SAN ANTONIO WATER SYSTEM
NACO PUMP STATION IMPROVEMENTS PROJECT
SAWS PROJECT NO. 12-6003
SOLICITATION NO. B-13-021-DD
ADDENDUM NO. 2

December 20, 2013

This addendum, applicable to work designated above, is an amendment to the proposal and specification documents and as such shall be a part of and included in the Contract. Acknowledge receipt of this addendum by entering the addendum number and issue date in the spaces provided on all submitted copies of the proposal.

1.0 Addenda Purpose

The purpose of this addendum is to issue a revision to the Contract Documents, plans and specifications for the Naco Pump Station Improvements Project (SAWS Job No. 12-6003).

2.0 Mandatory Pre-Proposal and Site Visit- Firms in Attendance

Invitation for Competitive Sealed Proposals – Proposals will not be accepted from any company not represented at the mandatory pre-proposal meeting and site visit held on December 19, 2013 at 10:00 a.m. The following list is a record of represented firms:

Firm Name

- Archer Western
- Holloman Utilities
- Layne Heavy Civil
- MGC Contractors
- Peerless Equipment
- CSA Construction

Firm Name

- Alterman Electric
- MWH Constructors
- Pepper Lawson
- Oscar Renda Contracting
- DN Tanks

3.0 Modifications to Part II – TECHNICAL SPECIFICATIONS

A. SECTION 02920 SEEDING – Article 3.03(A). DELETE and REPLACE with the following:

- "A. Inspection:
  1. Seeded areas will be accepted at final inspection if:
     a. Seeded areas are properly established as identified in the Plans.
     b. Turf/grass is free of dead spots and without weeds."

B. SECTION 11211 HORIZONTAL SPLIT-CASE CENTRIFUGAL PUMPS – Article 1.09(A). DELETE and REPLACE with the following:

- "The Contractor shall guarantee the structure against defective materials or workmanship for a period of two years from the date of acceptance by the Owner, as defined in 3.01(C)."

C. SECTION 11211 HORIZONTAL SPLIT-CASE CENTRIFUGAL PUMPS – Article 2.03(A). DELETE the "Impeller Wear Ring" row of boxes and REPLACE with the following:

Impeller Wearing Ring	AISI Type 316 stainless steel or ASTM B148-958 nickel-aluminum-bronze	Match impeller material

D. SECTION 11211 – APPENDIX A. LABEL the pump and system curve provided at the end of this specification as Appendix A.

E. Section 11242 - Paragraph 1.07.C.2 - DELETE "120V, 1 phase, 60 hz" and REPLACE with the "480V, 3 phase, 60 hz".

F. Section 11242 - Paragraph 2.03.C, last sentence – DELETE "NEMA 4" and REPLACE with "NEMA 4X".

G. Section 11242 - Paragraph 2.03.H.6 - DELETE "PCS" and REPLACE with the "SCADA SYSTEM".

H. Section 11242 - DELETE "existing plant PCS system" and REPLACE with the "proposed plant SCADA system" in the following paragraphs:

- Paragraph 2.03.H.3.b.1), and 2)
- Paragraph 2.03.H.4.b.1)
- Paragraph 2.03.H.6.a
- Paragraph 2.03.H.7
- Paragraph 2.03.H.7.a

I. SECTION 11300 ACCESS HATCHES – Article 1.01(A). DELETE and REPLACE with the following:

- "Furnish all labor, materials, equipment and incidentals required to completely install and put into operation, access hatches for the proposed ground storage tank and electrical building sump pump vault as specified herein and shown on the plans."

J. SECTION 11300 ACCESS HATCHES – Article 1.03(A). DELETE and REPLACE with the following:

- "Contractor shall submit manufacturer's technical information for all proposed access hatches."

L. Section 11366 - DELETE "existing plant PCS system" and REPLACE with the "proposed plant SCADA system" in the following paragraphs:

- Paragraph 1.02.D
- Paragraph 1.02.E
- Paragraph 1.03.H.2.a
- Paragraph 1.03.I.4.a.2
- Paragraph 1.03.J.1
- Paragraph 1.05.F.1
- Paragraph 2.12.A.4
- Paragraph 2.12.A.5.b
- Paragraph 2.12.C.5.a
- Paragraph 2.12.C.9
- Paragraph 2.12.D.6.a
- Paragraph 2.12.E.6.a
- Paragraph 2.12.F.6.a

M. Section 11366 - DELETE "PCS" and REPLACE with the "SCADA system" in the following paragraphs:

- Paragraph 1.04.J.4.d.1), 2), 3), and 4)
- Paragraph 2.12.A.5.b
- Paragraph 2.12.D.6
- Paragraph 2.12.E.6
- Paragraph 2.12.F.6
- Paragraph 2.13.A.1.a
- Paragraph 2.16.B.2

N. Section 11366 - Paragraph 1.02.D - DELETE the last sentence in its entirety and REPLACE with the following:

- "The OSG process control system specified herein shall perform the following generalized functions:"

O. Section 11366 - Paragraph 1.03.K.4.o - DELETE “PCSS” and REPLACE with “OWNER”.

P. Section 11366 - Paragraph 1.03.K.5.i - ADD the word “OWNER” after “ENGINEER”.

Q. Section 11366 - Paragraph 1.03.K.7.a - ADD the words “and OWNER” after “ENGINEER”.

R. Section 11366 - Paragraph 2.08 ADD the following:

- “G. The rectifier shall meet IEEE 519 standards for harmonics. Documentation that indicates this shall be provided with the rectifier submittal. Contractor shall provide harmonic mitigation equipment if submitted rectifier does not meet IEEE 519 standards for harmonic limits.”

S. Section 11366 - Paragraph 2.12.A.2 - DELETE “NEMA 12” and REPLACE with “NEMA 4X”.

T. Section 11366 - Paragraph 2.12.A.5.a - DELETE the paragraph in its entirety and REPLACE with the following:

- “a. SCADA Interface: The OSG control system shall interface with the proposed plant SCADA system via Ethernet communications over a Cat6 network. The OSG system shall receive signals from the plant SCADA system (over Ethernet) and shall make available process data for collection by the plant SCADA system. The specific data shall be as defined herein and finalized during the Data Transfer Coordination Meeting.”

U. Section 11366 - Paragraph 2.12.A.3 - DELETE the paragraph in its entirety and renumber as required.

V. Section 11366 - Paragraph 2.13.A -DELETE the paragraph and REPLACE with the following:

- “A. General: The OSG Manufacturer shall furnish all equipment and software required to communicate with the proposed plant SCADA System over the plant IEEE 802.3 compliant Ethernet Local Area Network (LAN). The OSG Manufacturer shall furnish all necessary cables, face plates, connectors, modems, transceivers, repeaters, modules, splice kits, switches, etc. required.”

W. Section 11366 - Paragraph 2.13.A.1.b - DELETE the paragraph in its entirety.

X. Section 11366 - Paragraph 2.15.D.5 - DELETE “MTW” and REPLACE with “NEMA 4X”.

Y. Section 11366 - Paragraph 2.15.N - DELETE “NEMA 12” and REPLACE with “THHN/THWN”.

Z. Section 11366 - Paragraph 2.15.N.4 - DELETE “barriers rated for 300 volts” and REPLACE with “barriers rated for 600 volts”.

AA. Section 11366 - Paragraph 2.12.O - DELETE the paragraph in its entirety.

BB. Section 11366 - Paragraph 3.01.B -DELETE the paragraph and REPLACE with the following:

- “B. The proposed Plant SCADA system will access the OSG PLC via a category 6 copper cable using ModBus TCP/IP protocol. Communications will include:”

CC. Section 11366 - Paragraph 3.05.C.2.f - DELETE “existing SCADA” and REPLACE with “proposed SCADA”.

DD. SECTION 13205 PRECAST, PRESTRESSED CONCRETE TANK WITH STEEL DIAPHRAGM – Article 1.04(D). DELETE and REPLACE with the following:

- “Unit Responsibility and Coordination: The Contractor shall cause all equipment specified under this section to be furnished by the tank contractor (and their subcontractors) who shall be responsible for the adequacy and compatibility of all tank components, including the subgrade and underdrain system – reference 2.01(F).”

EE. Section 13218 - Paragraph 1.03.A.3 -DELETE the paragraph and REPLACE with the following:

- “3. Locations and orientation of molded in fitting (IMFO®), openings, fittings, accessories, restraints and supports and attachments.”

FF. Section 13218 - Paragraph 1.03.A.11 -DELETE the paragraph and REPLACE with the following:

- “11. Statement that required dome fittings are vapor/fume tight and the storage tanks have a maximum working pressure of 6 inches water column above the top of the tank.”

GG. Section 13218 - Paragraph 1.03.A -ADD the following:

14. Details of inlet and molded outlet fitting (IMFO®), manways, flexible connections, and vents.

15. Manufacturer’s warranty

16. Manufacturer's unloading procedure (see Poly Processing Company Installation Manual)

17. Manufacturer's installation instructions (see Poly Processing Company Installation Manual)

18. Supporting information of Quality Management System

19. Supporting documentation of Manufacturer's certification to NSF/ANSI Standard 61 – Drinking Water System Components for water treatment chemicals. (Remove if not required)

20. Manufacturer's Qualifications: Submit to engineer a list of 5 installations in the same service as proof of manufacturer's qualifications.

21. Electrical heat tracing and foam insulation data sheets, as required.

22. Factory Test Report
    a. Material, specific gravity rating at 600 psi @ 100 degrees F. design hoop stress.
    b. Wall thickness verification.
    c. Fitting placement verification including molded in outlet (IMFO®)
    d. Visual inspection
    e. Impact test
    f. Gel test
    g. Hydrostatic test

HH. Section 13218 - Paragraph 2.02.A.1 – DELETE the words "sodium hypochlorite" from the second sentence.

II. Section 13218 - Paragraph 2.02.B.1 – DELETE the last sentence in its entirety.

JJ. Section 13218 - Paragraph 2.03.A.1.a.3 – DELETE "16-ft -7-in" and REPLACE with "16-ft-9-in".

KK. Section 13218 - Paragraph 2.03.A.1.i.2 – DELETE "Alloy C-276" and REPLACE with "Viton GF (cured with Teflon instead of lead to meet NSF/ANSI 61".

LL. Section 13218 - Paragraph 2.03.E – DELETE the value listed for Tensile Strength / ASTM D638 and REPLACE with "2,800". DELETE the value listed for Elongation at Break 2-in/min./ASTM D638 and REPLACE with "700". DELETE the value listed for Flexural Modulus/ASTM D790 and REPLACE with "87,000".

MM. Section 13218 - Paragraph 2.03.G – DELETE "+/- 1 degree radial" from the second sentence and REPLACE with "+/-2 degree radial".

