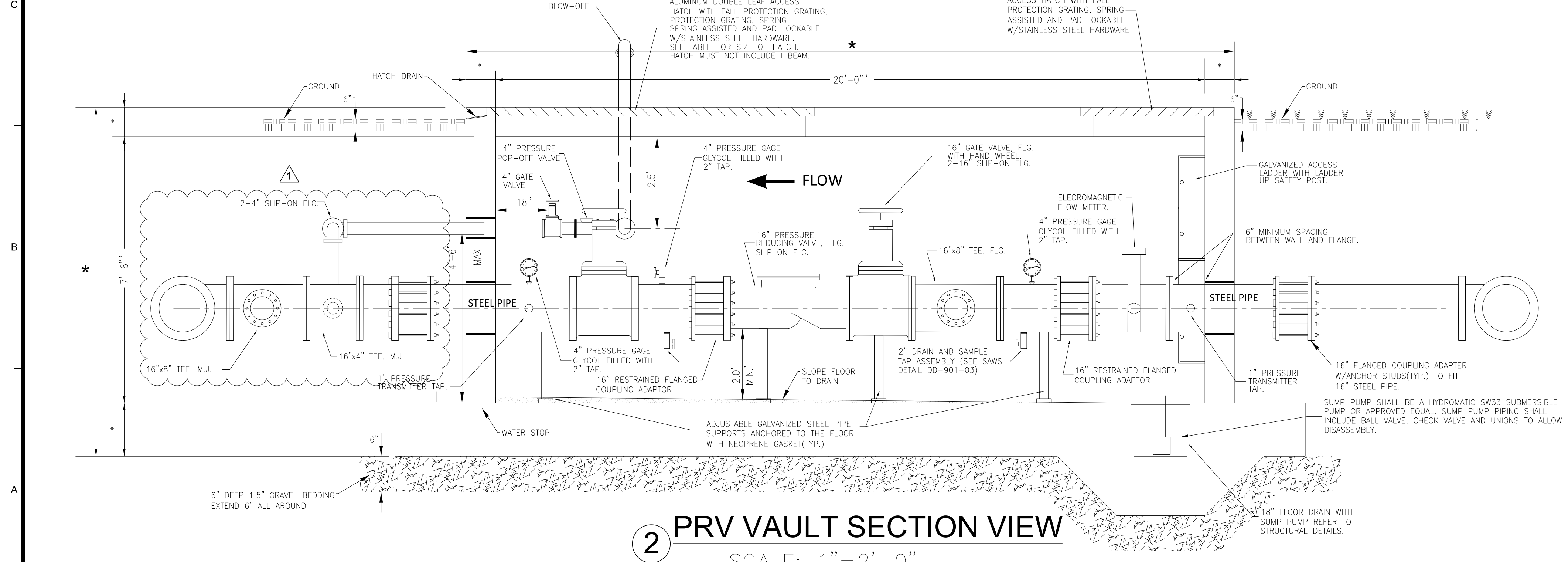
PROJ: 200-09308-18001
 DESN: CC
 DRWN: C-3805
 CHKD: CB

M-2307

12/13/2017 9:43:19 AM - W:\WORK\1471 SAWS VISTA RIDGE INTEGRATION PROJECT (TETRA TECH)\REFERENCE\BS-22\34VT-TF.DWG - MANUEL CORTINA



1 PRV VAULT PLAN VIEW
SCALE: 1"=2'-0"



2 PRV VAULT SECTION VIEW
SCALE: 1"=2'-0"

*SEE STRUCTURAL ENGINEER'S PLANS FOR VAULT DETAILS

NOTES:

- ALL COUPLING ADAPTORS SHALL HAVE A MINIMUM GAP OF 1" AND A MAXIMUM GAP OF 2".
- SEE SAWS DETAIL DD-902-02, FOR FLANGED COUPLING ADAPTER DIMENSIONS.
- ALL WELDED COUPLINGS SHALL BE RATED FOR 3000 LBS.
- INSTALL CLOTH GASKET ISOLATION KITS BETWEEN ALL DISSIMILAR METALS.
- ALL PROPOSED VALVES WITHIN VAULT SHALL BE "OPEN LEFT". ALL PROPOSED VALVES TO BE DIRECTLY BURIED SHALL BE "OPEN RIGHT" AND THE VALVE LID SHALL BE STAMPED "OPEN RIGHT".
- CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR PIPING, FITTINGS, VALVES, AND ALL OTHER EQUIPMENT TO BE INSTALLED.
- STEEL PIPE AND FLANGES SHALL BE RATED FOR A MINIMUM OPERATING PRESSURE OF 200 PSI AND SHALL MEET THE REQUIREMENTS OF SAWS MATERIAL STANDARD SPECIFICATION 05-30, "SPECIFICATION FOR STEEL WATER PIPE".
- GATE VALVES SHALL BE RATED FOR A MINIMUM OPERATING PRESSURE OF 200 PSI AND SHALL MEET THE REQUIREMENTS OF SAWS MATERIAL STANDARD SPECIFICATION 21-02, "SPECIFICATIONS FOR RESILIENT-SEATED GATE AND TAPPING VALVES FOR WATER SUPPLY SERVICE ANSI/AWWA C 509-01, 3-INCH THROUGH 20-INCH". VALVES SHALL BE MANUFACTURED BY AN APPROVED MANUFACTURER FROM THIS SPECIFICATION.
- PRESSURE REDUCING AND PRESSURE RELIEF VALVES SHALL BE SUPPLIED BY THE CONTRACTOR. PRESSURE REDUCING VALVES SHALL BE CLA-VAL MODEL 90-01 AND PRESSURE RELIEF VALVE SHALL BE CLA-VAL MODEL 50-01.
- STEEL COUPLING ADAPTORS SHALL BE RATED FOR A MINIMUM OPERATING PRESSURE OF 200 PSI. COUPLINGS SHALL BE MANUFACTURED BY DRESSER, JCM, SMITH-BLAIR, INC., OR APPROVED EQUAL.
- THE INITIAL OPERATING PRESSURES FOR THE 16-INCH AND 6-INCH PRESSURE REDUCING VALVES SHALL BE SET TO 105 PSI AND 45 PSI & 50 PSI AND 50 PSI, RESPECTIVELY. (CONTRACTOR TO VERIFY WORKING PRESSURES BEFORE ORDERING VALVES)
- PAINT SCHEDULE:
 - A. INTERIOR PIPING (INTERIOR AND EXTERIOR OF STEEL PIPE), VALVES, FITTINGS
 - 1 PRIMER COAT SHERWIN-WILLIAMS-MACROPOXY 646 PW @ 4-6 MILS DFT.
 - 2 FINISHED COATS SHERWIN-WILLIAMS-MACROPOXY 646 PW @ 4-6 MILS DFT.
 - B. EXTERIOR PIPING:
 - 1 PRIMER COAT SHERWIN-WILLIAMS-MACROPOXY 646 PW @ 4-6 MILS DFT.
 - 1 INTERMEDIATE COAT SHERWIN-WILLIAMS-MACROPOXY 646 PW @ 4-6 MILS DFT.
 - 1 FINISHED COAT SHERWIN-WILLIAMS-MACROPOXY 646 PW @ 3-4 MILS DFT.
- SEE STRUCTURAL ENGINEER'S PLANS FOR VAULT DETAILS.

NOTES:

- GASKETS FOR FLANGES SHALL BE 1/8 INCH THICK, CLOTH-INSERTED RUBBER CORROSIVE ACID AND ALKALI FREE FOR POTABLE WATER SERVICE CONFORMING TO ANSI B16.21 AND AWWA C207. FLAT FACED FLANGES SHALL REQUIRE FULL-FACE GASKETS. RAISED FACE FLANGES SHALL REQUIRE FLAT RING GASKETS.
- PRESSURE TRANSMITTERS SHALL BE INSTALLED WITH HEAT TRACE FREEZE PROTECTION AROUND THE FLUID HOUSING OF THE INSTRUMENT AND FITTINGS.

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY
CARL BAIN
P.E. 95968 ON
8/30/2018
Carl Bain
8/30/18

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SAN ANTONIO WATER SYSTEM

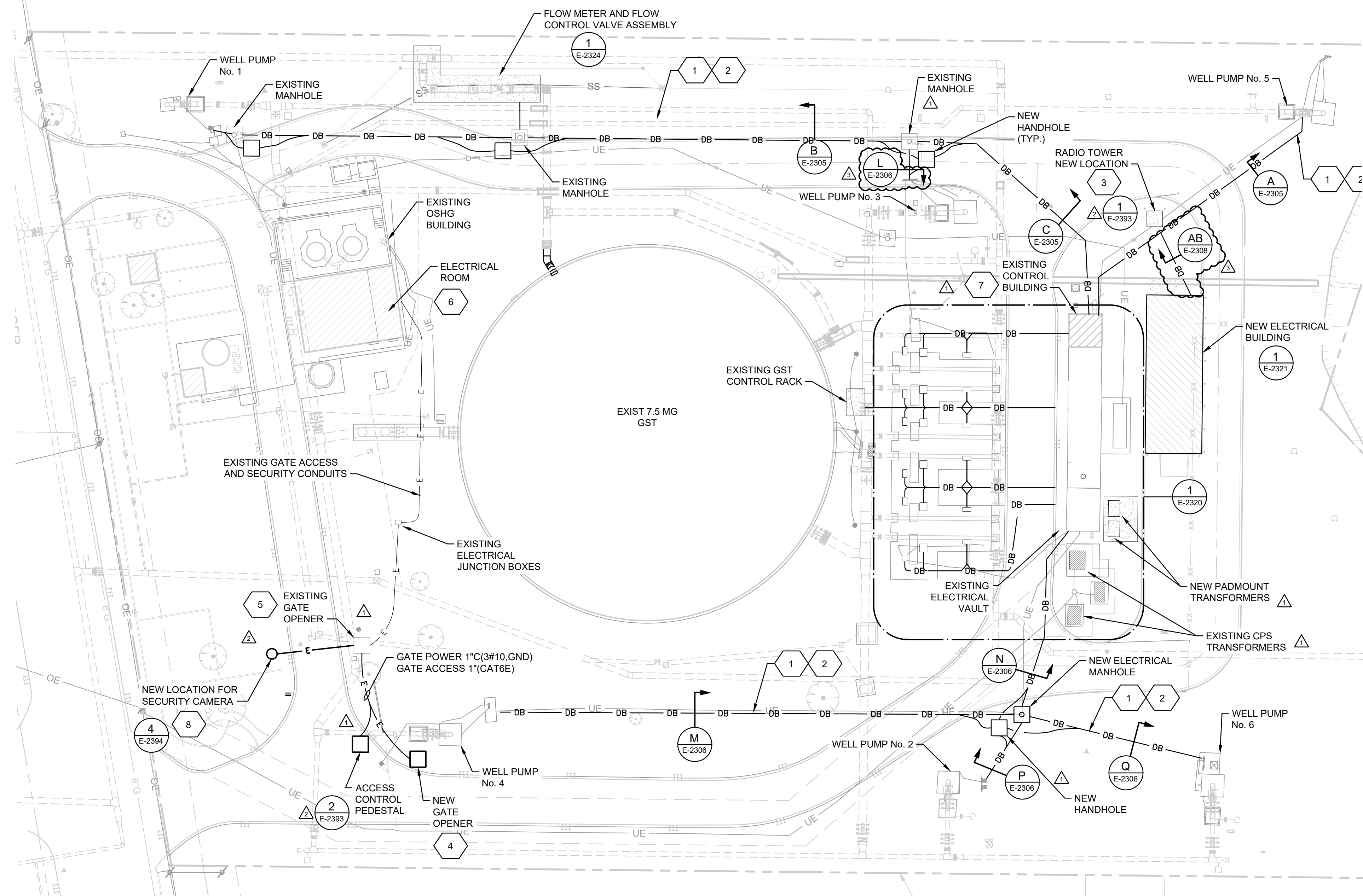
MARK	DATE	DESCRIPTION
1	08-30-2018	Addendum No. 4

SAN ANTONIO WATER SYSTEM
CENTRAL WATER INTEGRATION PIPELINE
MALTSBERGER PS IMPROVEMENTS
PRESSURE REDUCING
VALVE ASSEMBLY PLAN
PRV-3

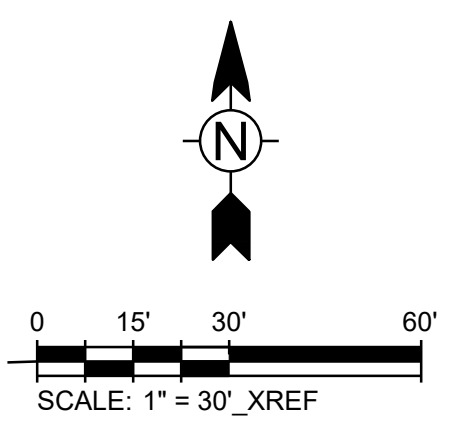
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DESN:	CC
DRWN:	C-3805
CHKD:	CB

M-2309

8/30/2018 6:02:35 PM - O:\PROJECTS\SAN ANTONIO\09308\200-09308-18001-C\CAD\SHEET\MALTSBERGER PS & BASIN IMP'E - 2304\MALTSBERGER PS ELECTRICAL SITE PLAN - I.DWG - JOHNSON, EDWARD



1 SITE PLAN - 1
SCALE: 1"=30'



- NOTES:**
- CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING EXISTING UNDERGROUND DUCTBANKS AND UTILITIES.
 - NEW DUCTBANKS WITH 5KV CONDUCTORS SHALL BE INSTALLED WITH A MINIMUM SEPARATION OF 7.5" (EDGE OF CONCRETE TO EDGE OF CONCRETE).
 - REFER TO TOWER NOTES ON THIS SHEET.
 - CONTRACTOR SHALL INSTALL NEW GATE CONTROLLER AND ACCESSORIES. NEW CONTROLLER SHALL BE CONNECTED TO EXISTING GATE CONTROLLER.
 - CONTRACTOR SHALL VERIFY EXISTING CONDUIT AND WIRES FROM EXISTING GATE CONTROLLER NETWORK IN ELECTRICAL ROOM. CONTRACTOR SHALL INSTALL NEW POWER AND COMMUNICATIONS AS SHOWN.
 - CONTRACTOR SHALL CONNECT NEW GATE TO THE EXISTING ACCESS CONTROLLER. PROVIDE SERVICES AS REQUIRED TO HAVE GATE OPERATE TO MATCH EXISTING.
 - REFER TO SHEET I-2311 FOR SUPERVISORY CONTROL PANEL REPLACEMENT REQUIREMENTS.
 - CONTRACTOR SHALL RELOCATE EXISTING SECURITY CAMERA INCLUDING FOUNDATION AND POLE. FURNISH AND INSTALL NEW 1" UNDER ROAD TO NEW LOCATION FROM EXISTING. PROVIDE UNDERGROUND JUNCTION BOX AT EXISTING LOCATION. FURNISH AND INSTALL NEW CAT-6 CABLE AS SHOWN ON I-2311.

- TOWER NOTES:**
- CONTRACTOR SHALL TEMPORARILY MOVE EXISTING ANTENNA (2 TOTAL) FROM EXISTING TOWER.
 - BROAD BAND ANTENNA SHALL BE MOUNTED TO GST HANDRAIL. THIS TEMPORARY ANTENNA SHALL BE OPERATIONAL PRIOR TO REMOVING EXISTING ANTENNA.
 - WELL PUMP FLOW METER WIRELESS NETWORK ANTENNA FOR FLOW METERS SHALL BE MOUNTED TO EXISTING CONTROL BUILDING. THIS TEMPORARY ANTENNA SHALL BE OPERATIONAL PRIOR TO REMOVING EXISTING ANTENNA.
 - PLC PROGRAMMING TO BE PERFORMED BY OWNER. CONTRACTOR TO COORDINATE TIMING OF WORK IN ADVANCE TO FACILITATE REQUIRED PROGRAMMING ACTIVITIES. CONTRACTOR TO ASSIST DURING LOOP CHECKOUT AND I/O VERIFICATION.
 - EXISTING TOWER AND ATTACHED ENCLOSURES SHALL BE REMOVED FROM THE EXISTING FOUNDATION. CONTRACTOR SHALL DISASSEMBLE TOWER AND STORE FOR FUTURE INSTALLATION.
 - CONTRACTOR SHALL REMOVE EXISTING FOUNDATION GROUNDING RING AND CONDUITS FOR EXISTING TOWER. CONDUITS SHALL BE REMOVED BACK TO SOURCE IN CONTROL BUILDING. CONTRACTOR SHALL REPAIR EMPTY OPENINGS IN CONTROL BUILDING WALL.
 - AFTER FINAL GRADING IS COMPLETED FOR NEW ELECTRICAL BUILDING, PROVIDE NEW TOWER FOUNDATION AS SHOWN ON STRUCTURAL DRAWINGS.
 - THE EXISTING SHALL BE ASSEMBLED AND MOUNTED TO THE NEW FOUNDATION.
 - ANTENNA AND CABLES SHALL BE INSTALLED TO MATCH EXISTING CONFIGURATION.
 - NEW ANTENNAE SHALL BE OPERATIONAL PRIOR TO REMOVING TEMPORARY ANTENNAE.

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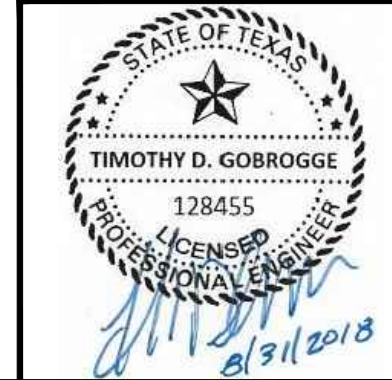
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SAN ANTONIO WATER SYSTEM

MARK	DATE	DESCRIPTION
△	08/21/18	PER ADDENDUM NO. 2
△	08/28/18	PER ADDENDUM NO. 3
△	08/31/18	PER ADDENDUM NO. 4

SAN ANTONIO WATER SYSTEM
CENTRAL WATER INTEGRATION PIPELINE
MALTSBERGER PS IMPROVEMENTS
MALTSBERGER PS ELECTRICAL
SITE PLAN - 1

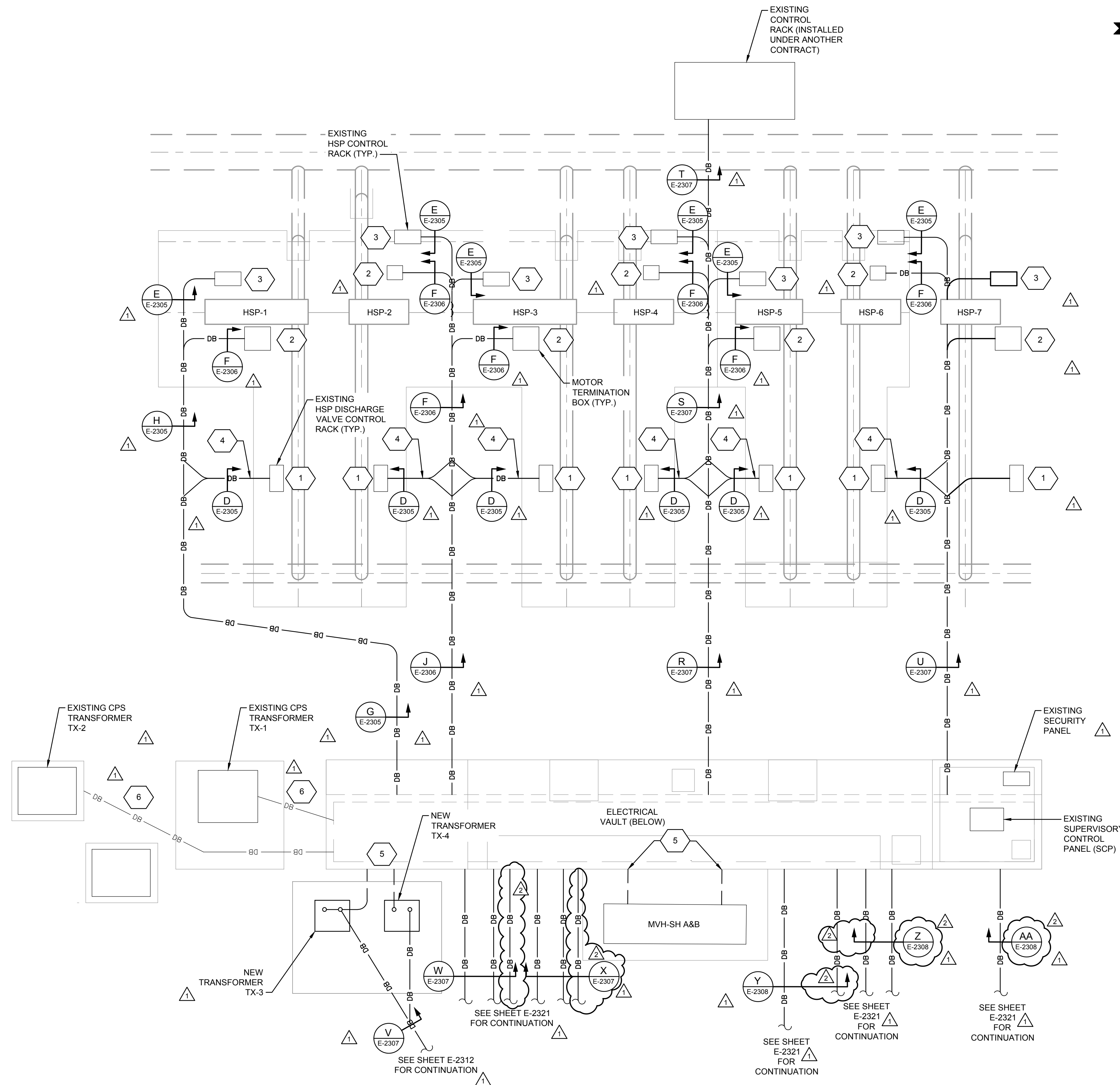
PROJ:	200-09308-18001
DESN:	TDG
DRWN:	EDJ
CHKD:	



E-2304

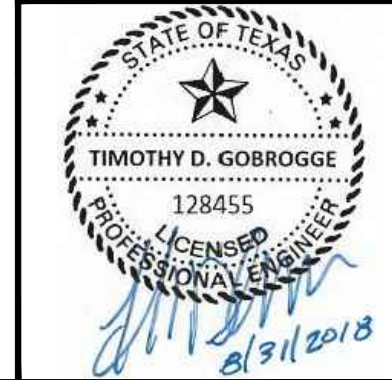
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8/30/2018 7:00:18 PM - N:\TSS063F51\PROJECTS\09308\200-09308-18001-C\CAD\SHETS\MALTSBERGER PS ELECTRICAL ENLARGED POWER PLAN.DWG - GORROGGE, TIM



1 ENLARGED POWER PLAN
SCALE: 1/8" = 1'-0"

- NOTES:**
- CONTRACTOR SHALL ROUTE NEW DUCTBANK TO THE EXISTING HSP DISCHARGE VALVE CONTROL RACK. CONDUIT SIZE AND WIRE FILL SHALL BE AS SHOWN ON E-2336 HSP RISER DIAGRAM.
 - CONTRACTOR SHALL ROUTE NEW DUCTBANK TO MOTOR TERMINATION BOX. FURNISH AND INSTALL NEW CONDUIT INTO BOX FOR NEW MOTOR FEEDER.
 - CONTRACTOR SHALL ROUTE NEW DUCTBANK TO HSP CONTROL RACK. CONDUIT SIZE AND WIRE FILL SHALL BE AS SHOWN ON E-2336 HSP RISER DIAGRAM.
 - NEW DUCTBANK SHALL BE ROUTED TO EXISTING DEVICES LOCATION AFTER EXISTING DUCTBANKS ARE REMOVED.
 - CONTRACTOR SHALL REUSE CONDUIT TO FUSED SWITCH FOR TRANSFORMERS TX-3 AND TX-4. INSTALL NEW CONDUIT TO TRANSFORMER. INSTALL NEW CONDUCTORS AS SHOWN ON E-2312.
 - CONTRACTOR SHALL USE EXISTING CONDUIT FROM CPS TRANSFORMERS. FURNISH AND INSTALL NEW CONDUCTORS AS SHOWN ON E-2312.



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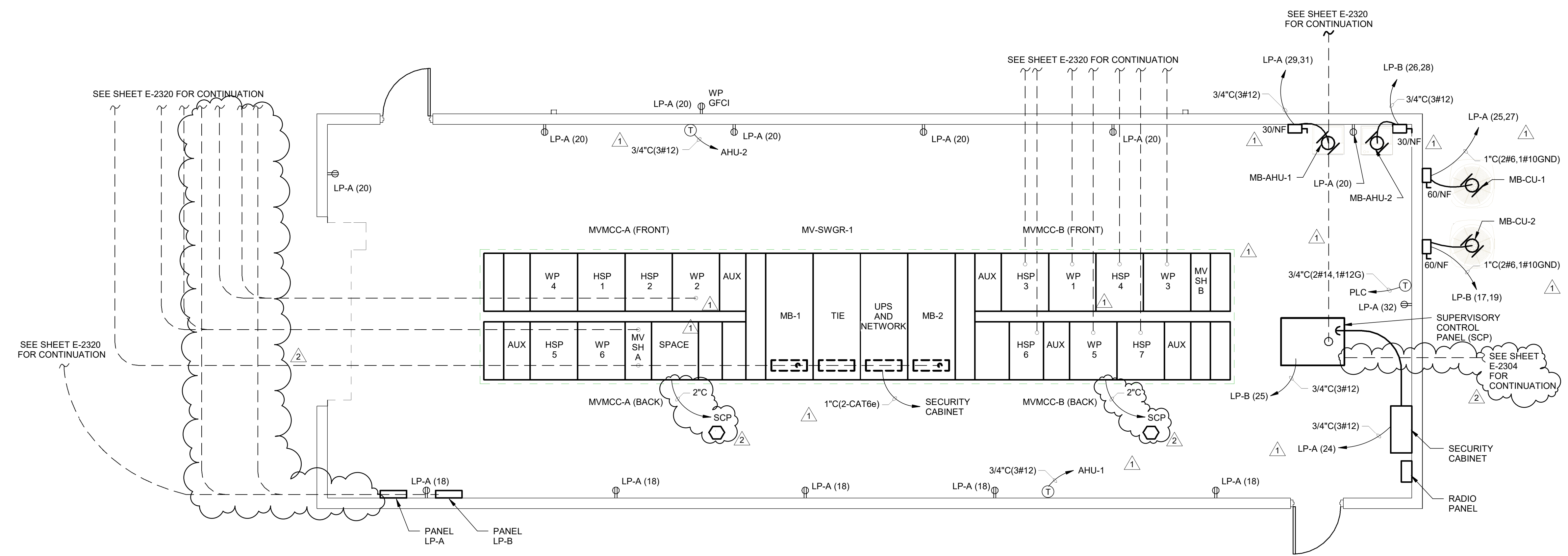
SAN ANTONIO WATER SYSTEM

MARK	DATE	DESCRIPTION
BY	EDJ	
	TDG	
	08/29/18	PER ADDENDUM NO. 3
	08/31/18	PER ADDENDUM NO. 4

SAN ANTONIO WATER SYSTEM
CENTRAL WATER INTEGRATION PIPELINE
MALTSBERGER PS IMPROVEMENTS
MALTSBERGER PS ELECTRICAL ENLARGED POWER PLAN

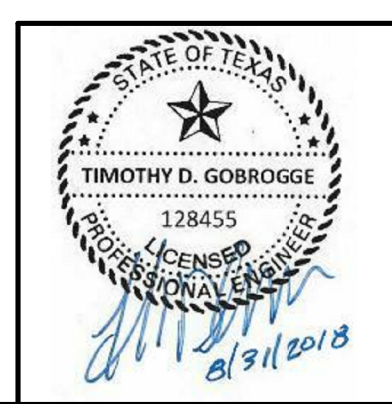
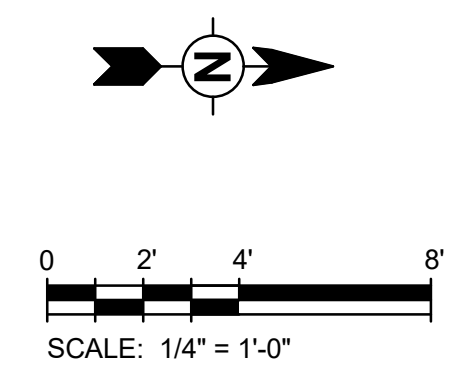
PROJ: 200-09308-18001
DESN: TDG
DRWN: EDJ
CHKD: -

E-2320



1 ELECTRICAL BUILDING POWER PLAN

NOTES
 1. ROUTE CONDUIT TO SCP MOTOR CONTROL CIRCUITS AND ALARMS PARALLEL TO STRUCTURAL MEMBERS. PROVIDE SUPPORT AS REQUIRED.