NN. Section 13218 - Paragraph 2.03.J – DELETE the Paragraph in its entirety and REPLACE with the following:

- "J. Galvanized steel clips, blocks and edge softeners (with a chemically compatible coating for the sodium hypochlorite and fluosilicic acid systems) with Type 316 SST cables and accessories shall be provided to securely anchor the tanks to the concrete tank pad. An outdoor restraint system rated for 90 mph wind rating shall be provided. Type 316 SST anchors sized per tank manufacturers recommendations shall be provided for tank restraint."

OO. Section 13218 - Paragraph 2.04.A.1 – DELETE the Paragraph and REPLACE with the following:

- "1. Nozzles sized as follows:

a. Two 2-in flanged sight tube connections (side mounted BOSS Type w/flange adapter)
b. One 2-in flanged fill (top mounted Bulkhead Fitting w/flange adapter)
c. One 43-in flanged overflow (side mounted BOSS Type w/flange adapter).
d. One 4-in discharge to metering pumps (integrally molded flanged outlet (IMFO®))
e. One 4-in flanged level sensor (top mounted self-aligning fitting w/flange adapter)
f. One 6-in vapor vent on tanks (top mounted U-vent w/screen)
g. One 24-in Fume Tight Manway (top)
h. One 2-in Flanged spare on tank (top mounted Bulkhead Fitting w/flange adapter)."

PP. Section 13218 - Paragraph 2.04.B.1 – DELETE the Paragraph and REPLACE with the following:

- "1. Nozzles sized as follows:

a. Two 2-in flanged sight tube connections (side mounted BOSS Type w/flange adapter)
b. One 2-in flanged fill (top mounted Bulkhead Fitting w/flange adapter)
c. One 3-in flanged overflow (side mounted BOSS Type w/flange adapter)
d. One 2-in flanged discharge to metering pumps (side mounted BOSS Type w/flange adapter)
e. One 4-in flanged level sensor (top mounted self-aligning fitting w/flange adapter)
f. One 4-in vent (top mounted U-vent w/screen)
g. One 3-in flanged drain (side mounted near bottom BOSS Type w/flange adapter and siphon leg)
h. One 24-in Fume Tight Manway (top)

QQ. Section 13218 - Paragraph 2.04.C.1 – ADD the word “flanges” after 150 lb ANSI in the second sentence. DELETE the words “2-in diameter” in the fourth sentence.

RR. Section 13218 - Paragraph 2.04.C – ADD the following:

- “2. Integrally Molded Flanged Outlet Fittings (IMFO®). These outlets must be an integral part of the tank, molded from the same material as the tank and provide complete drainage of liquid through the sidewall of the tank.

  3. Bolted flange fittings shall be constructed of one 150 lb. flange with ANSI bolt pattern, one flange gasket and stud bolts with gaskets. Stud bolts to have chemical resistant polyethylene injection molded heads and gaskets to provide a sealing surface between the bolt head and the interior tank wall. Stud bolt heads are to be color coded for visual ease of identifying the bolt material by onsite operators. Green-316 Stainless Steel, Black- Titanium, Red- Alloy C-276, Blue-Monel. All materials shall be compatible with chemical service and as indicated in the fitting schedule above. For NSF/ANSI 61 certification, EPDM or Viton GF gaskets shall be supplied.

  4. For sodium hypochlorite and sulfuric acid storage, Bolted One-Piece Sure Seal (B.O.S.S.), double flange fittings constructed of virgin polyethylene shall be supplied. Bolts will be welded to a common backing ring and encapsulated with polyethylene preventing fluid contact with the metal material. Flange will have one full face gasket to provide a sealing surface against inside tank wall. All materials shall be compatible with chemical service and as indicated in the fitting schedule above. For NSF/ANSI 61 certification, EPDM or Viton GF gaskets shall be supplied.

  5. Down Pipes and Fill Pipes: Down pipes and fill pipes shall be supported at 6-ft max intervals. Down pipes and fill pipes shall be Schedule 80 PVC or material compatible with the chemical stored.”

SS. Section 13218 - Paragraph 2.04.G.1 – DELETE the sentence “Systems shall be available in 30, 60 or 100 degrees F.” and REPLACE with “The system shall be capable of maintaining a tank solution temperature 30 degrees F above the ambient temperature”.

TT. Section 13218 - Paragraph 2.04 – ADD the following after Paragraph F and renumber/letter the remaining paragraphs in 2.04 as required:

- “G. Magnetic Level Indicator: The magnetic level indicator shall be assembled to the tank and shall consist of a PVC float, high visibility flag style indicator and scale in engineering units of feet, and ANSI Rated PVC chamber with flanged connections. The housing and vessel connections shall be factory heat traced and insulated. All necessary pipe supports shall also be provided. The magnetic level indicator shall be as manufactured by Penburthy or approved Engineer approved equal.

Gauges that provide levels and act inversely to the tank contents will not be allowed.

H. Ultrasonic Level Indicator: The ultrasonic level indicator shall be a level controller with one 4-20 mA or 0-10 VDC continuous level input and NEMA 4X box to be supplied by tank manufacturer. See Division 17 for level transmitter requirements."

UU. Section 13218 - Paragraph 3.01.B – DELETE the second sentence in its entirety.

VV. REVISE the following Sections to READ "Substitutions: Refer to General Conditions":

- Section 03351 Sealed Portland Cement Concrete Finish 2.01(C)
- Section 04065 Mortar and Masonry Grout 2.02(I)(2)(b)
- Section 07130 Sheet Waterproofing 2.01(B)(12)(b)
- Section 07130 Sheet Waterproofing 2.02(A)(1)(a)(4)
- Section 07191 Vapor Retarders 2.01(D)
- Section 07411 Preformed Metal Roof Panels 2.01(B)
- Section 08310 Access Doors and Panels 2.02(B)(6)(b)
- Section 08331 Overhead Coiling Doors 2.01(A)(3)
- Section 08710 Door Hardware 2.02(E)(3)
- Section 09900 Painting and Coatings 2.01(E)

WW. SECTION 07130 SHEET WATERPROOFING – DELETE 2.01(B)(12)(C) in its entirety.

XX. SECTION 07411 PREFORMED METAL ROOF PANELS – DELETE 2.01(C) in its entirety.

YY. REVISE the following Sections to READ "Section 01300 - Submittals":

- Section 15060 Hangers and Supports for Plumbing Piping and Equipment 1.06(A)
- Section 15075 Identification for Plumbing Piping and Equipment 1.03(A)
- Section 15080 Plumbing Insulation 1.03(A)
- Section 15140 Facility Water Distribution 1.03(A)
- Section 15410 Plumbing Fixtures 1.03(A)

4.0 Modifications to Part III – PLANS FOR CONSTRUCTION

A. SHEET G2 – SHEET INDEX – ADD the following sheets to the Sheet Index on Sheet G2:

- Sheet M10 through M14 – Mechanical Control Diagrams
- Sheet S-0A – Special Inspections

B. SHEET G2 – SHEET INDEX – REVISE the following sheets titles on the Sheet Index to read:

- CSP04 – Onsite Sodium Hypochlorite Generation Softeners Process Diagram
- CSP05 – Onsite Sodium Hypochlorite Generation Brine Tank Process Diagram
- CSP06 – Onsite Sodium Hypochlorite Generation Blowers Process Diagram
- CSP07 – Onsite Sodium Hypochlorite Generation Unit No.1 Process Diagram
- CSP08 – Onsite Sodium Hypochlorite Generation Unit No.2 Process Diagram
- CSP09 – Onsite Sodium Hypochlorite Generation Storage Tanks Process Diagram
- CSP10 – Onsite Sodium Hypochlorite Generation Feed System Process Diagram
- CSP11 – Hydrofluosilicic Acid Process Diagram
- CS06 – Onsite Sodium Hypochlorite Generation Sections

C. SHEET G3 – CIVIL & MECHANICAL ABBREVIATIONS, SYMBOLS AND LEGEND – ADD the following abbreviations to the Standard Civil Abbreviations:

- HMC – Harnessed Mechanical Coupling
- S.F. – Square Feet

D. SHEET G3 – CIVIL & MECHANICAL ABBREVIATIONS, SYMBOLS AND LEGEND – REVISE abbreviation T.O.P to read:

- T.O.P – Top of Pipe

E. SHEET G3 – CIVIL & MECHANICAL ABBREVIATIONS, SYMBOLS AND LEGEND – ADD Code Review Summary as included in Addendum No. 2.

F. SHEET C5 – PHASING AND SEQUENCING PLAN (3 OF 3) – REVISE the following Sequencing and Shutdown Notes on the Phasing & Sequencing Plan (3 of 3) to read:

- Phase 1B – Begin construction of proposed onsite generation building and associated tank containment area along with sanitary sewer gravity line to the existing sanitary sewer running parallel with Beitel Creek.
- Phase 2A – Begin construction of proposed electrical building, sump vault and grinder pump force main to the existing sanitary sewer running parallel to Beitel Creek.
- Phase 2G – Install remainder of yard piping associated with the proposed 5.0MG GST, including inlets, outlets, and overflows. Also install the grinder pump force main for the OSG building.

G. SHEET C5A – VALVE REPLACEMENT – REVISE the “new valve number BFV562” in the table to read:

- BFV506

H. SHEETS C6-C10 – CIVIL DEMOLITION PLANS –REVISE sheet note No. 2 to read:

- "2. Contractor shall remove existing bollards as needed. New bollards shall replace existing bollards at any location where a structure is within 10 feet of the edge of a driveway. Any bollards removed that are outside of the 10 foot clearance shall be considered permanently removed, not to be replaced. Proposed bollards to be installed around proposed structures are shown on sheets C14-C17."

I. SHEET C8 – CIVIL DEMOLITION PLAN (3 OF 5) – REMOVE Detail 3 and REPLACE with Detail 3 as included with Addendum No. 2.

J. SHEET C10 – CIVIL DEMOLITION PLAN (5 OF 5) – REMOVE in its entirety Note No. 3 of the Chemical Injection Vault Demolition notes.

K. SHEET C14 – DIMENSION CONTROL & FENCING PLAN (2 OF 5) – ADD coordinate point 14A to include second gate post on main entrance cantilevered gate and include coordinates and description in table to read:

- 14A – Northing 13756372.81, Easting 2164054.09 – Cantilevered Gate Post

L. SHEET C20 – GRADING, PAVING & EROSION CONTROL (3 OF 5) – REVISE "???" spot elevation label at the northwest corner of the proposed SL 9 pump slab to read:

- 828.82

M. SHEET C21 – GRADING, PAVING & EROSION CONTROL (4 OF 5) – REVISE "???" slope label adjacent to the access road to read:

- 3:1

N. SHEET C23 – PIPING PLAN (1 OF 2) – ADD note No. 8 to the sheet notes to read:

- "8. All coordinates are located at the fitting centerline, unless otherwise indicated."