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SEE SHEET E-2320 FOR CONTINUATION

SAN ANTONIO WATER SYSTEM

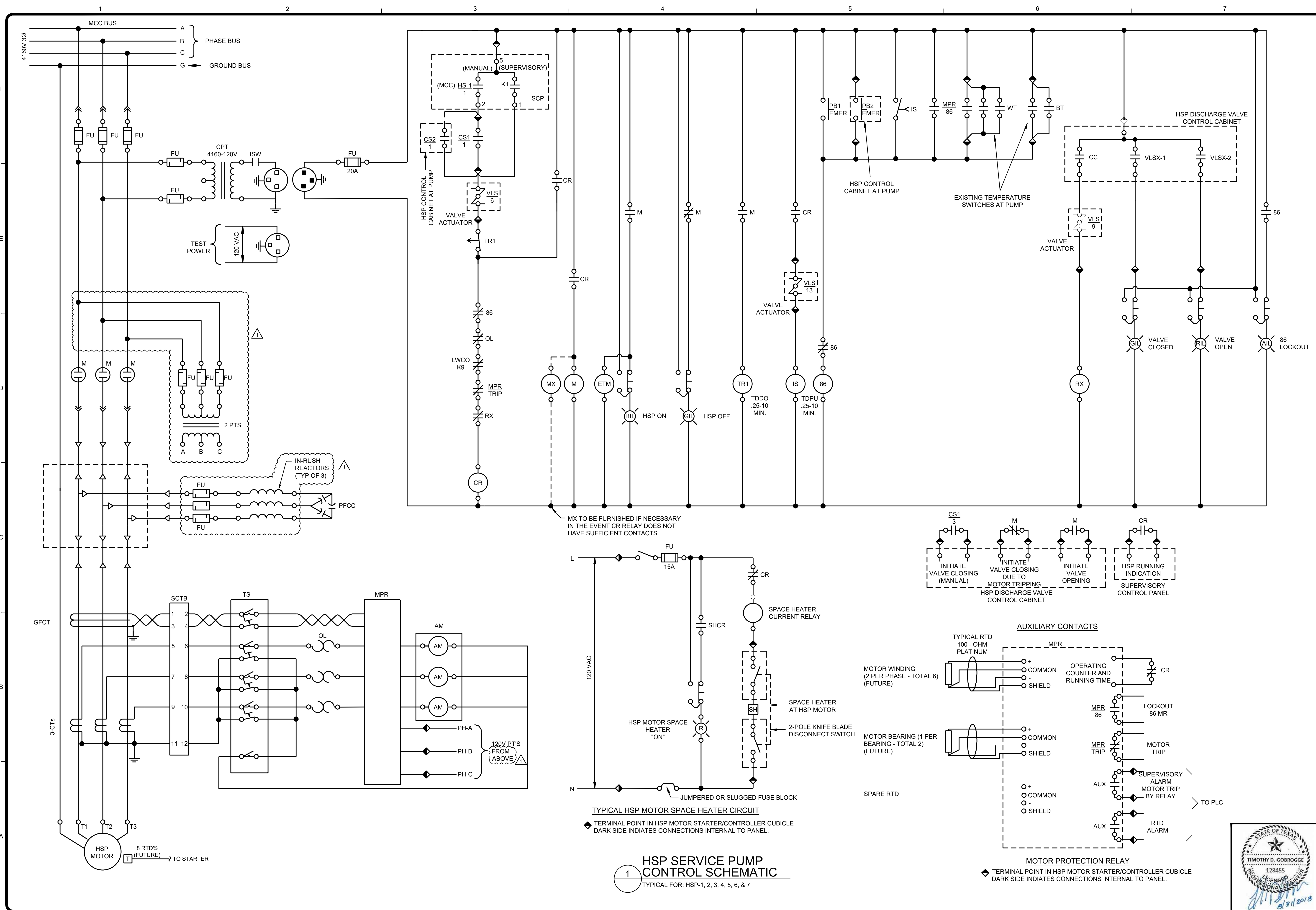
MARK	DATE	DESCRIPTION
1	08/28/18	PER ADDENDUM No. 3
2	08/31/18	PER ADDENDUM No. 4

SAN ANTONIO WATER SYSTEM
 CENTRAL WATER INTEGRATION PIPELINE
 PROJECT PUMP STATION IMPROVEMENTS
MALTSBERGER PS
 ELECTRICAL BLDG.
 POWER PLAN

PROJ:	200-09308-18001
DESN:	TDG
DRWN:	EDJ
CHKD:	-

E-2321

8/30/2018 4:35:13 PM - O:\PROJECTS\SAN ANTONIO\09308\200-09308-18001-C\CAD\SCHEM\TSBERGER PS & BASIN IMP.E - 2331\MALTSBERGER PS HIGH SERVICE PUMP CONTROL SCHEMATICS.DWG - JOHNSON, EDWARD



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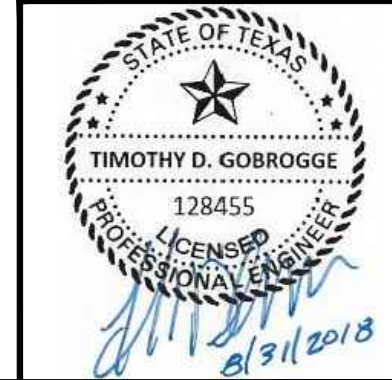
SAN ANTONIO WATER SYSTEM

MARK	DATE	DESCRIPTION
Δ	08/31/18	PER ADDENDUM NO. 4

SAN ANTONIO WATER SYSTEM
 CENTRAL WATER INTEGRATION PIPELINE
 MALTSBERGER PS IMPROVEMENTS
MALTSBERGER PS HIGH SERVICE PUMP CONTROL SCHEMATICS

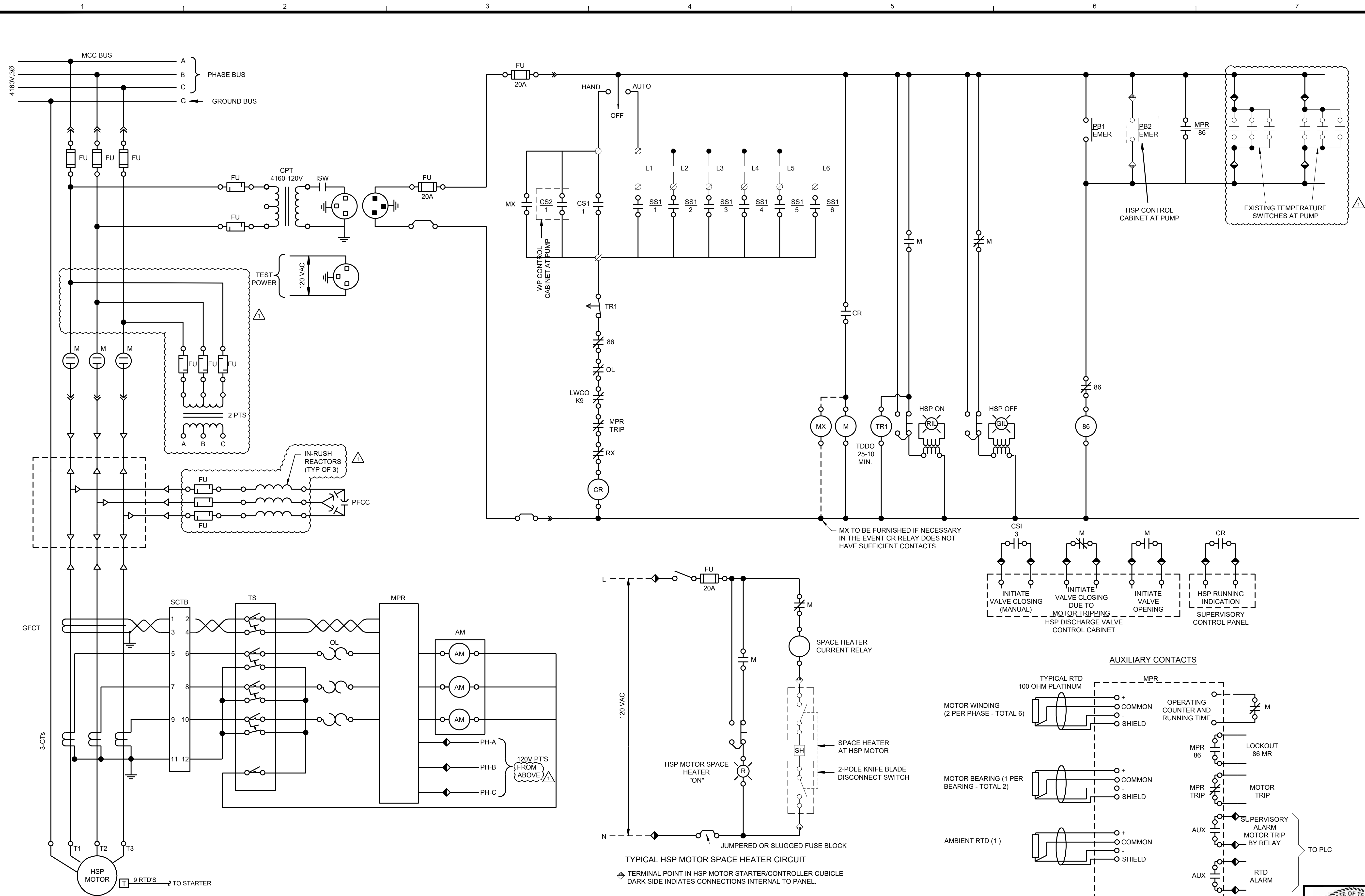
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 DESN: TDG
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E-2331



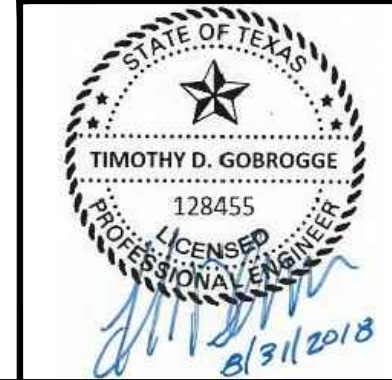
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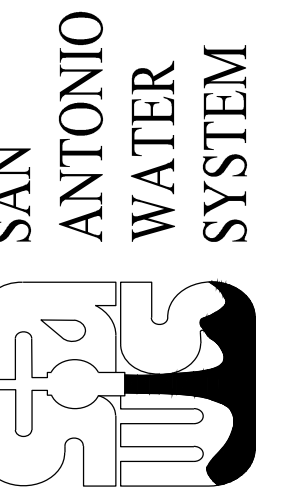


WELL PUMP WIRING DIAGRAM

TYPICAL FOR WP-1, 2, 3, 4, 5 & 6



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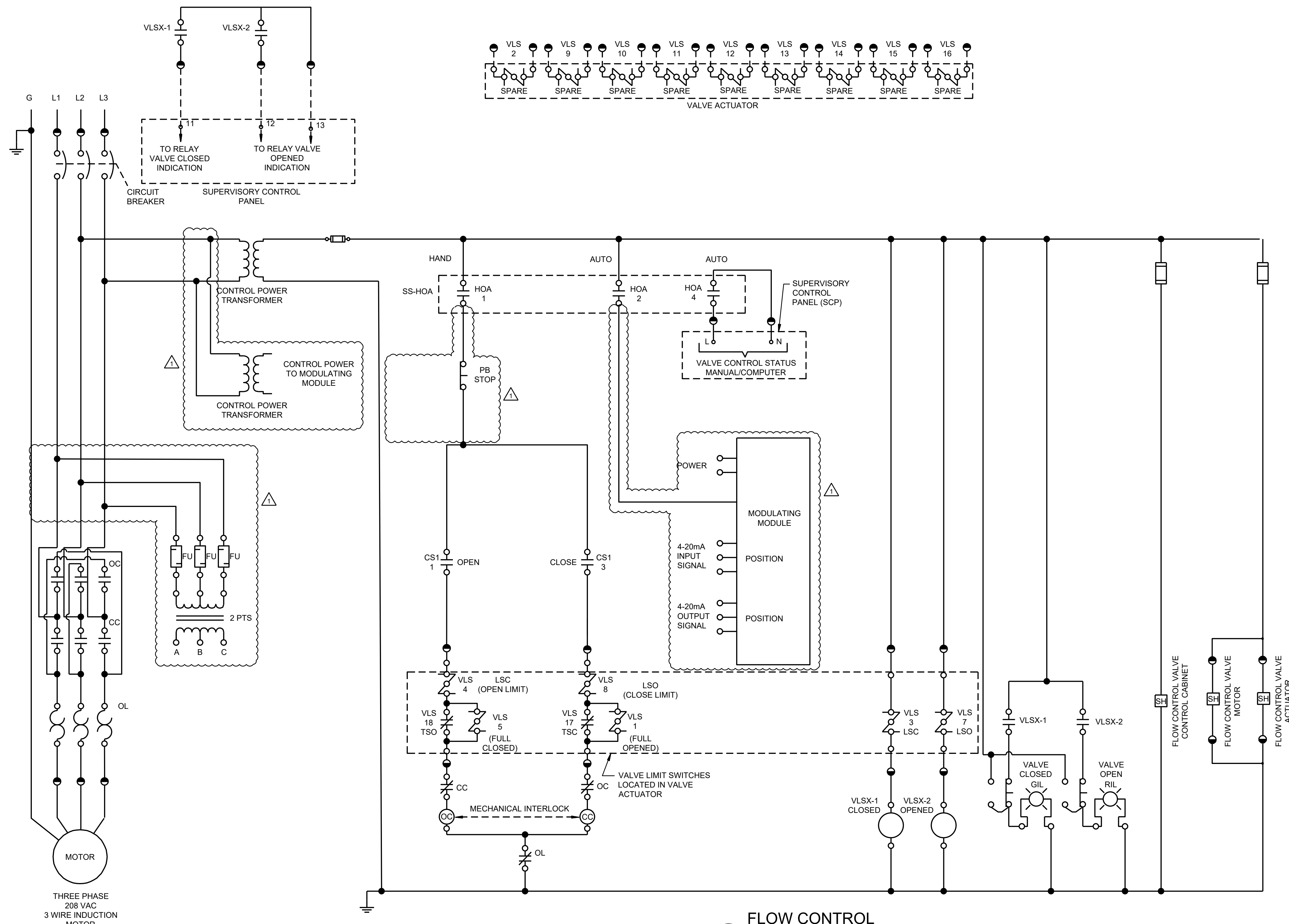
BY: EDJ
DATE: 08/31/18
DESCRIPTION: PER ADDENDUM NO. 4

SAN ANTONIO WATER SYSTEM
CENTRAL WATER INTEGRATION PIPELINE
MALTSBERGER PS IMPROVEMENTS
WELL PUMP
CONTROL SCHEMATICS

PROJ: 200-09308-18001
DESN: TDG
DRWN: EDJ
CHKD:

E-2332

8/30/2018 5:46:05 PM - O:\PROJECTS\SAN ANTONIO\09308\200-09308-18001-C\CAD\SHHEITFILES\MALTSBERGER PS & BASIN IMP'E - 2335 MALTSBERGER PS MODULATING FCV CONTROL SCHEMATICS.DWG - JOHNSON, EDWARD



1 FLOW CONTROL VALVE SCHEMATIC

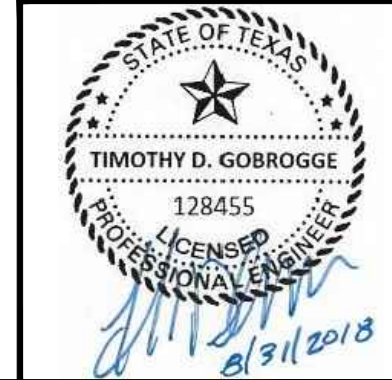
SELECTOR SWITCH (SS-HOA)			
CONTACT	POSITION		
	HAND	OFF	AUTO
1	X		
2			X
3	X		
4			X

SPARE CONTACT

X - INDICATES CONTACT IS CLOSED

NOTES:

- CONTROL SCHEMATIC IS BASED ON SAWS STANDARDS.
- TERMINAL POINT IN HSP DISCHARGE VALVE CONTROL PANEL (REMOTE TO VALVE ACTUATOR)
 ● DARK SIDE INDICATES CONNECTIONS INTERNAL TO CONTROL PANEL



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SAN ANTONIO WATER SYSTEM

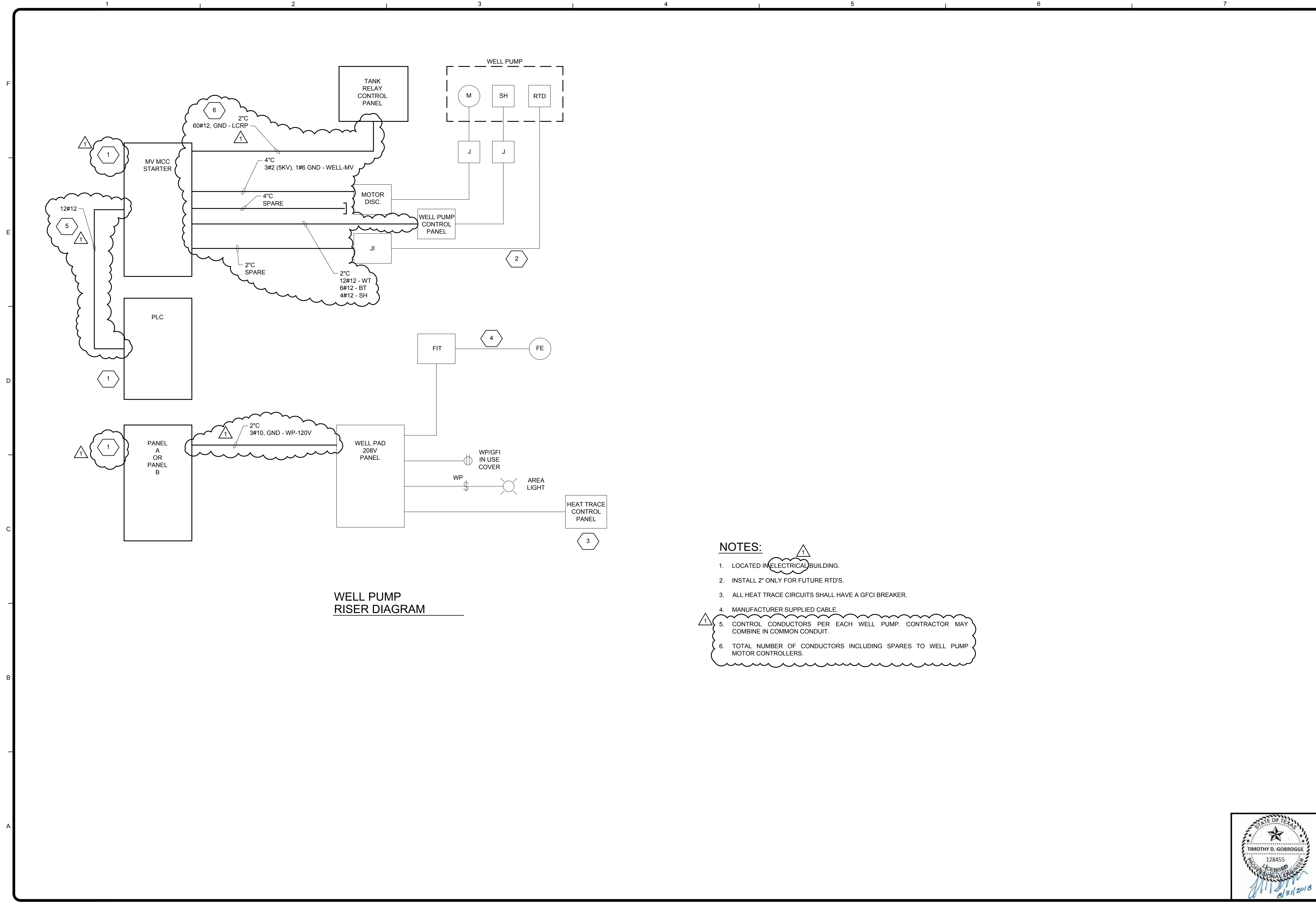
MARK	DATE	DESCRIPTION
Δ	08/31/18	PER ADDENDUM NO. 4

SAN ANTONIO WATER SYSTEM
 CENTRAL WATER INTEGRATION PIPELINE
 MALTSBERGER PS IMPROVEMENTS
 MALTSBERGER PS
 MODULATING FCV
 CONTROL SCHEMATICS

PROJ:	200-09308-18001
DESN:	TDG
DRWN:	EDJ
CHKD:	

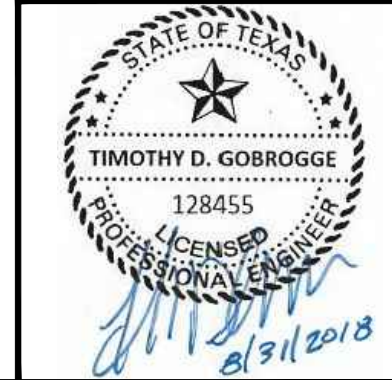
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8/30/2018 7:34:13 PM - N:\T\063\F51\PROJECTS\09308\200-09308-18001-C\CAD\SHSHEETFILES\MALTSBERGER PS & BASIN IMP IE - 2337 MALTSBERGER PS WELL PUMP RISER DIAGRAM.DWG - GOBROGGE, TIM



**WELL PUMP
RISER DIAGRAM**

- NOTES:**
1. LOCATED IN ELECTRICAL BUILDING.
 2. INSTALL 2" ONLY FOR FUTURE RTD'S.
 3. ALL HEAT TRACE CIRCUITS SHALL HAVE A GFCI BREAKER.
 4. MANUFACTURER SUPPLIED CABLE.
 5. CONTROL CONDUCTORS PER EACH WELL PUMP. CONTRACTOR MAY COMBINE IN COMMON CONDUIT.
 6. TOTAL NUMBER OF CONDUCTORS INCLUDING SPARES TO WELL PUMP MOTOR CONTROLLERS.



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<p>SAN ANTONIO WATER SYSTEM</p>	
BY	TDG
DATE	08/31/18
DESCRIPTION	PER ADDENDUM #4
MARK	1
SAN ANTONIO WATER SYSTEM CENTRAL WATER INTEGRATION PIPELINE MALTSBERGER PS IMPROVEMENTS MALTSBERGER PS WELL PUMPS RISER DIAGRAM	
PROJ:	200-09308-18001
DESN:	EDJ
DRWN:	TDG
CHKD:	-
<p>E-2337</p>	

8/30/2018 8:08:22 PM - N:\TSS063\F51\PROJECTS\09308\200-09308-18001-CAD\SHSHEET\FILES\MALTSBERGER PS & BASIN IMPV - 2338 MALTSBERGER PS PANEL SCHEDULE.DWG - G0BR0GGE, TIM

PANEL SCHEDULE: LP-A													
SERVICE: 208/120V, 3 PH, 4 W + GND													
BUS SIZE: 400A		LOAD:		NOTES:		FED FROM TX-3 AND TX-4. PROVIDE		LOCATION:		KIRK KEY SYSTEM			
MAIN BREAKER: MLO		CONN. 56.0 kVA											
10,000AIC		DEM. 56.0 kVA											
MOUNTING: SURFACE		DEM. 155.5 Amps											
CKT #	TRIP/POLE	NOTES	CIRCUIT DESCRIPTION	CONNECTED LOAD (VA)			CIRCUIT DESCRIPTION	NOTES	TRIP/POLE	CKT #			
1	15A/1		TEST POWER BUS A	240	2,400		OUTDOOR LIGHT CKT1		15A/1	2			
3	20A/1		ELECT. VAULT LIGHTS			1,100	2,400		15A/1	4			
5	20A/1		SPACE HEATER BUS A					750	8,500	6			
7	15A/3		HSP-1 PANEL K	1,440	8,500					8			
9	-					1,440	4,600			10			
11	-							1,440	4,600	12			
13	15A/3		HSP-2 PANEL L	1,440						14			
15	-					1,440				16			
17	-						1,440			18			
19	15A/3		HSP-5 PANEL P	1,440						20			
21	-					1,440				22			
23	-						1,440			24			
25	60A/2		MB-CU-1	7,700						26			
27	-					7,700				28			
29	20A/2		MB-AHU-1				1,870			30			
31	-			1,870						32			
33	-									34			
35	-									36			
37	400A/3	K	TRANSFORMER	-	-					38			
39	-		TX-3							40			
41	-									42			
TOTAL CONNECTED LOADS:				14,130	10,900	13,120	7,000	6,940	13,100				

PANELBOARD SCHEDULE - LPA

PANEL SCHEDULE: LP-B													
SERVICE: 208/120V, 3 PH, 4 W + GND													
BUS SIZE: 400A		LOAD:		NOTES:		FED FROM TX-3 AND TX-4. PROVIDE		LOCATION:		KIRK KEY SYSTEM			
MAIN BREAKER: MLO		CONN. 32.1 kVA											
10,000AIC		DEM. 32.1 kVA											
MOUNTING: SURFACE		DEM. 89.3 Amps											
CKT #	TRIP/POLE	NOTES	CIRCUIT DESCRIPTION	CONNECTED LOAD (VA)			CIRCUIT DESCRIPTION	NOTES	TRIP/POLE	CKT #			
1	15A/1		TEST POWER BUS B	240	1,440		HSP-3 PANEL M		15A/3	2			
3	20A/1		SPARE			-	1,440			4			
5	15A/1		WP-3 PANEL					750	1,440	6			
7	15A/2		SPARE		1,440					8			
9	-					-	1,440			10			
11	15A/1		OUTDOOR LIGHT CKT1					2,400	1,440	12			
13	20A/1		OUTDOOR LIGHT CKT2	2,400	1,440					14			
15	20A/1		SPARE			1,440	1,440			16			
17	60A/2		MB-CU-2					7,700	1,440	18			
19	-			7,700	1,440					20			
21	20A/2		MB-AHU-2			1,870	1,440			22			
23	-							1,870	1,440	24			
25	20A/1		SPARE							26			
27	20A/1		WP-1 120V							28			
29	20A/1		WP-5 120V							30			
31	-									32			
33	-									34			
35	-									36			
37	400A/3	K	TRANSFORMER	-	-					38			
39	-		TX-3							40			
41	-									42			
TOTAL CONNECTED LOADS:				10,340	5,760	3,310	5,760	12,720	5,760				

PANELBOARD SCHEDULE - LPB

LUMINAIRE SCHEDULE							
SYMBOL	DESCRIPTION	MOUNTING	LAMPS			MANUFACTURERS (OR EQUAL)	
			NO.	WATTAGE	TYPE	NAME	MODEL OR SERIES
	4 FOOT LED FIXTURE OPEN STRIP, STAINLESS STEEL HARDWARE	PENDANT	1	53W	LED	COLUMBIA	LCS4-40-ML-E-U
	4 FOOT LED FIXTURE OPEN STRIP, STAINLESS STEEL HARDWARE EMERGENCY BATTERY PACK	PENDANT	1	53W	LED	COLUMBIA	LCS4-40-ML-E-U-ELL14
	EXIT SIGN DIE-CAST ALUMINUM HOUSING, WHITE, NI-CAD BATTERY SHADE: DIRECTION OF SIGN	SURFACE	1	26W	LED	DUAL-LITE	SES-R-W-E
	WALL PACK, WET LOCATION, DIE-CAST ALUMINUM, BRONZE FINISH	SURFACE	1	44W	LED	MCGRRAW-EDISON	ISC-AF-800-LED-E1-T4W -BZ-7050-MA1255-XX

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BID SET

SAN ANTONIO WATER SYSTEM

MARK	DATE	DESCRIPTION	BY	TDG
1	08/31/18	PER ADDENDUM #4		

SAN ANTONIO WATER SYSTEM
CENTRAL WATER INTEGRATION PIPELINE
MALTSBERGER PS IMPROVEMENTS
MALTSBERGER PS
PANEL SCHEDULE

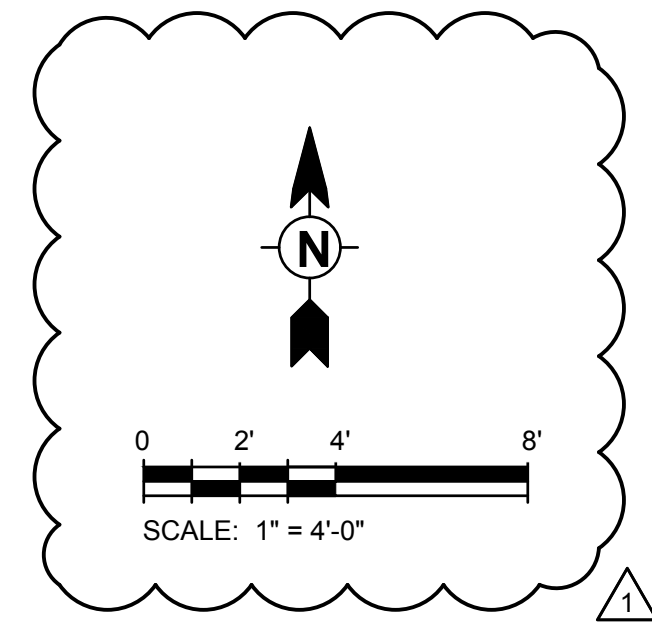
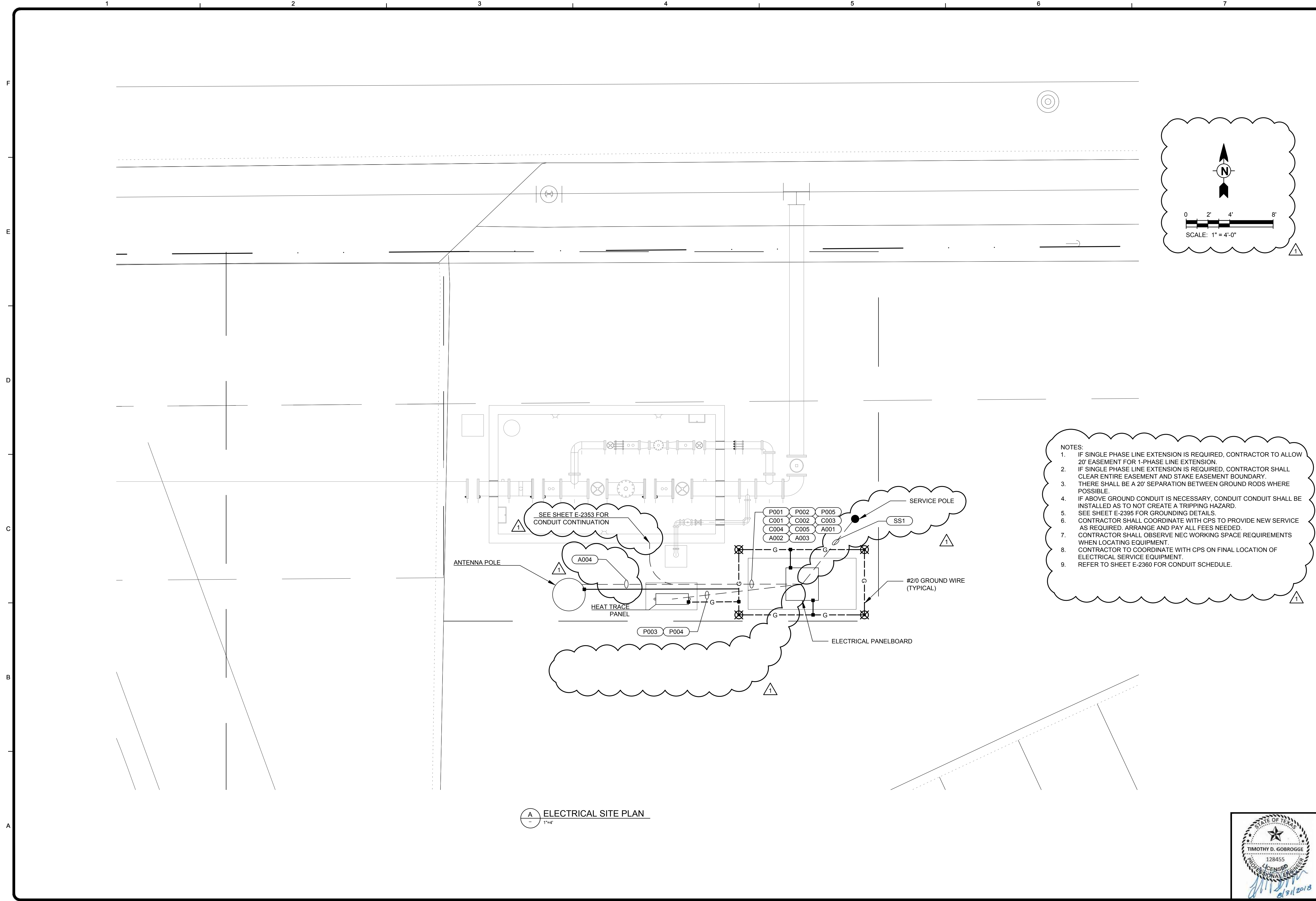


PROJ: 200-09308-18001
DESIN: TDG
DRWN: EDJ
CHKD: -

E-2338

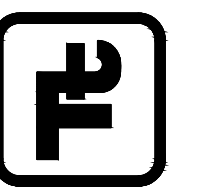
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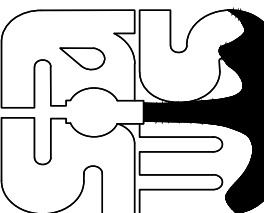
- NOTES:
- IF SINGLE PHASE LINE EXTENSION IS REQUIRED, CONTRACTOR TO ALLOW 20' EASEMENT FOR 1-PHASE LINE EXTENSION.
 - IF SINGLE PHASE LINE EXTENSION IS REQUIRED, CONTRACTOR SHALL CLEAR ENTIRE EASEMENT AND STAKE EASEMENT BOUNDARY.
 - THERE SHALL BE A 20' SEPARATION BETWEEN GROUND RODS WHERE POSSIBLE.
 - IF ABOVE GROUND CONDUIT IS NECESSARY, CONDUIT CONDUIT SHALL BE INSTALLED AS TO NOT CREATE A TRIPPING HAZARD.
 - SEE SHEET E-2395 FOR GROUNDING DETAILS.
 - CONTRACTOR SHALL COORDINATE WITH CPS TO PROVIDE NEW SERVICE AS REQUIRED. ARRANGE AND PAY ALL FEES NEEDED.
 - CONTRACTOR SHALL OBSERVE NEC WORKING SPACE REQUIREMENTS WHEN LOCATING EQUIPMENT.
 - CONTRACTOR TO COORDINATE WITH CPS ON FINAL LOCATION OF ELECTRICAL SERVICE EQUIPMENT.
 - REFER TO SHEET E-2360 FOR CONDUIT SCHEDULE.