O. SHEET C23 – PIPING PLAN (1 OF 2) – REVISE the following piping label notes for the "Water Piping by Symbol" and "Drain Piping by Symbol" tables:

- Water Piping Symbol G3 – Connect prop. 36" steel pipe to 5 MG GST. See Detail 2, Sheet C37. X = 2164045.3612, Y = 13756032.8832
- Drain Piping Symbol C2 – Install: (1) 4" 45^0 Horizontal Bend Dual Wye Cleanouts. See Detail 7, Sheet C47. X = 2164157.78, Y = 13755981.53

P. SHEET C24 – PIPING PLAN (2 OF 2) – ADD leader label at Water Piping symbol B7 to read:

- "Anticipate up to 20 additional linear feet of piping to be required for proper connection to the nearest joint of csc pipe."

Q. SHEET C26 – WATER PIPING PROFILES (2 OF 2) – ADD scale to sheet for full size (22" x 34") 1" = 5' Vertical, half size (11" x 17") 1" = 10' Vertical, full size (22" x 34") 1" = 20' Horizontal, and half size (11" x 17") 1" = 40' Horizontal.

R. SHEET C36 – DRAINAGE STRUCTURE A & B SECTIONS AND 7.5 MG GST INLET – ADD 1" analyzer tap to be installed on the 36-Inch diameter inlet pipe at approximately 8" above finished grade on Detail 4.

S. SHEET C42 – MISCELLANEOUS DETAILS (1 OF 6) – DELETE note No. 2 from Detail 6 and replace with the following:

- "Install locking disc assembly. See Detail 5, This Sheet"

T. SHEET C42 – MISCELLANEOUS DETAILS (1 OF 6) – DELETE "See disc assembly details, sheet DD-903-18 sheet 2 of 3" in its entirety from Detail 6.

U. SHEET C46 – MISCELLANEOUS DETAILS (5 OF 6) – REMOVE note 2 within Detail 7 and REPLACE to read:

- "2. Weld in accordance with technical specifications."

V. SHEET C47 – MISCELLANEOUS DETAILS (5 OF 6) – ADD note No. 2 to Detail 7 to read:

- "Caps to be threaded"

W. DELETE the following Plan Sheets and REPLACE with the Plan Sheets included with Addendum No. 2:

- Sheet C25 – Water Piping Profiles (1 of 2)
- Sheet C27 – Drain Piping Profiles
- Sheet C28 – Drain Piping & Sanitary Sewer Piping Profiles
- Sheet C33 – 54-Inch Inlet & RCP Plan & Section Views
- Sheet A1 – Electrical SCADA Building
- Sheet A5 – Electrical SCADA Building
- Sheet A9 – On-Site Generation Building

X. DELETE the following Plan Sheets and REPLACE with the Plan Sheets included with Addendum No. 2:

- Sheet S-2A – On-Site Generation Building Foundation Plan & Sections & Details - Removed equipment pad that was located north of the trench, added third pump pedestal & revised trench shown on section 2 to be square, not circular
- Sheet S-8 – Proposed Fluoride Building Plan View - Added ramp at proposed curb

Y. ADD the following Plan Sheet included with Addendum No. 2:

- Sheet S-0A – Special Inspections

Z. Sheet CSP-01 - DELETE the following in its entirety:

- "General Instrument or Function Symbols" and all related information below, "Miscellaneous Symbols" and all related information below, "Typical Tag Numbers & Designation" and all related information below, "Hand Switch Abbreviations" and all related information below, "Instrumentation Function Code" and all related information below, "Instrument Line Symbols" and all related information below, "Electrical /Air Sources" and all related information below, "I/O Signals" and all related information below.

AA. Sheet CSP-01 - DELETE the term "P&IDS" from Note 1 in the General Notes and REPLACE with "Chemical Process Diagrams".

BB. Sheet CSP-01 - DELETE the word "Mechanical" from Note 4 in the General Notes and REPLACE with "Instrumentation".

CC. Sheet CSP-01 - DELETE Note 2 and 3 in their entirety from the General Notes. Renumber the remaining notes as required.

DD. Sheet CS-01 - DELETE Note 11 in its entirety and REPLACE with the following:

- "11. All outdoor Sodium Hypochlorite, Softened Water, and Brine piping shall be insulated and heat traced. See specifications. "

EE. Sheet CS-01 - DELETE the word "seen" in Note 14 and REPLACE with "been".

FF. Sheet CS-01 - ADD the following to Note 15 after the words "existing piping":

- "and electrical duct banks".

GG. Sheet CS-01 - ADD the following to Note 18 after the words "detection stations":

- "described in the specifications"

HH. Sheet CS-01 - ADD the following at the end of Note 19:

- "All above ground sample water piping must be insulated and heat traced."

II. Sheet CS-01 - ADD the following to the last sentence in Note 20 after the word "shall be":

- "heat traced and"

JJ. Sheet CS-02 - ADD the following at the end of Note 3:

- "Chemical System pipe supports are required at all direction changes and at minimum spacing intervals listed in Section 15062."

KK. Sheet CS-02 - DELETE the phrase "Schedule 5" in Notes 5 and 7 and REPLACE with "Schedule 10".

LL. Sheet CS-02 – DELETE the last sentence of Note 9 and REPLACE with the following:

- "All tank hold down hardware, and anchor bolts shall be Type 316 SST."

MM. Sheet CS-02 - ADD the following at the end of Note 15:

- "All side piping connections on HDPE Tanks require flexible connections."

NN. Sheet CS-02 - ADD the following at the end of Note 17:

- "Pipe supports are required on both sides of the motor actuated valves."

OO. Sheet CS-03 - DELETE the phrase "Section 15140" in Note 5 and REPLACE with "Section 15062".

PP. Sheet CS-03 - ADD the following at the end of Note 20:

- "A 1-inch PVC drip-leg with a PVC Ball Valve is required at the low point on each OSGS-PVCD line inside the containment area just prior to the termination fittings located on each OSGS line. The drip-leg line serves as a visual leak detection aide"

QQ. Sheet CS-04, Section 2– ADD a leader pointing to the 6-inch OSGS piping sitting atop the galvanized structural pipe supports with a callout that reads " See Detail EC on CSZ-05 (TYP). Contractor shall coordinate required structural pipe support elevations. "

RR. Sheet CS-04 - DELETE the phrase "Section 15140" in Note 4 and REPLACE with "Section 15062".

SS. Sheet CS-04 – DELETE the last sentence of Note 6 and REPLACE with the following:

- "All tank hold down hardware, and anchor bolts shall be Type 316 SST."

TT. Sheet CS-04 - DELETE the phrase "Schedule 5" in Note 10 and REPLACE with "Schedule 10".

UU. Sheet CS-05 - DELETE the phrase "Section 15140" in Note 5 and REPLACE with "Section 15062".

VV. Sheet CS-05 – DELETE the last sentence of Note 11 and REPLACE with the following:

- "All tank hold down hardware, and anchor bolts shall be Type 316 SST."

WW. Sheet CS-05 – ADD Note 19 below to the Sheet Notes and ADD a Bubble with 19 next to the callout for the blockout in the concrete pedestal. ADD the following:

- "19. The back of the blockout must be flush with the tank sidewall when the tank is installed on the pedestal as shown on the plans."

XX. Sheet CS-06 – ADD an 1-1/2-inch PVC tee, 1-1/2-inch PVC BV, and an 1-1/2-inch Hose connection on the 1-1/2-inch SFTW piping between the 1-1/2-inch BV and 1-1/2-inch Solenoid Valve. Provide a pipe support as shown in detail DH on CSZ-04 near the hose connection.

YY. Sheet CS-06 - DELETE the phrase "Section 15140" in Note 5 and REPLACE with "Section 15062".

ZZ. Sheet CS-06, Section 5– ADD a leader pointing to the Brine and Softened Water Piping between the Brine Tank and the OSG Building and a callout with the following:

- "Install Type 316 SST Pipe Supports".

AAA. Sheet CS-06, Section 5– ADD Note 20 below to the Sheet Notes and ADD a Bubble with 20 next to the pipe support callout for the Brine and Softened Water Piping. ADD the following:

- "20. The Brine and Softened Water piping must be supported near each direction change and at minimum spacing required per Section 15062. Supports are also required on each side of the flexible tank connection. Install supports per Detail BB (Type 2) on Sheet CSZ-02. All supports, anchors, and hardware shall be Type 316 SST."

BBB. Sheet CS-06, Section 4 and 5– ADD Note 21 below to the Sheet Notes and ADD a Bubble with 21 with a leader pointing to the filters for the brine and softened water. ADD the following:

- "21. The cartridge filters shall be installed with sufficient space to allow for easy removal and replacement."

CCC. Sheet CS-07 – DELETE the last sentence of Note 11 and REPLACE with the following:

- "All tank hold down hardware, and anchor bolts shall be Type 316 SST."

DDD. Sheet CS-07 - ADD the following at the end of Note 12:

- "A 1-inch PVC drip-leg with a PVC Ball Valve is required at the low point on each FL-PVCD line inside the containment area just prior to the termination

fittings located on each FL line. The drip-leg line serves as a visual leak detection aide"

EEE. Sheet CS-07 - ADD the following at the end of Note 13:

- "Pipe supports are required on both sides of the motor actuated valves."

FFF. Sheet CS-07 - ADD the following at the end of Note 14:

- "All side piping connections on HDPE Tanks require flexible connections."

GGG. Sheet CS-08. ADD the following at the end of Note 3:

- "Pipe supports shown serve to denote conceptual method of support. The exact number and spacing are to be determined by the Contractor in accordance with the Pipe Manufacturer's recommendations and requirements of Section 15062."

HHH. Sheet CS-08 – DELETE the last sentence of Note 7 and REPLACE with the following:

- "All tank hold down hardware, and anchor bolts shall be Type 316 SST."

III. Sheet CS-08 - ADD the following at the end of Note 9:

- "All side piping connections on HDPE Tanks require flexible connections."

JJJ. Sheet CS-08 - ADD the following at the end of Note 12:

- "Pipe supports are required on both sides of the motor actuated valves."

KKK. Sheet CS-09 - DELETE the phrase "Section 15140" in Note 4 and REPLACE with "Section 15062".

LLL. Sheet CS-10 - DELETE the phrase "Section 15140" in Note 4 and REPLACE with "Section 15062".

MMM. Sheet CS-10 - ADD the following at the end of Note 11:

- "Pipe supports and PVC unions are required on each side of all filters."

NNN. Sheet CS-11 - DELETE the phrase "Section 15140" in Note 4 and REPLACE with "Section 15062".

OOO. Sheet CS-11 - DELETE the last sentence of Note 15 and ADD the following:

- "Contractor shall provide sections of flexible, braided PVC hose equal in diameter to the pump discharge and suction diameter connections for connecting the chemical piping to the metering pumps. See Section 11242

for hose requirements. Chemical piping shall be supported and restrained at the hosed connection. Provide a hose section no less that 24 inches in length. Hose clamps must be compatible with the chemicals and hose they serve."