A ELECTRICAL SITE PLAN
1"=4'



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BID SET




SAN ANTONIO WATER SYSTEM

MARK	DATE	DESCRIPTION	BY	KLW
1	08/28/18	PER ADDENDUM #4		

SAN ANTONIO WATER SYSTEM
CENTRAL WATER INTEGRATION PIPELINE
MALTSBERGER PS IMPROVEMENTS

**PRV II
ELECTRICAL SITE PLAN**

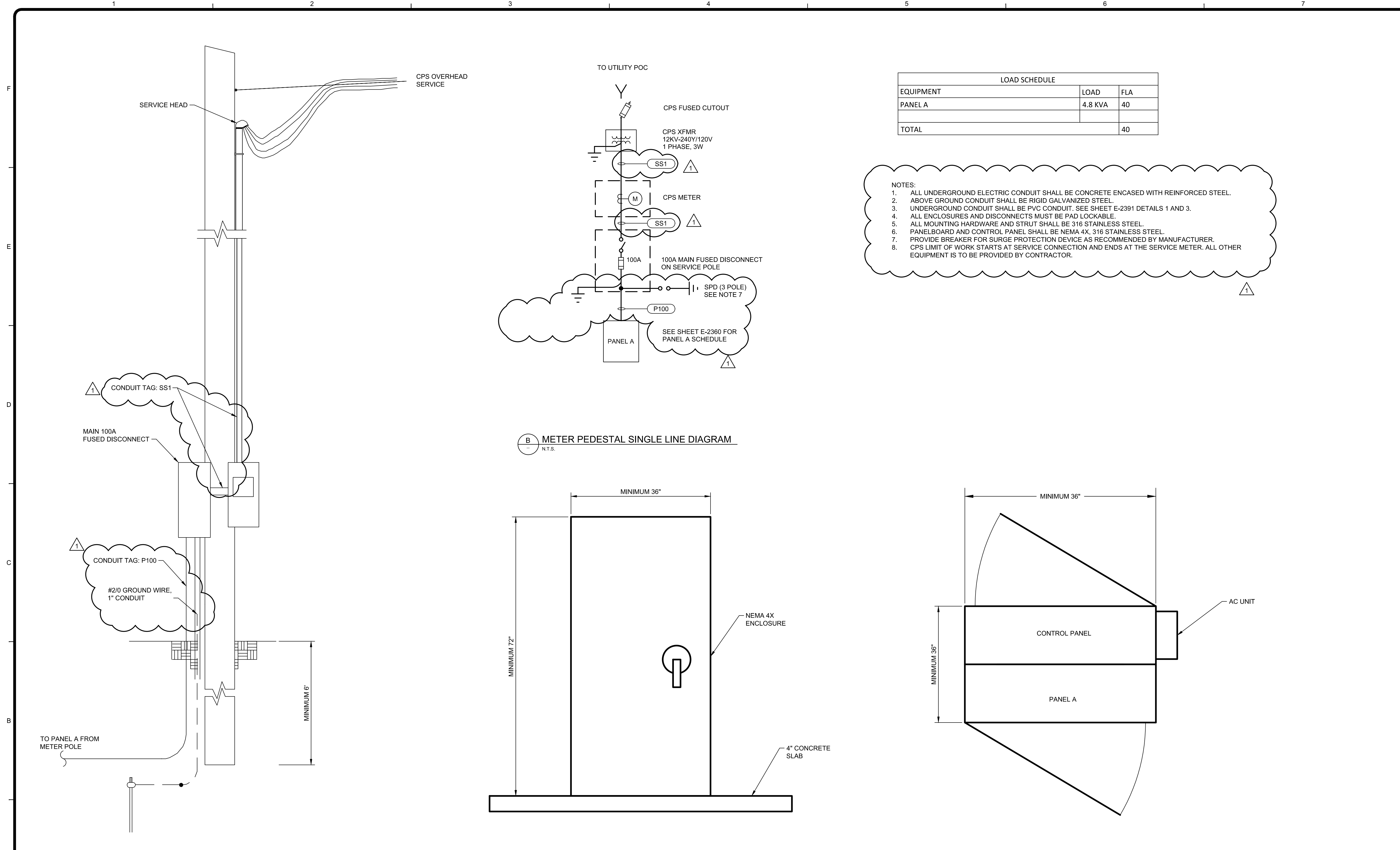
PROJ:	200-09308-18001
DESN:	KLW
DRWN:	KLW
CHKD:	TDG



E-2351

Bar measures 1 inch, otherwise drawing is not to scale

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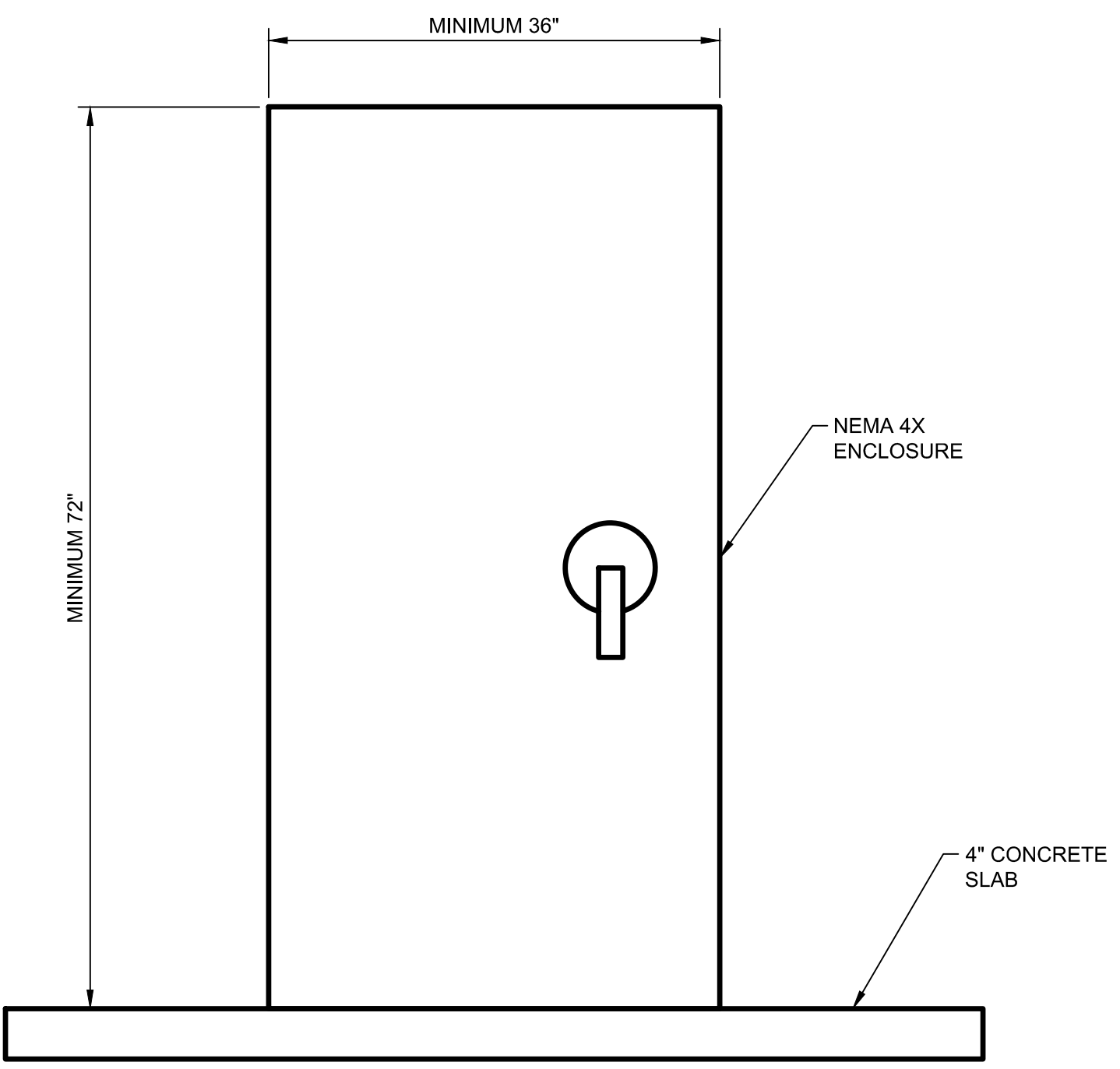


LOAD SCHEDULE		
EQUIPMENT	LOAD	FLA
PANEL A	4.8 KVA	40
TOTAL		40

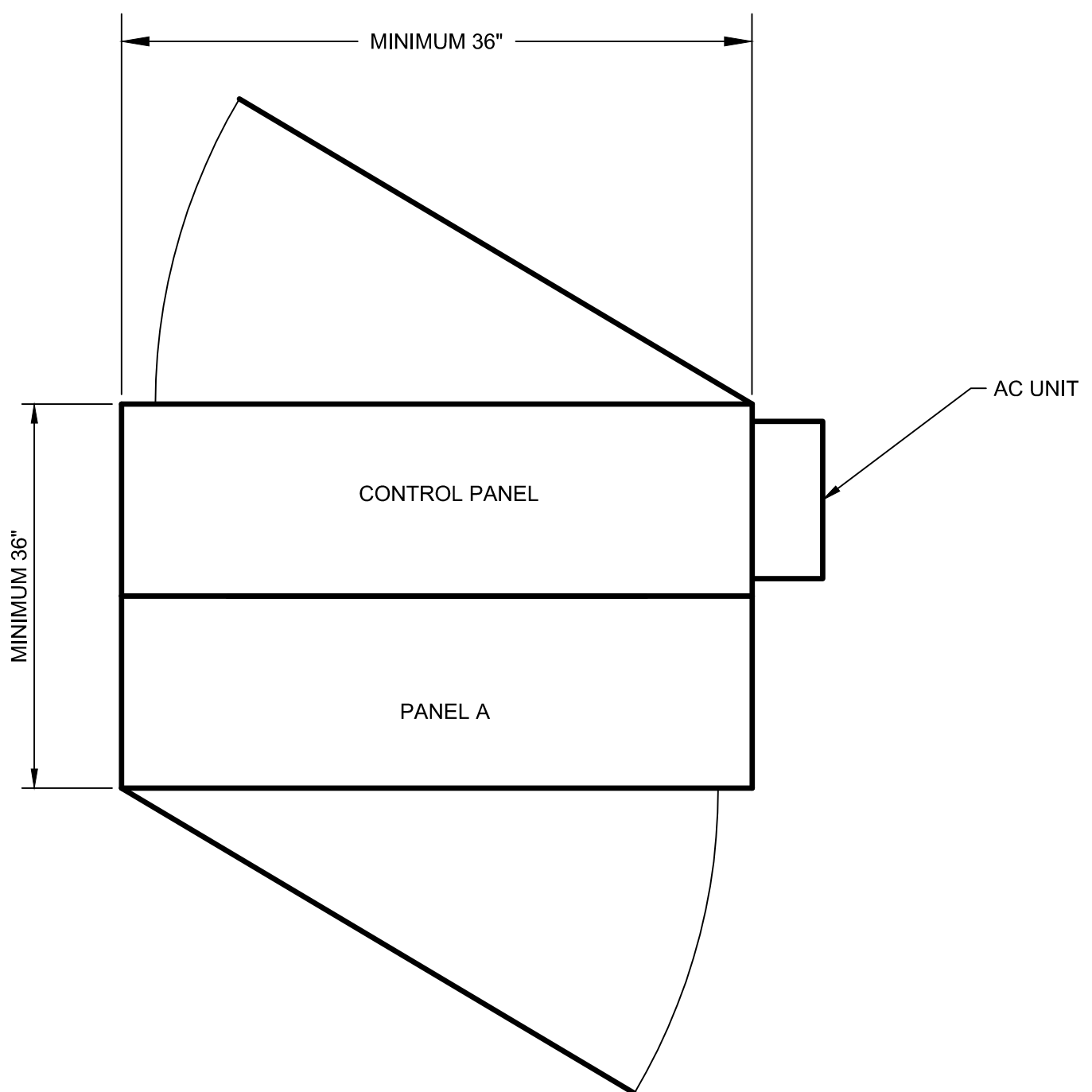
- NOTES:
- ALL UNDERGROUND ELECTRIC CONDUIT SHALL BE CONCRETE ENCASED WITH REINFORCED STEEL.
 - ABOVE GROUND CONDUIT SHALL BE RIGID GALVANIZED STEEL.
 - UNDERGROUND CONDUIT SHALL BE PVC CONDUIT. SEE SHEET E-2391 DETAILS 1 AND 3.
 - ALL ENCLOSURES AND DISCONNECTS MUST BE PAD LOCKABLE.
 - ALL MOUNTING HARDWARE AND STRUT SHALL BE 316 STAINLESS STEEL.
 - PANELBOARD AND CONTROL PANEL SHALL BE NEMA 4X, 316 STAINLESS STEEL.
 - PROVIDE BREAKER FOR SURGE PROTECTION DEVICE AS RECOMMENDED BY MANUFACTURER.
 - CPS LIMIT OF WORK STARTS AT SERVICE CONNECTION AND ENDS AT THE SERVICE METER. ALL OTHER EQUIPMENT IS TO BE PROVIDED BY CONTRACTOR.

A SERVICE POLE DETAIL
N.T.S.

B METER PEDESTAL SINGLE LINE DIAGRAM
N.T.S.



C POWER PEDESTAL ELEVATION
N.T.S.



D POWER PEDESTAL TOP VIEW
N.T.S.