PPP. Sheet CSZ-01 - DELETE Detail AE in its entirety and REPLACE with the words "NOT USED".

QQQ. Sheet CSZ-01 - DELETE Note 1 and 3 in their entirety from the General Notes located at the top right and renumber accordingly.

RRR. Sheet CSZ-01 - DELETE the "Section 03250" reference in the waterstop callout in Detail AD and REPLACE with "Division 3".

SSS. Sheet CSZ-01 - ADD the following notes to Detail AG:

- "1. The bulk fill hose connection shall be installed so that any chemical remaining in the piping spills into the containment area when the hose is removed. The hose connection should be installed so that it is at least 4 inches inside the containment walls in every direction.
2. The bulk fill piping shall be installed with slope so that it can be completely drained by opening the 1 inch drain valve located near the hose connection.
3. The 2 inch BFV and 1 inch drain BV shall be installed so that they are easily accessible without entering the containment area. They must be installed so that they can be easily opened/closed by reaching over the guardrail.
4. Contractor shall coordinate the hose required connection fittings with the Owners bulk chemical provider."

TTT. Sheet CSZ-01 - DELETE the "DETAIL CA/STD-M-3" reference in Detail AI.

UUU. Sheet CSZ-02 - ADD the following to the notes in Detail BA:

- "5. See Specification Section 15062 for clarification on material requirements."

VVV. Sheet CSZ-02 - DELETE Note 4 in its entirety from Detail BC and REPLACE with the following:

- "4. See Specification Section 15062 for support and hardware material requirements."

WWW. Sheet CSZ-02 - DELETE Detail BE and REPLACE with that shown in Exhibit BE-CSZ-02.

XXX. Sheet CSZ-03 - ADD the following to the notes in Details CA, CB, and CC:

- "See Specification Section 15062 for clarification on material requirements".

YYY. Sheet CSZ-03 - DELETE the "PW Pipe and Water Main" references in Detail CK and REPLACE with "Chemical Piping".

ZZZ. Sheet CSZ-03 – ADD "Type 316" in front of each stainless steel reference in Detail CK.

AAAA. Sheet CSZ-03 - DELETE the word "DIAPHRAGMS" from Note 1, and ADD "Include PVDF caps/plugs with the female couplers." at the end of Note 3 in the General Notes located at the bottom right.

BBBB. Sheet CSZ-04 - DELETE Note 5 in its entirety from Detail DA. DELETE the "EXTEND FOR SLUDGE HOPPER SUPPORTS" callout in its entirety from Detail DA and REPLACE with "EXTEND AS REQUIRED". Also DELETE the 12" X 9"X 1" callout in its entirety from Detail DA.

CCCC. Sheet CSZ-04 - ADD the following to the notes in Details DB, DC, DD, DG, DJ, and DK:

- "See Specification Section 15062 for clarification on material requirements".

DDDD. Sheet CSZ-04 - DELETE Note 2 in its entirety from Detail DF and REPLACE with the following:

- "2. See Specification Section 15062 for support and hardware material requirements."

EEEE. Sheet CSZ-05 - ADD the following note in Details EA:

- "1. See Specification Section 15062 for clarification on material requirements".

FFFF. Sheet CSZ-05 - DELETE Detail EB in its entirety and REPLACE with the detail provided in Exhibit EB-CSZ-05.

GGGG. Sheet CSZ-05 - DELETE Detail EC in its entirety and REPLACE with the detail provided in Exhibit EC-CSZ-05.

HHHH. Sheet CSZ-05 - ADD the following note in Details ED:

- "5. The highest allowable center line elevation for sample line piping supplying the chemical analyzers shall be as follows:
  Analyzer 1 – 833.50 CL EL
  Analyzer 2- 835.00 CL EL
  This will insure the minimum required analyzer supply pressure is available at all times."

IIII. Sheet CSZ-05 - DELETE Detail EE in its entirety and REPLACE with the words "NOT USED".

JJJJ. Sheet CSZ-06 - DELETE the overall table length and width dimensions listed in Detail FA and REPLACE with "AS REQUIRED".

KKKK. Sheet CSZ-06 - ADD the following to the notes in Detail FB:

- "5. All above ground sodium hypochlorite piping and appurtenances must be insulated and heat traced."

LLLL. Sheet CSZ-06 - DELETE Detail FC and REPLACE with the detail provided in Exhibit FC-CSZ-06.

MMMM. Sheet CSZ-06 - ADD the following to the notes in Detail FE:

- "5. Contractor shall coordinate required placement of the injection quills with the static mixer plate Manufacturer.
  6. All above ground sodium hypochlorite piping and appurtenances must be insulated and heat traced."

NNNN. ADD the following Plan Sheets included with Addendum No. 2:

- Sheets M10 through M14 – Mechanical Control Diagrams

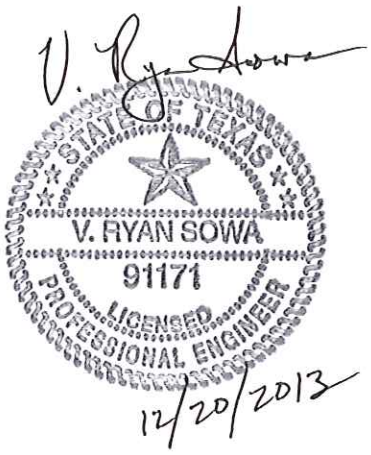
ACKNOWLEDGEMENT BY BIDDER

Each respondent is requested to acknowledge receipt of this Addendum No. 2 by his/her signature affixed hereto and to file same and attach with his/her proposal.

The undersigned acknowledges receipt of this Addendum No.2 and the proposal submitted herewith is in accordance with the information and stipulations set forth.

Date

Signature



Kimley-Horn and Associates, Inc.
Texas Registered Engineering Firm F-928
601 NW Loop 410, Ste. 350
San Antonio, TX 78216

San Antonio Water System

MEETING SIGN-IN SHEET

Project:	Naco Pump Station Improvements Project	**Meeting Date:**	December 19, 2013
Subject:	Mandatory Pre-Bid Meeting	**Place/Room:**	CR-C145

Name	Company	Phone	E-Mail
RL ROD LUNKWITZ	ARCHER WESTERN	(972) 457-8500	rlunkwitz@walshgroup.com
A.J. Martinez	Holloman Utilities	(830) 302-0456	ajmartinez@chglobalgroup.com
KS KEVIN SHEMWELL	LAYNE HEAVY CIVIL	972.484.5600	KEVIN.SHEMWELL@LAYNE.COM
JEFF BERNING	LAYNE HEAVY CIVIL	[redacted] 812.85.3232	JEFF.BERNING@LAYNE.COM
GCC GEORGE CRAIG	CSA CONSTRUCTION	713-686-8868	bidmail@csaconstruction.com
AS Aron Soto	MGC contractors	210-748-6882	txbids@mgccontractors.com
DAMIEN HERRERA	CDM Smith	210-826-3200	herreradj@cdmsmith.com
COLE WEBB	Kimley-Horn	2103213412	Cole.webb@kimley-horn.com
Marty Jones	CDM Smith	210 826-3200	jonesmc@cdmsmith.com
Ryan Sowa	Kimley-Horn	210 541-9166	ryan.sowa@kimley-horn.com
Michelle Pfeil	SAWS	210-233-3602	mpfeil@saws.org
J.G Jessie GARZA	Peerless Equip.	210-434-7867	jgarza@peerlessequipment.com
Vicente J Garza	SAWS	210-233-3596	vgarza@saws.org
Frank Peterson	CARBOLINE	210 930 4313	fpeterson@carboline.com
Leon A. Berdugo	SEA	210-735-9202	
Adrian Romero	SEA	210-735-9202	aromero@seatx.com
late (sub) THOMAS FREUND	CAE/PPI	2104941691	Tom@comfort-air.com

MEETING SIGN-IN SHEET

San Antonio Water System

Project:	Naco Pump Station Improvements Project	**Meeting Date:**	December 19, 2013
Subject:	Mandatory Pre-Bid Meeting	**Place/Room:**	CR-C145

	Name	Company	Phone	E-Mail
	ROB JENNEJAHN	EMERSON	9252124377	Robert.Jennejahn @Emerson.com
	Steven Mouser	Grubb Engineering	210-658-7250	smouser@grubbengineering.com
	Luis Chaparro	Square D	210-805-5472	luis.chaparro@schneider-electric.com
RAW	RYAN WESSELS	DN TANKS	361-799-9566	ryan.wessels@dntanks.com
NF	Nelson Fedboese	Alterman	210-510-7150	NFedboese@goalterman.com
	Larry Brietzke	Williams Supply	210-315-0460	larry@williamssupply co.com
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ARD	Arthur R. Daugherty	MWH Constructors	214 394 6623	arthur.daugherty@mwhglobal.com
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RB	Ryan Ballenger	Pepper Lawson	713 521 6774	waterworksbids@pepperlawson.com
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	Sherrod Waites	Preload, Inc	972-994-0550 Ext 113	sjw@preloadinc.com
	MIKE THOMPSON	SMITH PUMP	210-488-4321	miket@smithpump.com
	Kendall NeSmith	Kimley-Horn	210-541-9166	Kendall.NeSmith@Kimley-Horn.com
	Barbara Luedecke	Macaulay Controls Co	512-458-1148	bluedecke@macaulaycontrols.com
	KIRBY ANDERSON	MGC CONTRACTORS	210-694 0545	TXBIDS@MGCCONTRACTORS.COM
	Mike Watson	Pepper Lawson		
	Diana W. Dwyer	SAWS	210-233-3372	diana.dwyer@saws.org

CODE REVIEW SUMMARY

LOCATION

13655 O'CONNOR
LOTS 46 & 47 BLOCK 3 NCV 16674
PLAT I.D. NUMBER 050168

ZONING

C3

BUILDING AREA

ELECTRICAL BUILDING – 2,034 S. F.
OSG BUILDING – 982 S. F.

CODE BASIS

2012 INTERNATIONAL BUILDING CODE
WITH CITY OF SAN ANTONIO AMENDMENTS
2012 INTERNATIONAL FIRE CODE
WITH CITY OF SAN ANTONIO AMENDMENTS
2012 INTERNATIONAL MECHANICAL CODE
WITH CITY OF SAN ANTONIO AMENDMENTS
2012 INTERNATIONAL PLUMBING CODE
WITH CITY OF SAN ANTONIO AMENDMENTS
2011 NATIONAL ELECTRIC CODE
WITH CITY OF SAN ANTONIO AMENDMENTS
2012 TEXAS ACCESSIBILITY STANDARDS
2012 INTERNATIONAL ENERGY CONSERVATION CODE

OCCUPANCY TYPE

MECHANICAL BUILDINGS: GROUP U

CONSTRUCTION TYPE

TYPE II-B

AUTOMATIC SPRINKLERS

NONE REQUIRED

FIRE ALARM

NONE REQUIRED

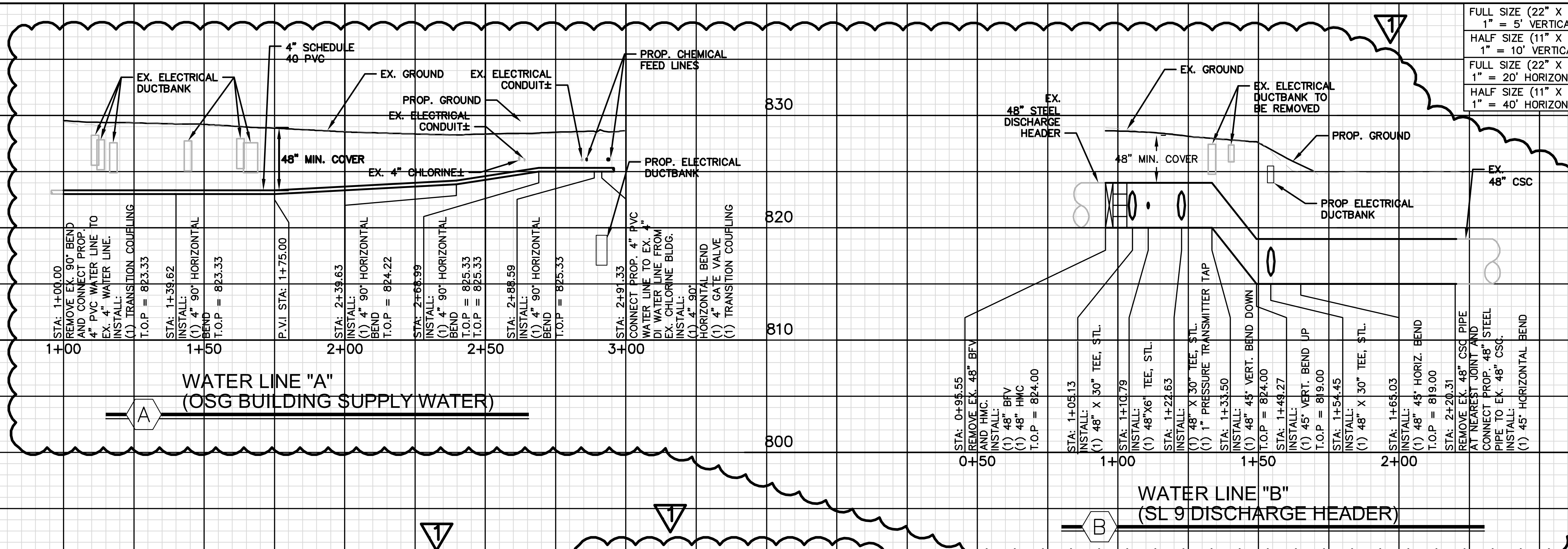
RATED CONSTRUCTION

NONE REQUIRED

SERVICE LEVEL 6 (TYP. OF 4)
FLOW METER REMOVAL
DETAIL

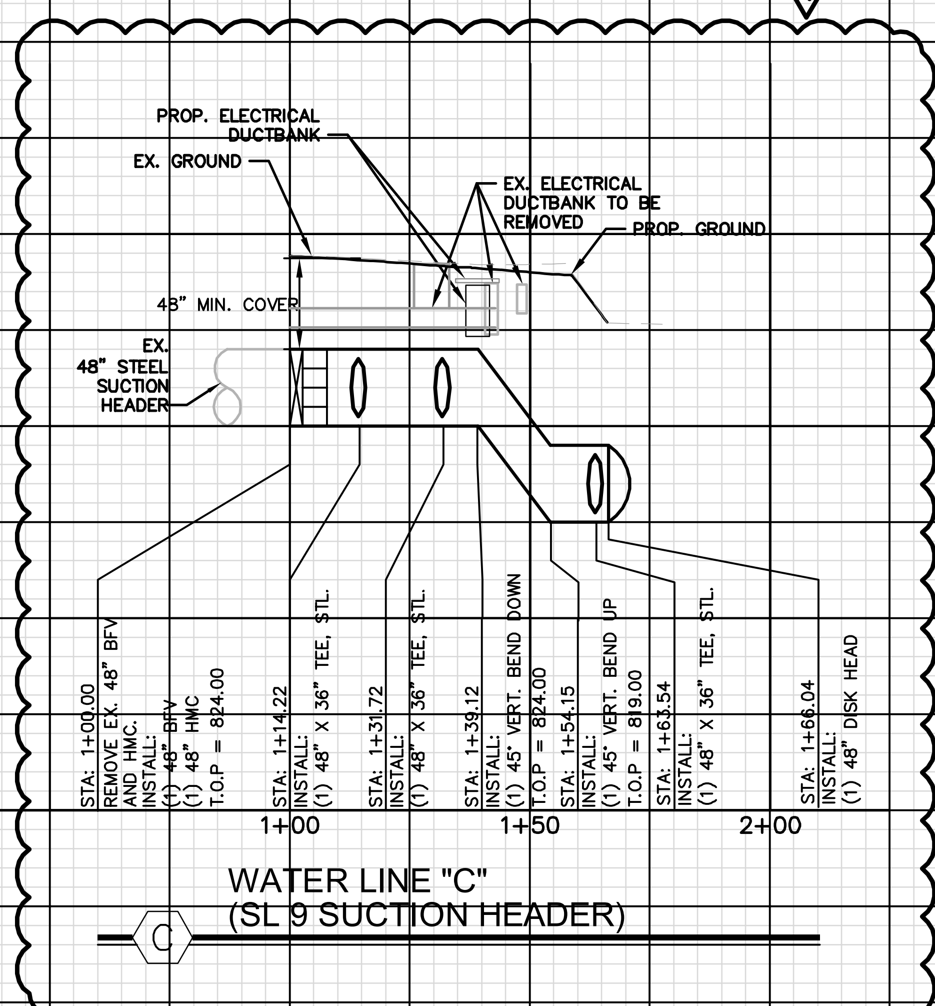
3

SCALE: NTS

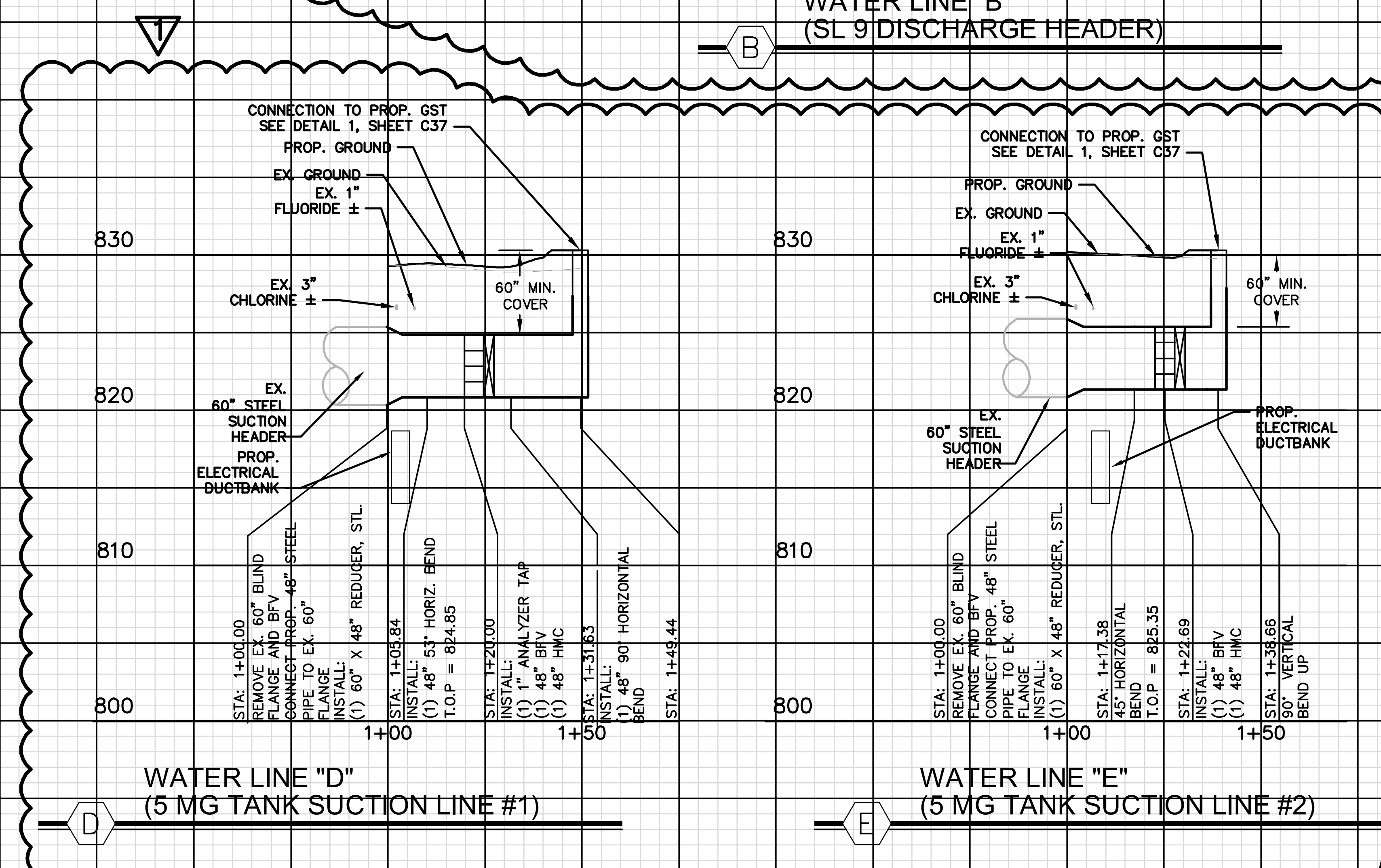


WATER LINE "A"
(OSG BUILDING SUPPLY WATER)

WATER LINE "B"
(SL 9 DISCHARGE HEADER)



WATER LINE "C"
(SL 9 SUCTION HEADER)



WATER LINE "D"
(5 MG TANK SUCTION LINE #1)

WATER LINE "E"
(5 MG TANK SUCTION LINE #2)

FULL SIZE (22" X 34")
1" = 5' VERTICAL
HALF SIZE (11" X 17")
1" = 10' VERTICAL
FULL SIZE (22" X 34")
1" = 20' HORIZONTAL
HALF SIZE (11" X 17")
1" = 40' HORIZONTAL

Kimley-Horn and Associates, Inc.