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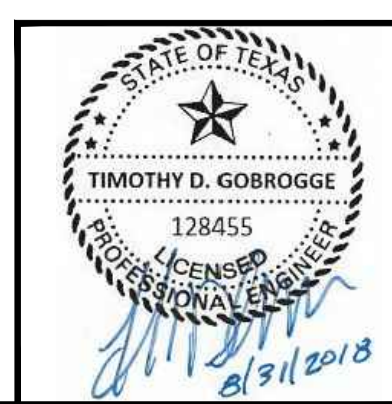
SAN ANTONIO WATER SYSTEM

MARK	DATE	DESCRIPTION	BY
1	08/28/18	PER ADDENDUM #4	KLW

SAN ANTONIO WATER SYSTEM
CENTRAL WATER INTEGRATION PIPELINE
MALTSBERGER PS IMPROVEMENTS
PRV II
SINGLE LINE DIAGRAM

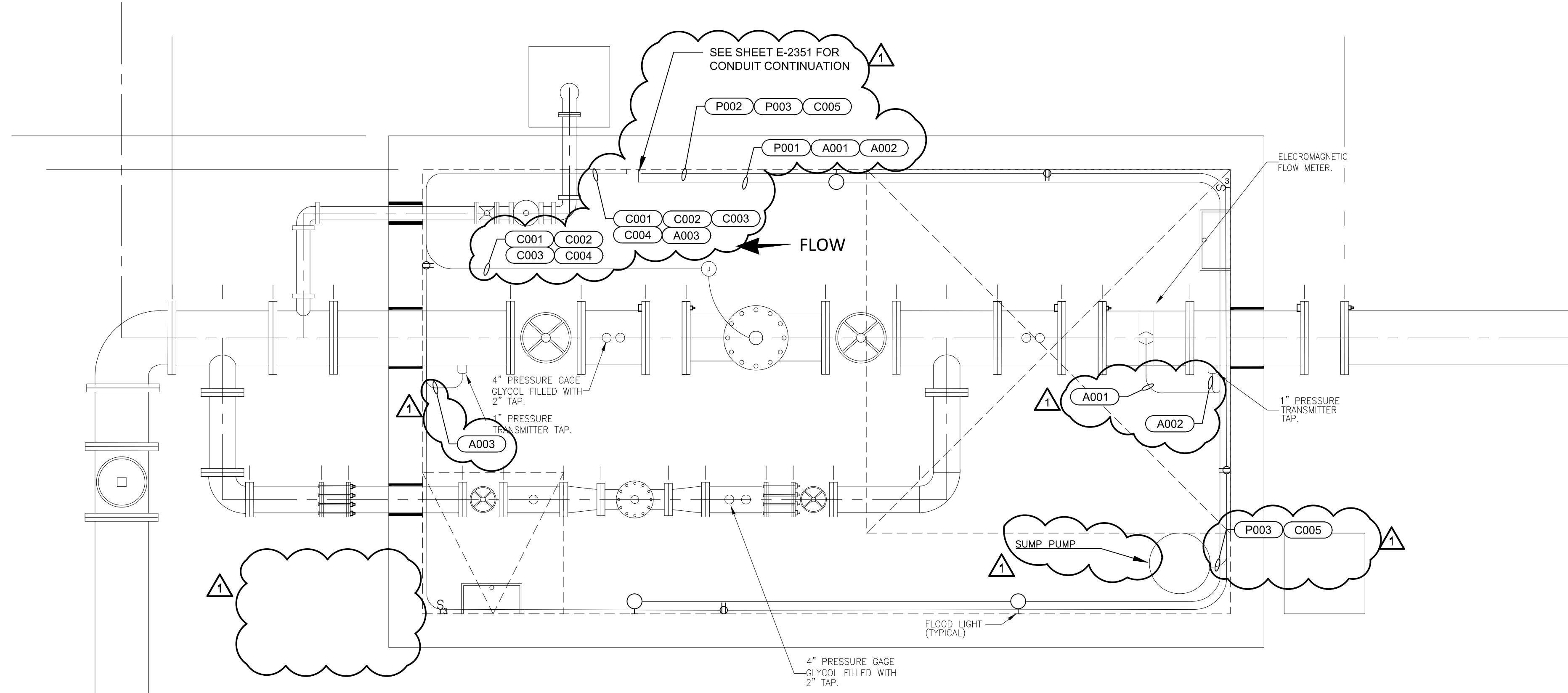
PROJ:	200-09308-18001
DESN:	KW
DRWN:	KW
CHKD:	MK

E-2352



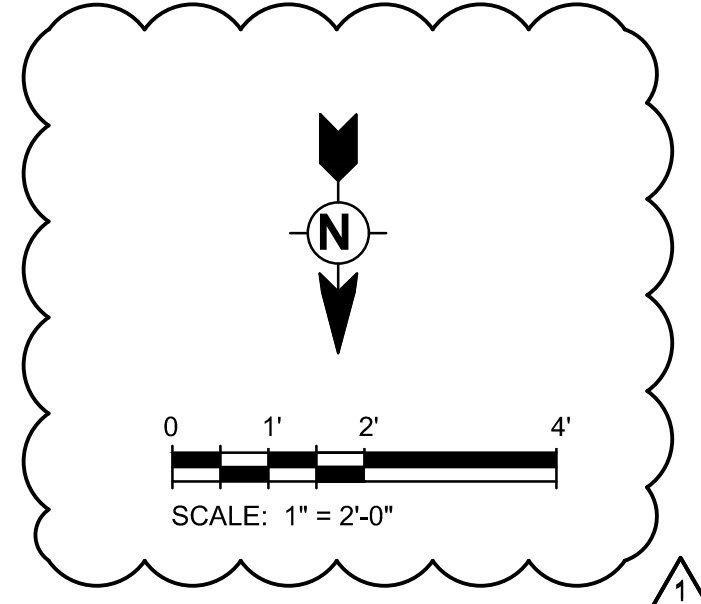
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F
E
D
C
B
A



NOTES:
 1. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR ALL EQUIPMENT TO BE INSTALLED.
 2. SEE LIGHTING FIXTURE SCHEDULE ON SHEET E-2360 FOR LIGHTING FIXTURE DESCRIPTION.
 3. SEE CONDUIT MOUNTING DETAIL IN SHEET E-2395

A PRV II VAULT PLAN
 1"=2"



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SAN ANTONIO WATER SYSTEM

MARK	DATE	DESCRIPTION	BY
1	08/28/18	PER ADDENDUM #4	KLW

SAN ANTONIO WATER SYSTEM
 CENTRAL WATER INTEGRATION PIPELINE
 MALTSBERGER PS IMPROVEMENTS
 PRV II
 ELECTRICAL VAULT
 POWER PLAN

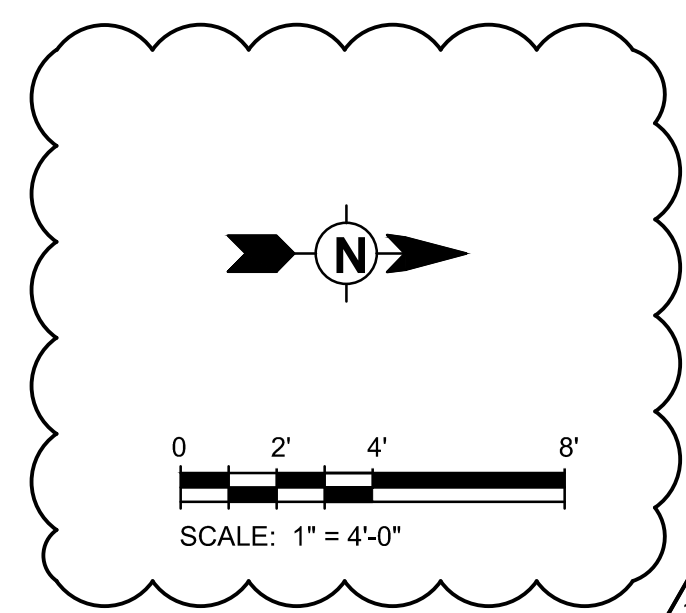
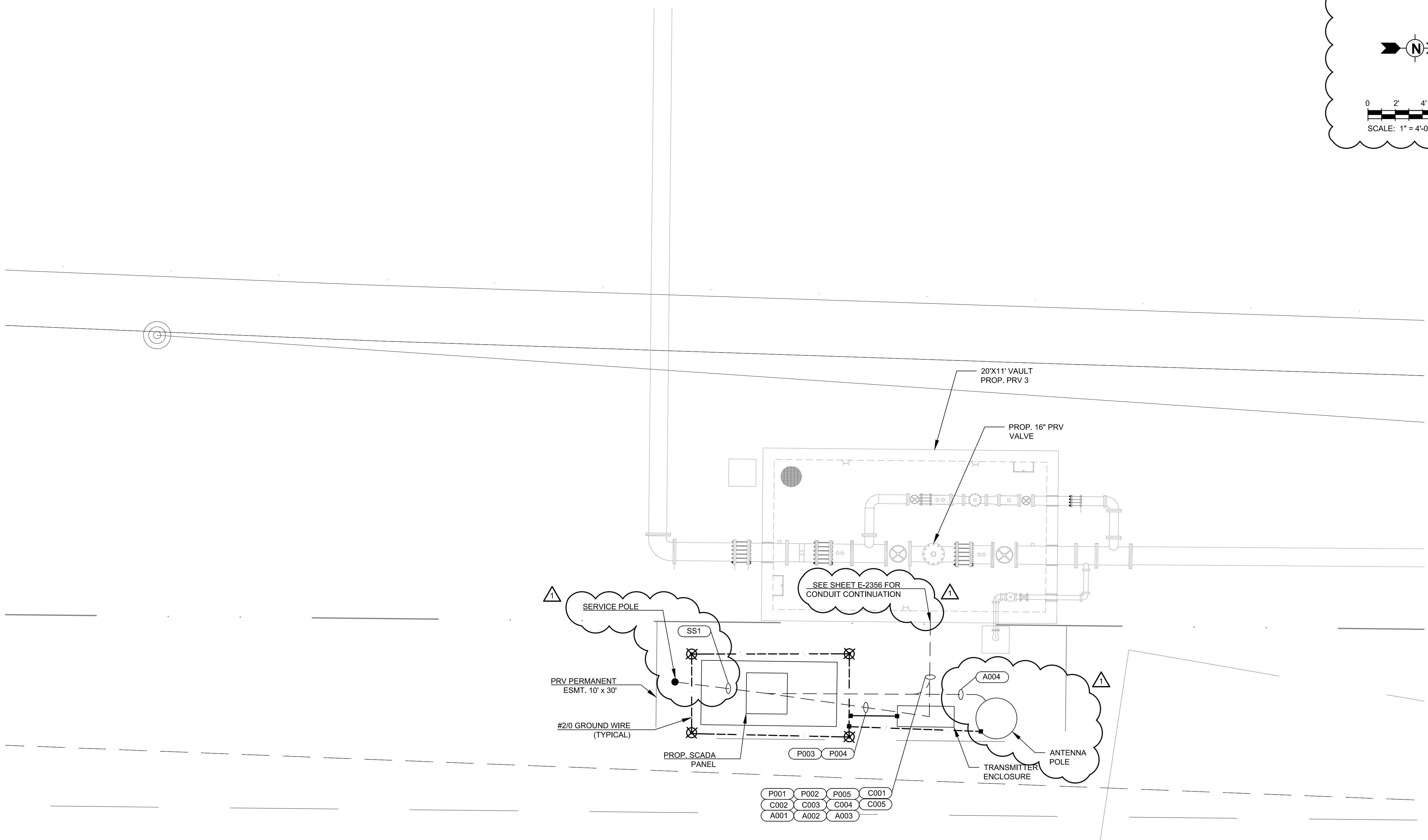
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DESN:	KLW
DRWN:	KLW
CHKD:	TDG



E-2353

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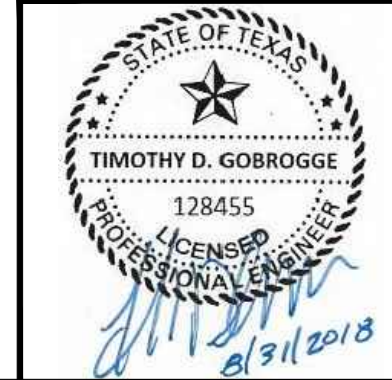
F
E
D
C
B
A



A ELECTRICAL SITE PLAN
SCALE: 1"=4'

P001	P002	P005	C001
C002	C003	C004	C005
A001	A002	A003	

- NOTES:**
- IF SINGLE PHASE LINE EXTENSION IS REQUIRED, CONTRACTOR TO ALLOW 20' EASEMENT FOR 1-PHASE LINE EXTENSION.
 - IF SINGLE PHASE LINE EXTENSION IS REQUIRED, CONTRACTOR SHALL CLEAR ENTIRE EASEMENT AND STAKE EASEMENT BOUNDARY.
 - THERE SHALL BE A 20' SEPARATION BETWEEN GROUND RODS WHERE POSSIBLE.
 - IF ABOVE GROUND CONDUIT IS NECESSARY, CONDUIT CONDUIT SHALL BE INSTALLED AS TO NOT CREATE A TRIPPING HAZARD.
 - SEE SHEET E-2395 FOR GROUNDING DETAILS.
 - CONTRACTOR SHALL COORDINATE WITH CPS TO PROVIDE NEW SERVICE AS REQUIRED. ARRANGE AND PAY ALL FEES NEEDED.
 - CONTRACTOR SHALL OBSERVE NEC WORKING SPACE REQUIREMENTS WHEN LOCATING EQUIPMENT.
 - CONTRACTOR TO COORDINATE WITH CPS ON FINAL LOCATION OF ELECTRICAL SERVICE EQUIPMENT.
 - REFER TO SHEET E-2360 FOR CONDUIT SCHEDULE.