No.	Revision	By	Date
2	REVISION BY ADDENDUM NO. 2		

SAN ANTONIO WATER SYSTEM

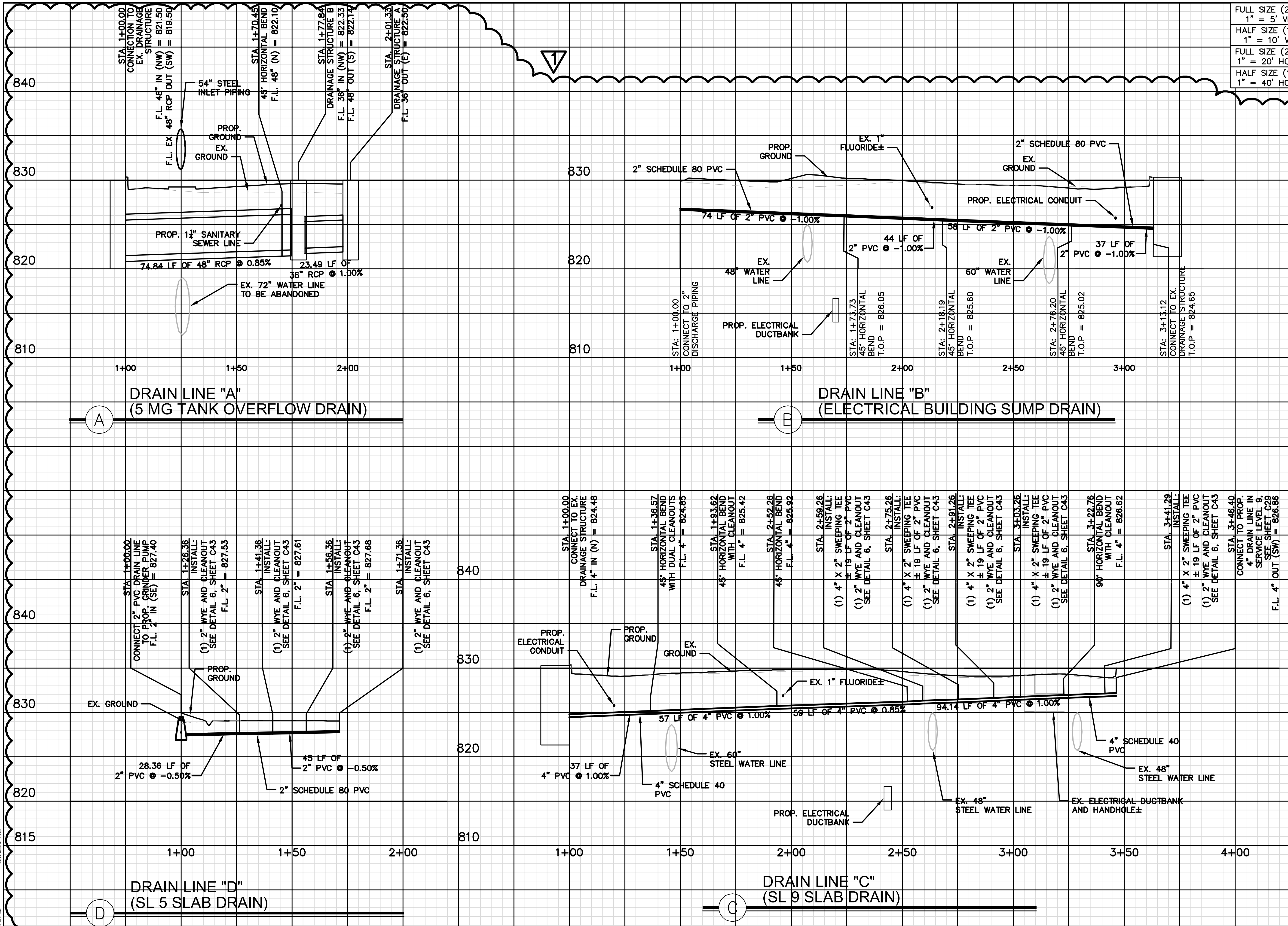
NACO PUMP STATION IMPROVEMENTS PROJECT

WATER PIPING PROFILES (1 OF 2)

Scale:	AS SHOWN
Designed by:	VRS
Drawn by:	JKN
Checked by:	FCW
Date:	DECEMBER 2013
Project No.	068665010
SAWS No.	12-6003

SHEET

C25



FULL SIZE (22" X 34") 1" = 5' VERTICAL
HALF SIZE (11" X 17") 1" = 10' VERTICAL
FULL SIZE (22" X 34") 1" = 20' HORIZONTAL
HALF SIZE (11" X 17") 1" = 40' HORIZONTAL

Kimley-Horn and Associates, Inc.

No.	Revision	By	Date
2	REVISION BY ADDENDUM NO. 2		

SAN ANTONIO WATER SYSTEM

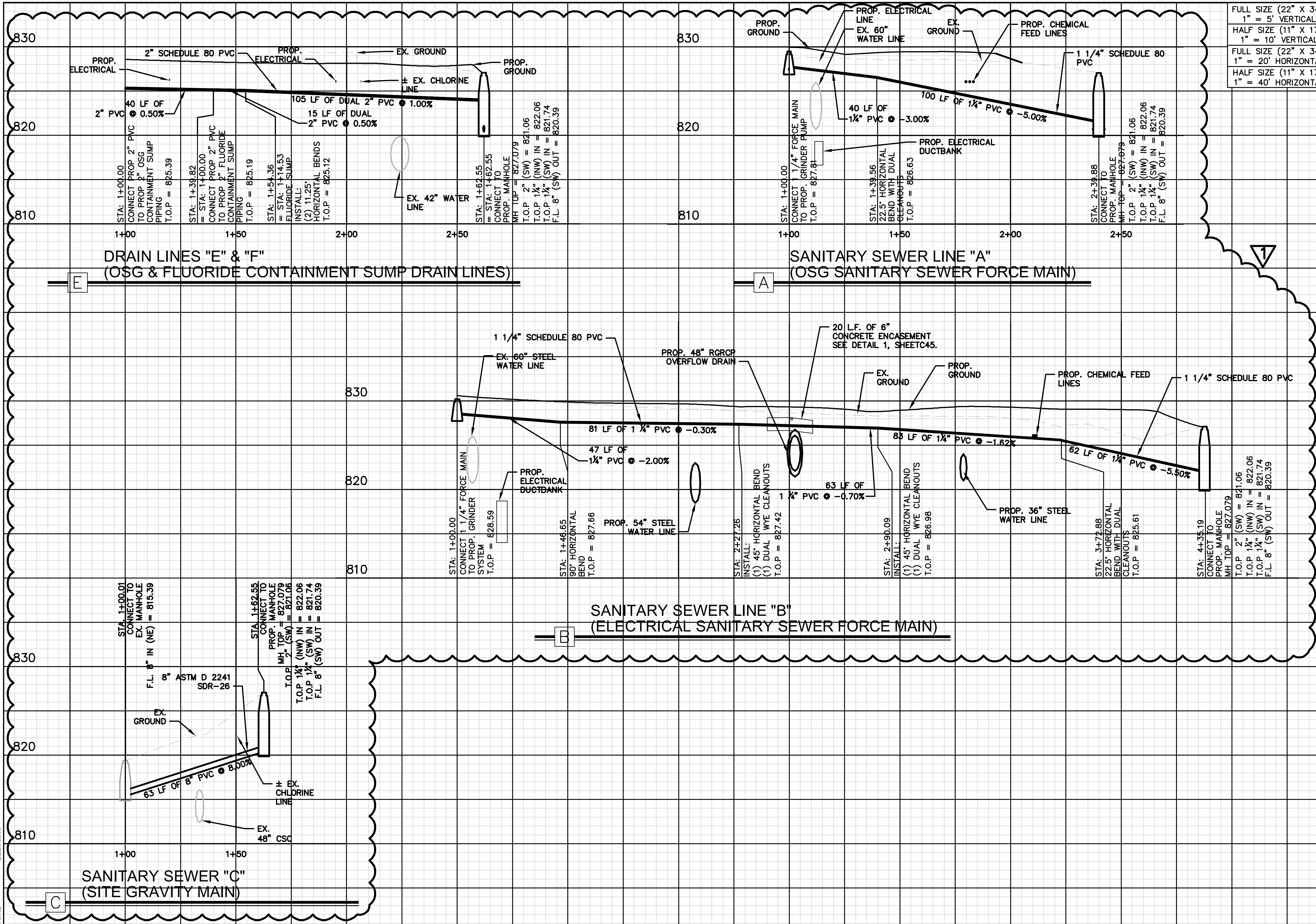
NACO PUMP STATION IMPROVEMENTS PROJECT

DRAIN PIPING PROFILES

Scale:	AS SHOWN
Designed by:	VRS
Drawn by:	JKN
Checked by:	FCW
Date:	DECEMBER 2013
Project No.	068665010
SAWS No.	12-6003

SHEET

C27


FULL SIZE (22" X 34")
1" = 5' VERTICAL
HALF SIZE (11" X 17")
1" = 10' VERTICAL
FULL SIZE (22" X 34")
1" = 20' HORIZONTAL
HALF SIZE (11" X 17")
1" = 40' HORIZONTAL
830
820
810
PROP. ELECTRICAL
2" SCHEDULE 80 PVC
PROP. ELECTRICAL
EX. GROUND
PROP. GROUND
± EX. CHLORINE LINE
40 LF OF 2" PVC @ 0.50%
105 LF OF DUAL 2" PVC @ 1.00%
15 LF OF DUAL 2" PVC @ 0.50%
EX. 42" WATER LINE
STA: 1+00.00 CONNECT PROP 2" PVC TO PROP 2" OSG CONTAINMENT SUMP PIPING T.O.P = 825.39
STA: 1+39.82 = STA: 1+00.00 CONNECT PROP 2" PVC TO PROP 2" FLUORIDE CONTAINMENT SUMP PIPING T.O.P = 825.19
STA: 1+54.36 = STA: 1+14.53 FLUORIDE SUMP INSTALL: (2) 11.25° HORIZONTAL BENDS T.O.P = 825.12
STA: 1+62.55 = STA: 1+62.55 CONNECT TO PROP. MANHOLE MH TOP = 827.079 T.O.P 2" (SW) = 821.06 T.O.P 1¼" (INW) IN = 822.06 T.O.P 1¼" (SW) IN = 821.74 F.L. 8" (SW) OUT = 820.39
1+00
1+50
2+00
2+50
DRAIN LINES "E" & "F"
(OSG & FLUORIDE CONTAINMENT SUMP DRAIN LINES)
E
PROP. GROUND
PROP. ELECTRICAL LINE
EX. 60" WATER LINE
EX. GROUND
PROP. CHEMICAL FEED LINES
1 1/4" SCHEDULE 80 PVC
40 LF OF 1¼" PVC @ -3.00%
100 LF OF 1¼" PVC @ -5.00%
PROP. ELECTRICAL DUCTBANK
STA: 1+00.00 CONNECT 1 1/4" FORCE MAIN TO PROP. GRINDER PUMP T.O.P = 827.81
STA: 1+39.56 22.5° HORIZONTAL BEND WITH DUAL CLEANOUTS T.O.P = 826.63
STA: 2+39.88 CONNECT TO PROP. MANHOLE MH TOP = 827.079 T.O.P 2" (SW) = 821.06 T.O.P 1¼" (INW) IN = 822.06 T.O.P 1¼" (SW) IN = 821.74 F.L. 8" (SW) OUT = 820.39
SANITARY SEWER LINE "A"
(OSG SANITARY SEWER FORCE MAIN)
A
1
1 1/4" SCHEDULE 80 PVC
EX. 60" STEEL WATER LINE
PROP. 48" RGRCP OVERFLOW DRAIN
20 L.F. OF 6" CONCRETE ENCASEMENT SEE DETAIL 1, SHEETC45.
EX. GROUND
PROP. GROUND
PROP. CHEMICAL FEED LINES
1 1/4" SCHEDULE 80 PVC
81 LF OF 1 ¼" PVC @ -0.30%
47 LF OF 1¼" PVC @ -2.00%
83 LF OF 1¼" PVC @ -1.62%
62 LF OF 1¼" PVC @ -5.50%
63 LF OF 1 ¼" PVC @ -0.70%
PROP. ELECTRICAL DUCTBANK
PROP. 54" STEEL WATER LINE
PROP. 36" STEEL WATER LINE
STA: 1+00.00 CONNECT 1 1/4" FORCE MAIN TO PROP. GRINDER SYSTEM T.O.P = 828.59
STA: 1+46.65 90° HORIZONTAL BEND T.O.P = 827.66
STA: 2+27.26 INSTALL: (1) 45° HORIZONTAL BEND (1) DUAL WYE CLEANOUTS T.O.P = 827.42
STA: 2+90.09 INSTALL: (1) 45° HORIZONTAL BEND (1) DUAL WYE CLEANOUTS T.O.P = 826.98
STA: 3+72.88 22.5° HORIZONTAL BEND WITH DUAL CLEANOUTS T.O.P = 825.61
STA: 4+35.19 CONNECT TO PROP. MANHOLE MH TOP = 827.079 T.O.P 2" (SW) = 821.06 T.O.P 1¼" (INW) IN = 822.06 T.O.P 1¼" (SW) IN = 821.74 F.L. 8" (SW) OUT = 820.39
SANITARY SEWER LINE "B"
(ELECTRICAL SANITARY SEWER FORCE MAIN)
B
STA: 1+00.01 CONNECT TO EX. MANHOLE F.L. 8" IN (NE) = 815.39
STA: 1+62.55 CONNECT TO PROP. MANHOLE MH TOP = 827.079 T.O.P 2" (SW) = 821.06 T.O.P 1¼" (INW) IN = 822.06 T.O.P 1¼" (SW) IN = 821.74 F.L. 8" (SW) OUT = 820.39
8" ASTM D 2241 SDR-26
EX. GROUND
63 LF OF 8" PVC @ 8.00%
± EX. CHLORINE LINE
EX. 48" CSC
SANITARY SEWER "C"
(SITE GRAVITY MAIN)
C

Kimley-Horn and Associates, Inc.

No.	Revision	By	Date
2	REVISION BY ADDENDUM NO. 2		

SAN ANTONIO WATER SYSTEM

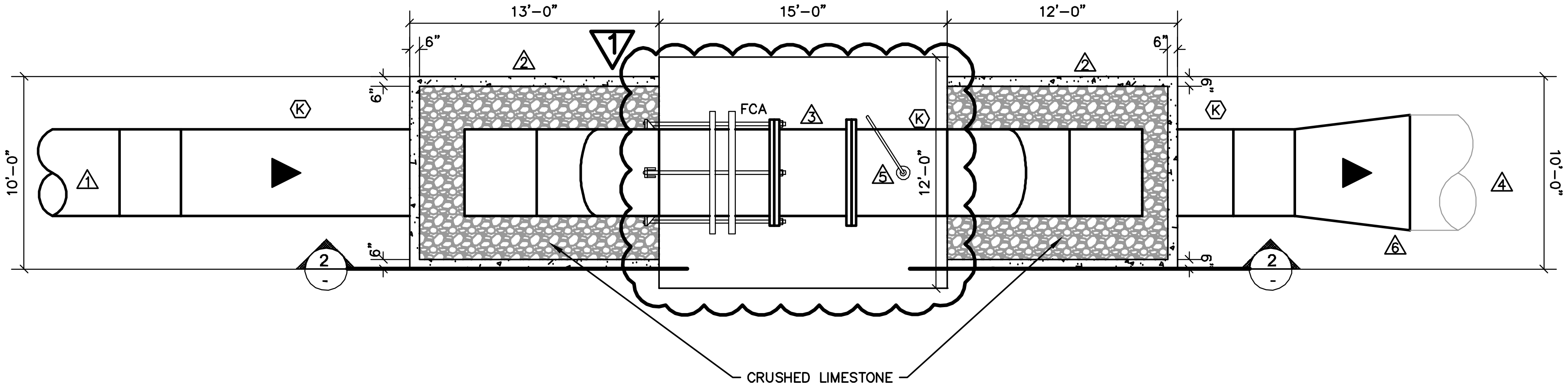
NACO PUMP STATION IMPROVEMENTS PROJECT

DRAIN PIPING & SANITARY SEWER PIPING PROFILES

Scale:	AS SHOWN
Designed by:	VRS
Drawn by:	JKN
Checked by:	FCW
Date:	DECEMBER 2013
Project No.	068665010
SAWS No.	12-6003

SHEET

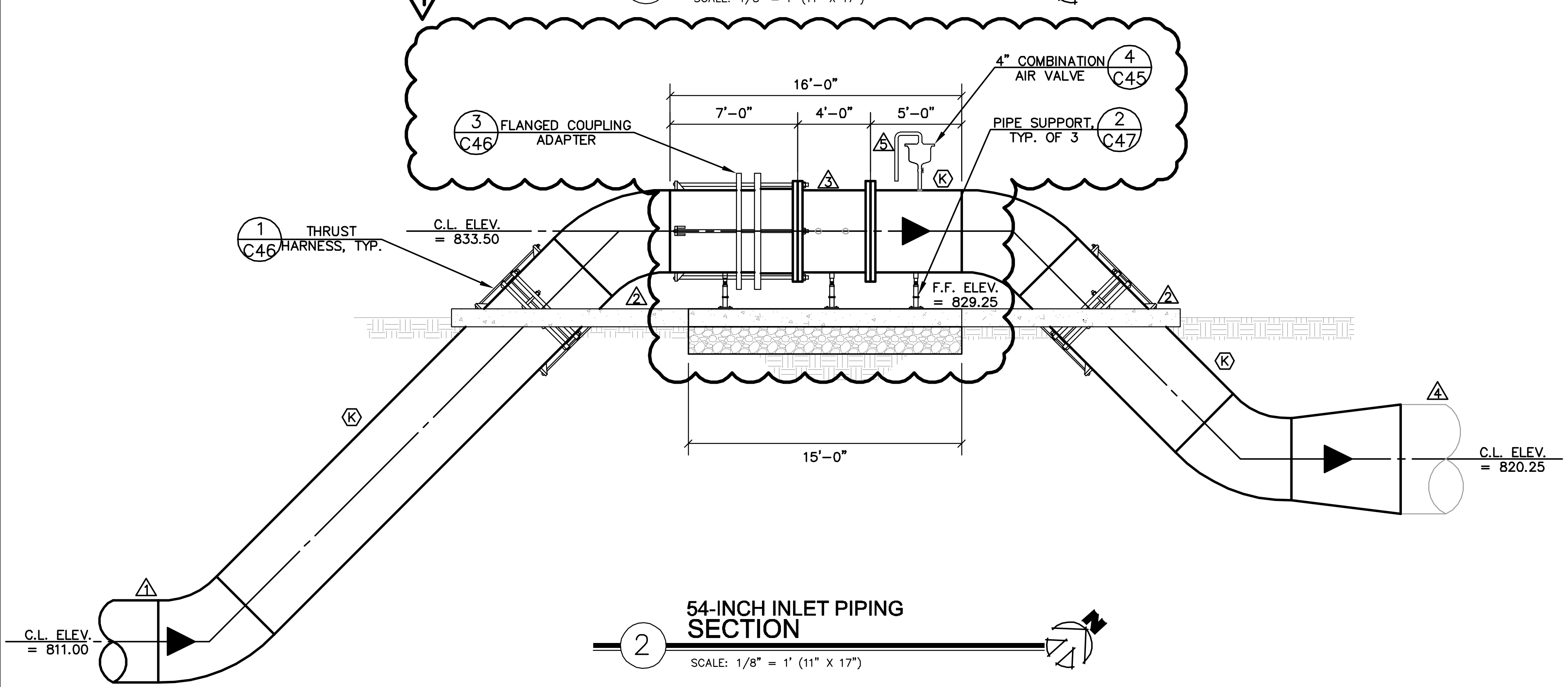
C28



54-INCH INLET PIPING PLAN

1

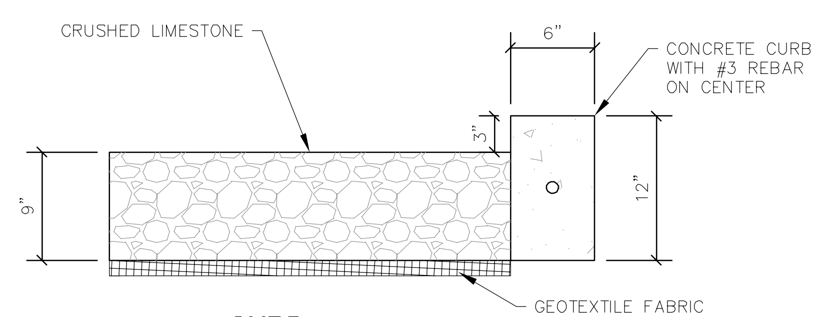
SCALE: 1/8" = 1' (11" X 17")



54-INCH INLET PIPING SECTION

2

SCALE: 1/8" = 1' (11" X 17")



CURB DETAIL

3

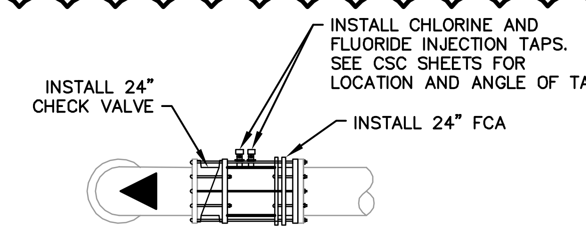
NTS

NOTES BY SYMBOL

1	FOR CONTINUATION OF 54" PIPING SEE SHEET C23.
2	6" CONCRETE CURBING TO BE POURED AROUND INLET PIPING AND SHALL BE FILLED WITH CRUSHED LIMESTONE TO A DEPTH OF 9".
3	FOR STATIC MIXER DIMENSIONS SEE CHEMICAL SYSTEMS SHEETS.
4	REMOVE EX. 72" CSC WATER LINE AT THE NEAREST JOINT TO THE SOUTHWEST AND PLUG BY FILLING PIPE WITH FLOWABLE FILL. CONNECT PROP. 54" STEEL PIPING TO EXISTING 72" CSC WATER LINE AT NEAREST JOINT.
5	COMBINATION AIR VALVE TO DRAIN TO THE NEAREST CURB LOCATION UNDER THE INLET PIPING. SEE DETAIL 6, SHEET C47 FOR BRACING OF DRAIN PIPING.
6	CONTRACTOR SHALL COORDINATE WITH HANSON AND FIELD VERIFY DIAMETER, TYPE, NEAREST JOINT AND PIPE CONDITION ON ALL CSC CONNECTIONS PRIOR TO MAKING SHUTDOWNS OR CONNECTIONS.