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SAN ANTONIO WATER SYSTEM

MARK	DATE	DESCRIPTION	BY
1	08/28/18	PER ADDENDUM #4	KLW

SAN ANTONIO WATER SYSTEM
CENTRAL WATER INTEGRATION PIPELINE
MALTERBERGER PS IMPROVEMENTS
PRV III ELECTRICAL SITE PLAN

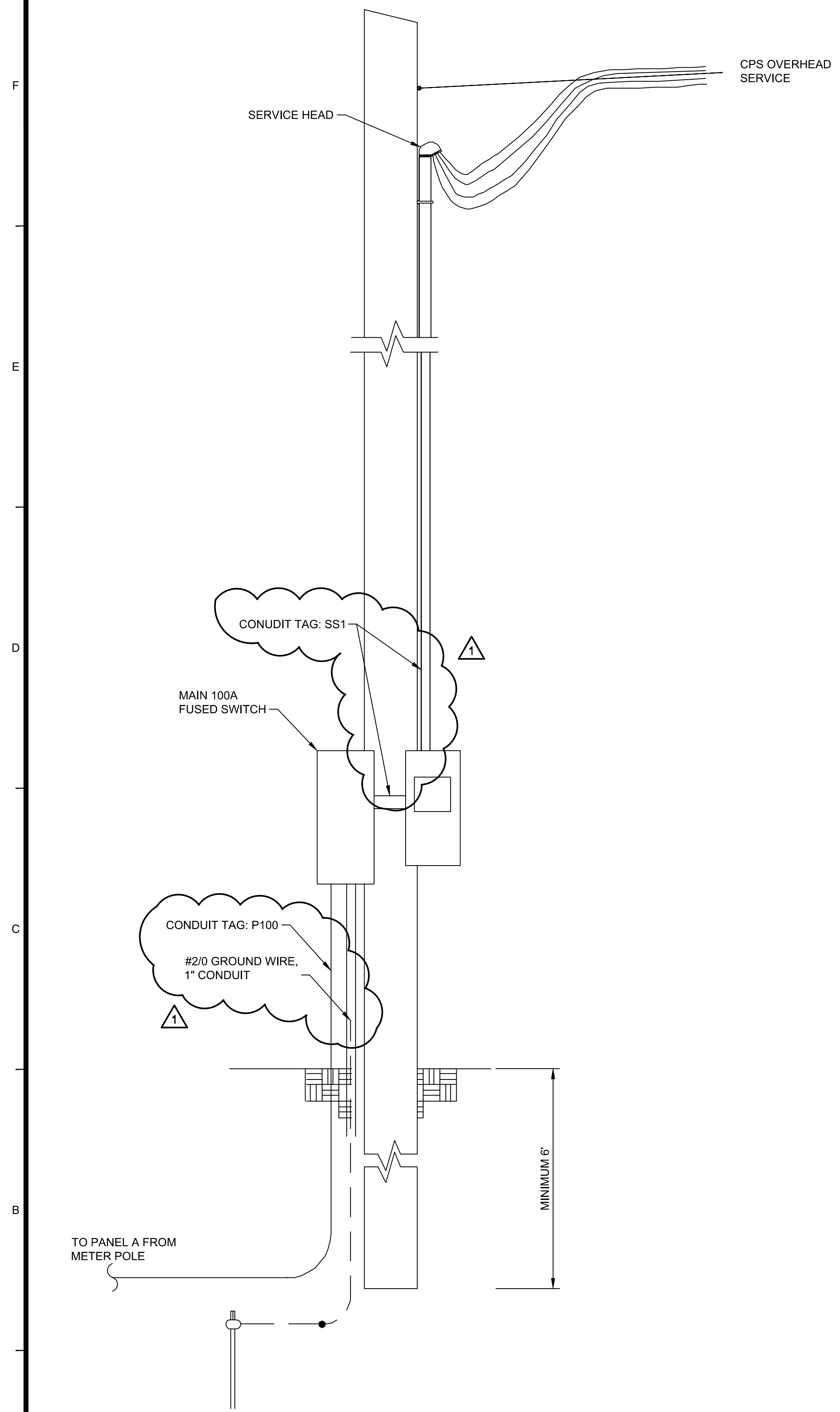
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DESN:	KLW
DRWN:	KLW
CHKD:	TDG

E-2354

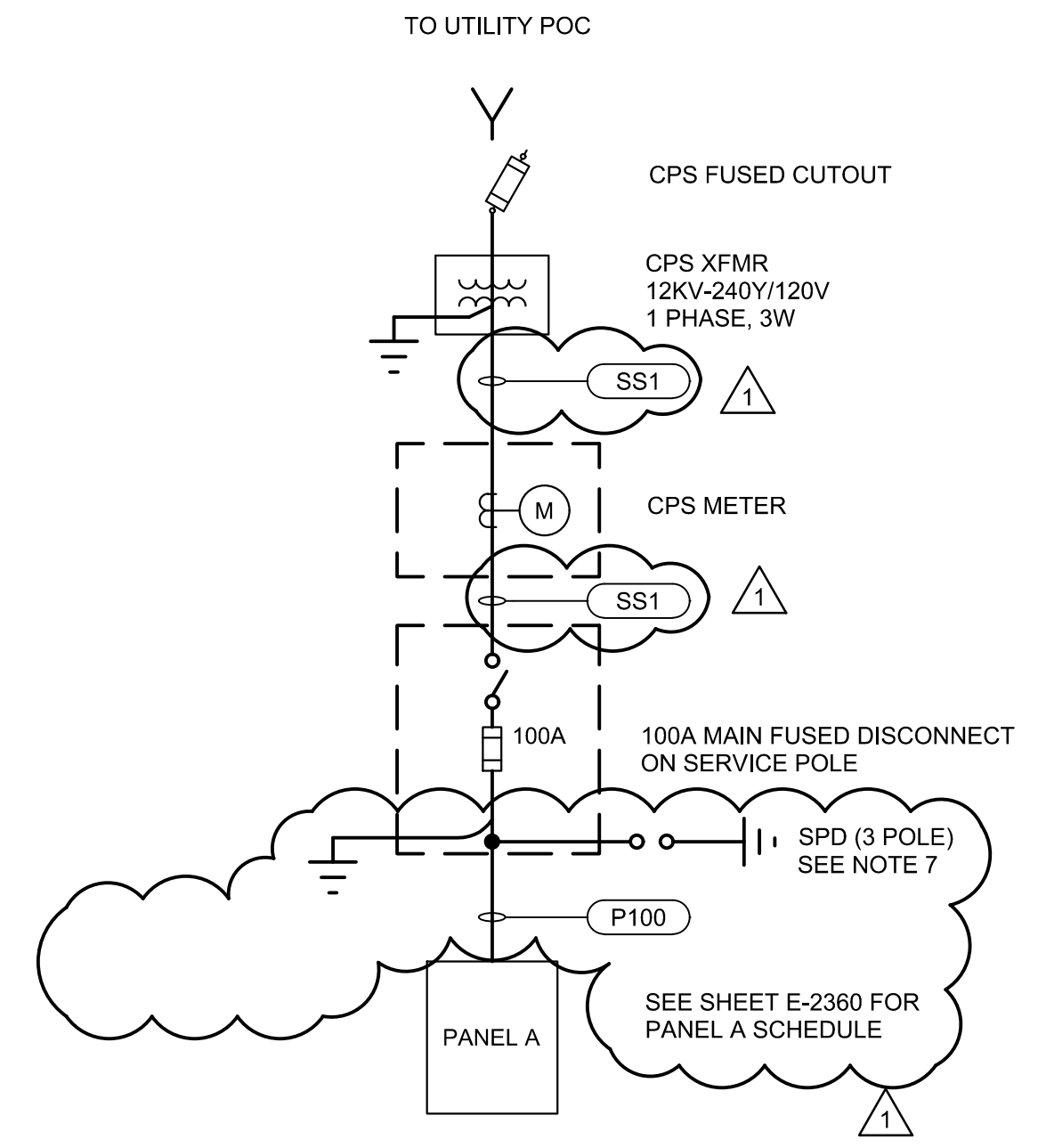
Bar measures 1 inch, otherwise drawing is not to scale

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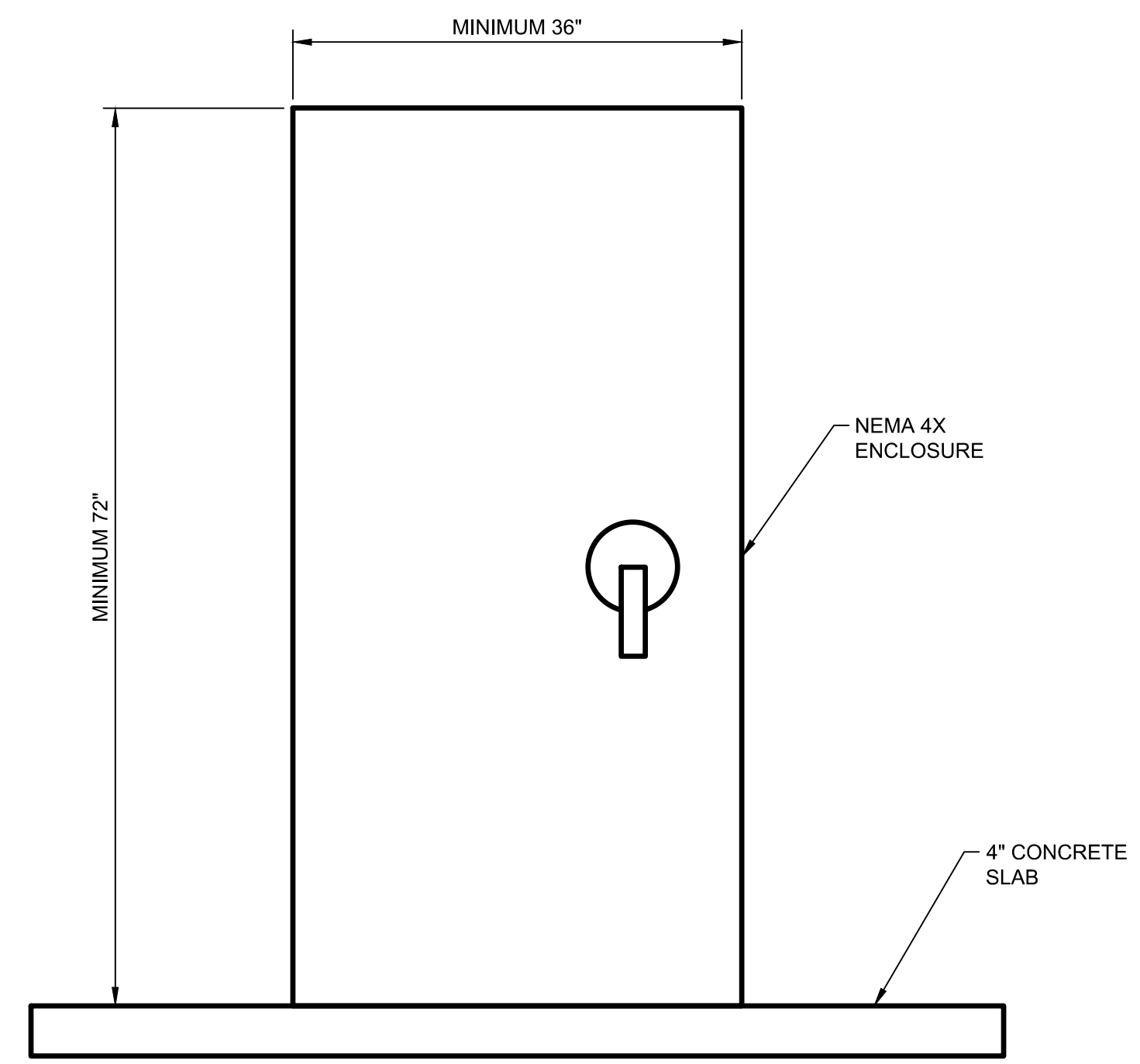
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A SERVICE POLE DETAIL
N.T.S.



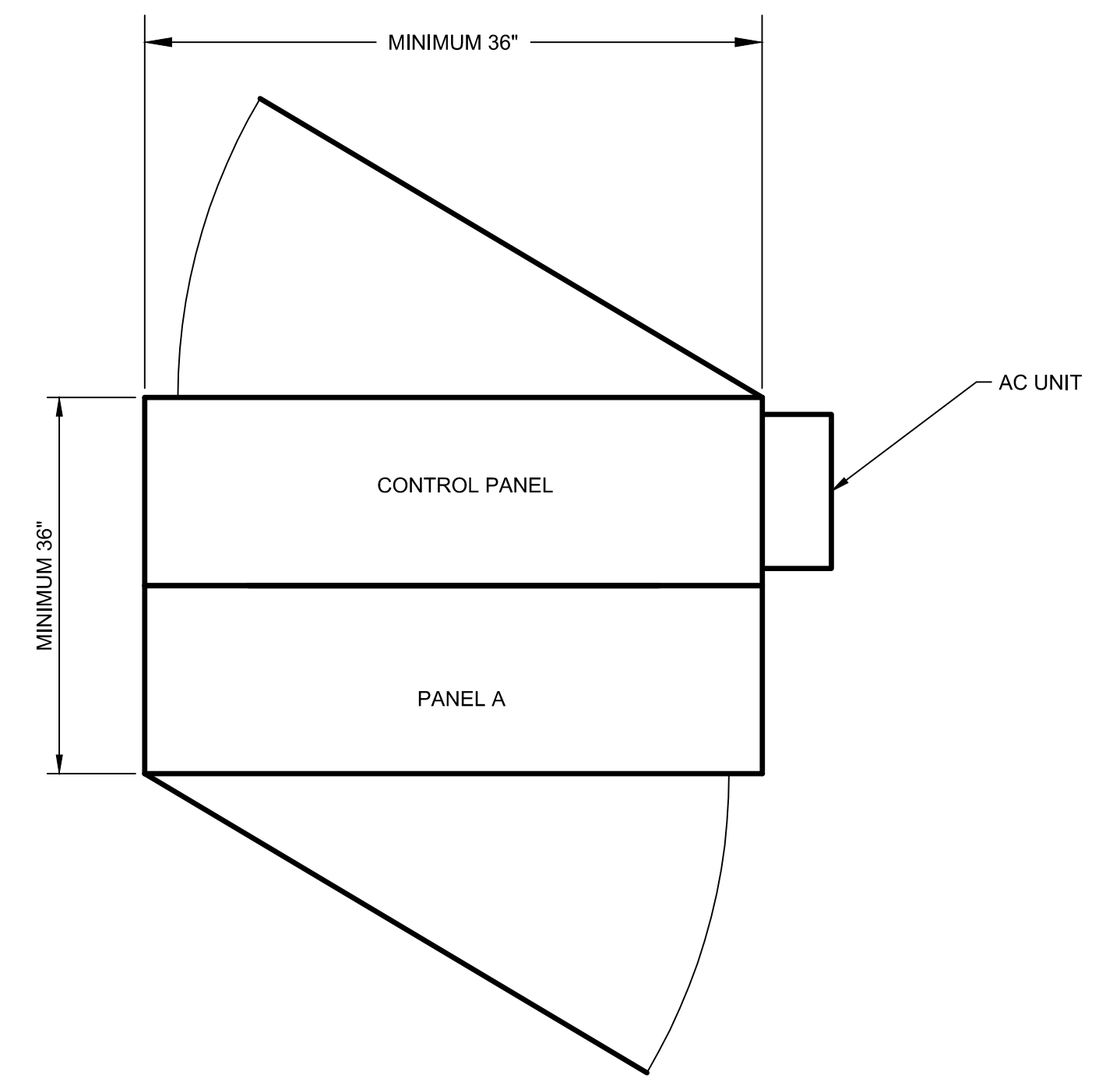
B METER PEDESTAL SINGLE LINE DIAGRAM
N.T.S.



C POWER PEDESTAL ELEVATION
N.T.S.

LOAD SCHEDULE		
EQUIPMENT	LOAD	FLA
PANEL A	4.8 KVA	40
TOTAL		40

- NOTES:**
1. ALL UNDERGROUND ELECTRIC CONDUIT SHALL BE CONCRETE ENCASED WITH REINFORCED STEEL.
 2. ABOVE GROUND CONDUIT SHALL BE RIGID GALVANIZED STEEL.
 3. UNDERGROUND CONDUIT SHALL BE PVC CONDUIT. SEE SHEET E-2391 DETAILS 1 AND 3.
 4. ALL ENCLOSURES AND DISCONNECTS MUST BE PAD LOCKABLE.
 5. ALL MOUNTING HARDWARE AND STRUT SHALL BE 316 STAINLESS STEEL.
 6. PANELBOARD AND CONTROL PANEL SHALL BE NEMA 4X, 316 STAINLESS STEEL.
 7. PROVIDE BREAKER FOR SURGE PROTECTION DEVICE AS RECOMMENDED BY MANUFACTURER.
 8. CPS LIMIT OF WORK STARTS AT SERVICE CONNECTION AND ENDS AT THE SERVICE METER. ALL OTHER EQUIPMENT IS TO BE PROVIDED BY CONTRACTOR.



D POWER PEDESTAL TOP VIEW
N.T.S.



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SAN ANTONIO WATER SYSTEM

MARK	DATE	DESCRIPTION	BY
1	08/28/18	PER ADDENDUM #4	KLW

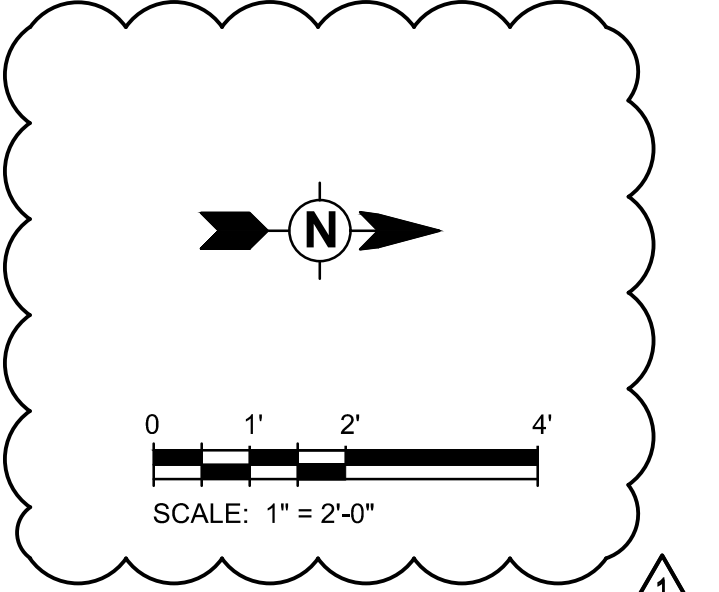
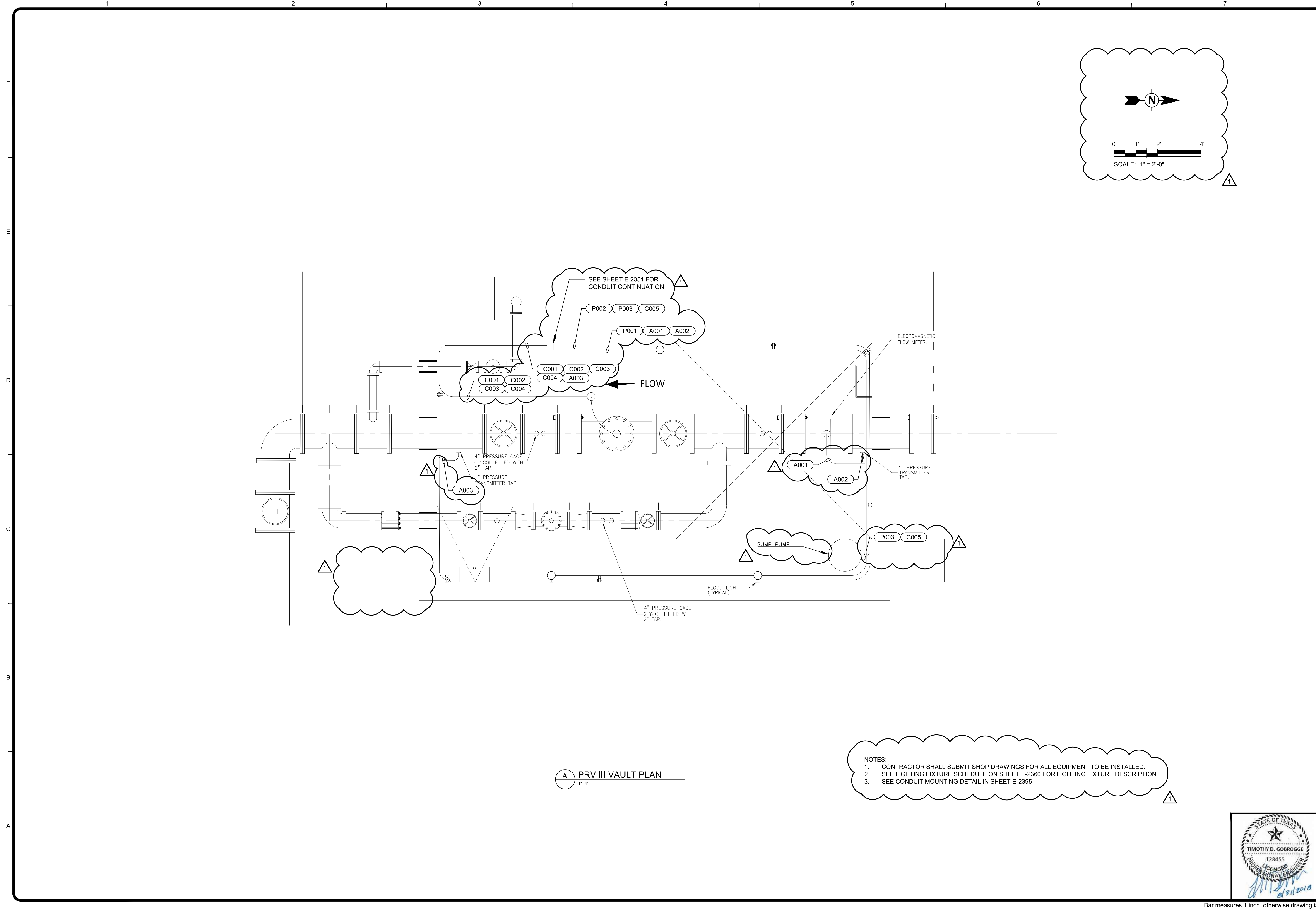
SAN ANTONIO WATER SYSTEM
CENTRAL WATER INTEGRATION PIPELINE
MALTSBERGER PS IMPROVEMENTS
PRV III
SINGLE LINE DIAGRAM

PROJ: 200-09308-18001
DESN: KLW
DRWN: KLW
CHKD: TDG

E-2355

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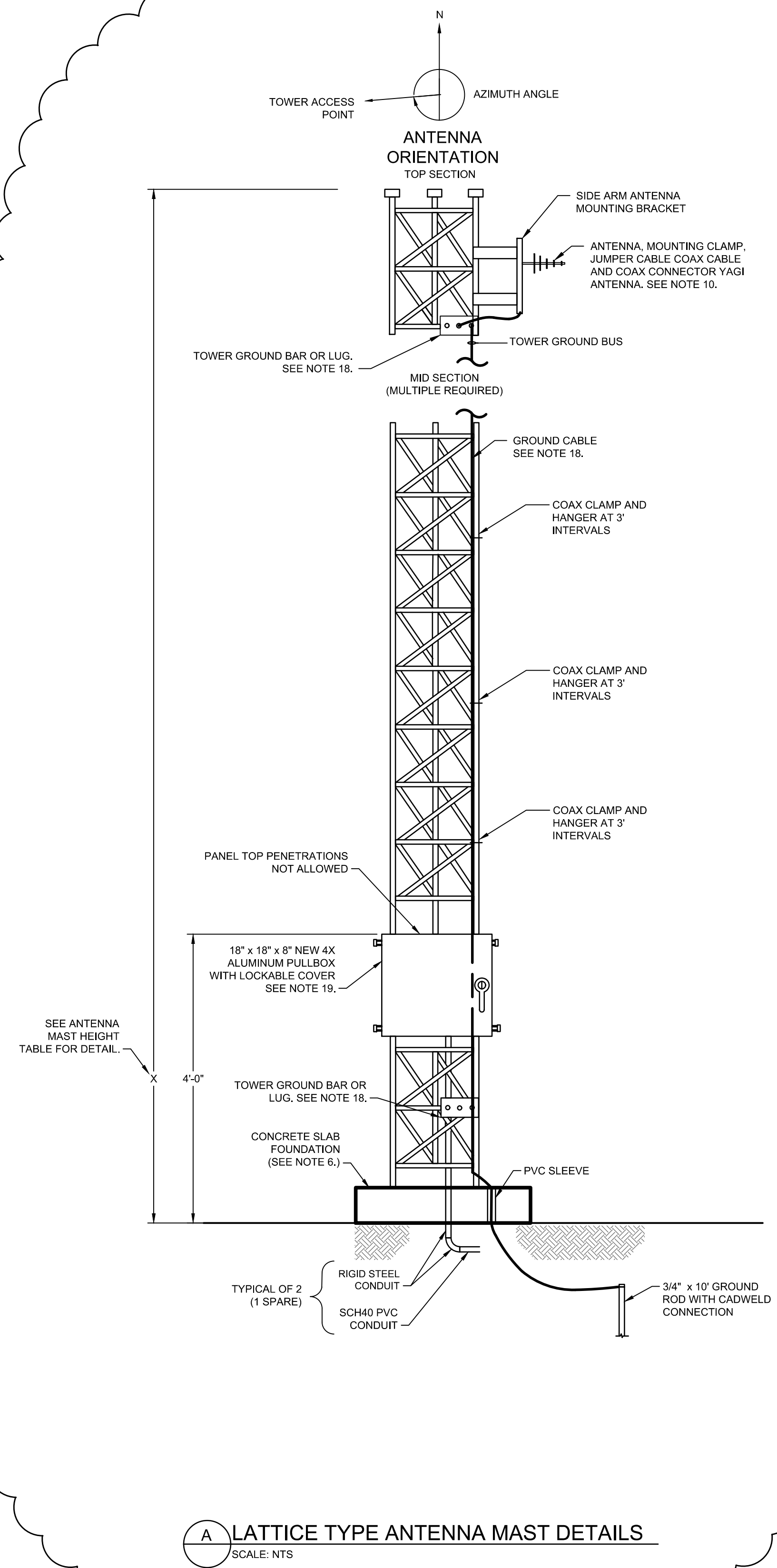
A PRV III VAULT PLAN
1"=4'

NOTES:
 1. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR ALL EQUIPMENT TO BE INSTALLED.
 2. SEE LIGHTING FIXTURE SCHEDULE ON SHEET E-2360 FOR LIGHTING FIXTURE DESCRIPTION.
 3. SEE CONDUIT MOUNTING DETAIL IN SHEET E-2395



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BID SET			
SAN ANTONIO WATER SYSTEM			
MARK	DATE	DESCRIPTION	BY
1	08/28/18	PER ADDENDUM #4	KLW
SAN ANTONIO WATER SYSTEM CENTRAL WATER INTEGRATION PIPELINE MALTSBERGER PS IMPROVEMENTS PRV III ELECTRICAL VAULT POWER PLAN			
PROJ:	200-09308-18001	DESN:	KLW
DRWN:	KLW	CHKD:	TDG
E-2356			

8/30/2018 3:32:42 PM - C:\PROJECTS\SAN ANTONIO\093038\200-093038-18001-C\CAD\SHEETFILES\MALTSBERGER PS & BASIN IMP/E - 2359 PRV ANTENNA MAST AND LIGHTING DETAILS.DWG - HAN, NICOLE



A LATTICE TYPE ANTENNA MAST DETAILS
 SCALE: NTS

NOTES:

1. TOWER SHALL BE ROHN SELF SUPPORTED TOWER MODEL 65G OR APPROVED EQUAL. HEIGHT SHALL BE AS SHOWN FOR EACH LOCATION.
2. AZIMUTH SHALL BE AS PROVIDED FOR TOWER ACCESS TO HILDEBRAND EST LOCATION.
3. CONTRACTOR SHALL PROVIDE ALL NECESSARY ACCESSORIES NEEDED TO MOUNT ANTENNA(E).
4. CONTRACTOR TO USE CABLE CLAMPS AND HANGERS BY ANDREW OF EQUAL SUITABLE FOR HANGING CAT5e OR HELIAX CABLE. HOSE CLAMPS AND WIRE TIES ARE NOT ALLOWED.
5. FOR ALL REQUIRED MATERIAL SPECIFICATIONS, EQUIPMENT INSTALLATION, NOTES AND TOLERANCES SEE MANUFACTURER DRAWINGS.
6. DESIGN OF MAST AND FOUNDATION TO BE PROVIDED BY CONTRACTOR. FOUNDATION AND MAST STRUCTURE SHALL BE DESIGNED BY A P.E. REGISTERED BY THE STATE OF TEXAS. CONTRACTOR SHALL PROVIDE SUBMITTAL FOR ANTENNA FOUNDATION FOR ENGINEER REVIEW. FOUNDATION AND MAST SHALL BE DESIGNED TO SUPPORT ALL SPECIFIED EQUIPMENT AS ARRANGED FOR THE PROVIDED AZIMUTHS.
7. MAST MUST CONFORM TO LATEST CITY OF SAN ANTONIO GUIDELINES.
8. AZIMUTHS IN ARE BASED ON THE CLOCKWISE ANGLE FROM TRUE NORTH AS SHOWN ABOVE.
9. ALL LATTICE MATERIALS WILL BE HOT-DIPPED GALVANIZED AS OUTLINED IN ASTM A-123.
10. YAGI ANTENNA IS SHOWN AS AN EXAMPLE ONLY AS APPLICABLE FOR MOST SITES EQUIPPED WITH NARROWBAND RADIOS.
11. TELECOMMUNICATIONS BONDING AND GROUNDING OF TOWER MUST COMPLY WITH ANSITIA/EIA-607-B AND TIA/EIA-222 LATEST EDITION.
12. CONTRACTOR TO SUPPLY ALL NECESSARY SAFETY CLIMBING EQUIPMENT THAT COMPLIES TO OSHA AND ANSI STANDARDS THAT INCLUDE BUT NOT LIMITED TO STEP BOLTS, CABLE SYSTEM, ARRESTORS & CARABINER CABLE GUIDES.
13. CONTRACTOR SHALL SUPPLY ALL ASSOCIATED EQUIPMENT FOR TOWERS PER SPECIFICATION 17515.
14. MAST AND FOUNDATION SHALL BE ENGINEERED TO WITHSTAND 110 MPH, 3 SECOND GUST. LATTICE TYPE MAST SHALL BE ENGINEERED FOR MAXIMUM 80' HEIGHT WITH ANTENNA MOUNTED AT TOP OF MAST.
15. REFER TO SAWS LATEST DESIGN GUIDELINES AS REQUIRED BY SAWS, FOR TOWER GROUNDING DETAIL, COMPLY WITH TOWER GROUNDING REQUIREMENTS PER TOWER MANUFACTURER.
16. CONTRACTOR TO FOLLOW SAWS GUIDELINES AND MANUFACTURERS GUIDELINES GROUND RADIOS.
17. ALL EQUIPMENT NOT SHOWN FOR CLARITY. CONTRACTOR SHALL INSTALL ALL EQUIPMENT PER RADIO MANUFACTURER INSTALLATION MANUAL.
18. TOWER GROUND BAR OR LUG. MADE OF SOLID COPPER. DO NOT DRILL TOWER STRUCTURE.
19. CAT5E CABLE SHALL BE ROUTED THROUGH PULLBOX AND UP TOWER USING CABLE CLAMPS. CABLE SHALL NOT BE ROUTED THROUGH TOP OF PULLBOX. TOP PENETRATIONS WILL NOT BE ACCEPTED BY THE INSPECTORS.

ANTENNA MAST HEIGHT

LOCATION	HEIGHT
PRV II	40'-0"
PRV III	30'-0"

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SAN ANTONIO WATER SYSTEM

MARK	DATE	DESCRIPTION	BY
1	08/28/18	PER ADDENDUM #4	KLW

SAN ANTONIO WATER SYSTEM
 CENTRAL WATER INTEGRATION PIPELINE
 MALTSBERGER PS IMPROVEMENTS
 PRV
 ANTENNA MAST DETAIL

PROJ:	200-09308-18001
DESN:	KLW
DRWN:	KLW
CHKD:	TDG

E-2359