PIPING BY SYMBOL

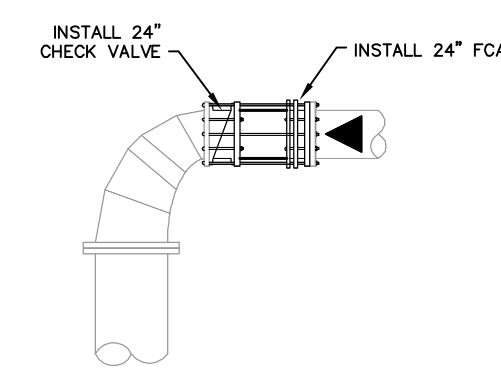
K	54" STEEL PIPING



REGIONAL CARRIZO PIPING PLAN

4

SCALE: 1/8" = 1' (11" X 17")



REGIONAL CARRIZO PIPING SECTION

5

SCALE: 1/8" = 1' (11" X 17")

BAR IS ONE INCH IN LENGTH ON ORIGINAL DRAWING. CHECK SCALE AND ADJUST ACCORDINGLY.

ONE INCH

Kimley-Horn and Associates, Inc.

No.	Revision	By	Date
1	REVISION BY ADDENDUM NO. 2		

V. RYAN SOWA 91171 REGISTERED PROFESSIONAL ENGINEER STATE OF TEXAS

SAN ANTONIO WATER SYSTEM

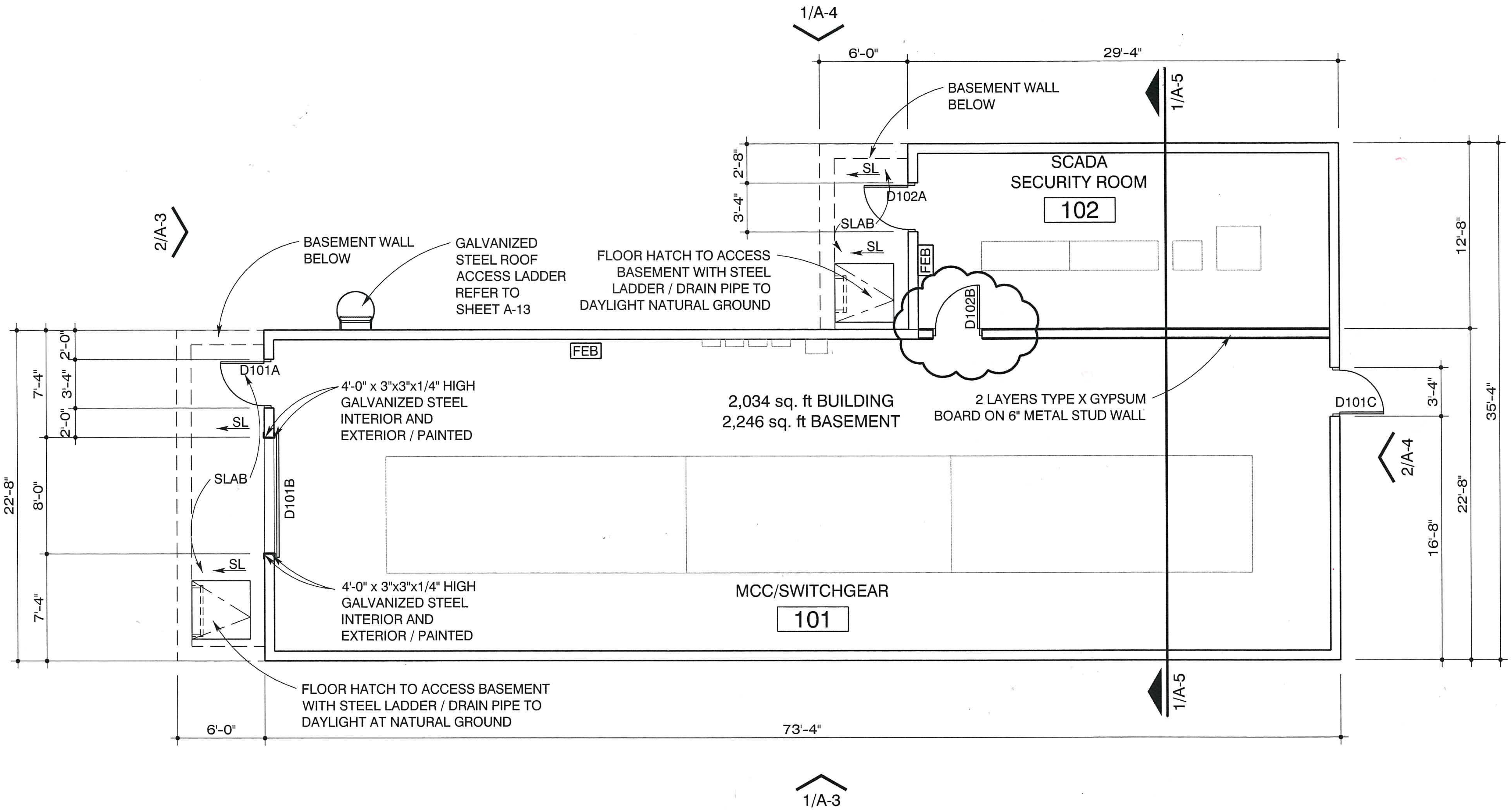
NACO PUMP STATION IMPROVEMENTS PROJECT

54-INCH INLET & RCP PLAN & SECTION VIEWS

Scale:	AS SHOWN
Designed by:	VRS
Drawn by:	JKN
Checked by:	FCW
Date:	DECEMBER 2013
Project No.	068665010
SAWS No.	12-6003

SHEET

C33



LEGEND

FEB	FIRE EXTINGUISHER BRACKET

1 FLOOR PLAN

ELECTRICAL BUILDING
1/8" : 1'

PLAN NORTH

REGISTERED ARCHITECT
HAYDEN PHILLIPS
12551
STATE OF TEXAS
12.3.13

RVK
architecture interior design landscape architecture

SAN ANTONIO WATER SYSTEM

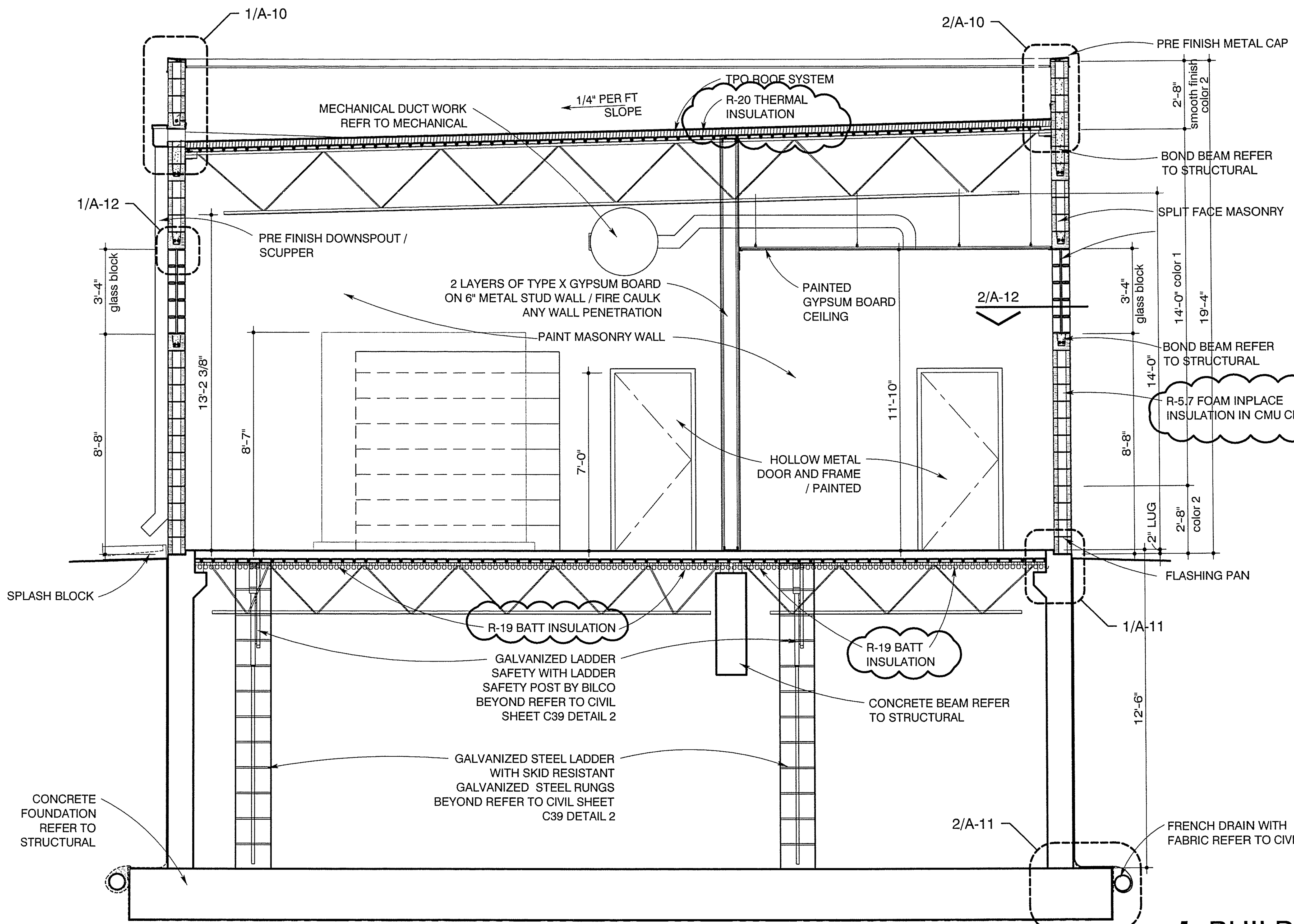
NACO PUMP STATION IMPROVEMENTS PROJECT

ELECTRICAL SCADA BUILDING

Scale:	AS SHOWN
Designed by:	
Drawn by:	
Checked by:	
Date:	NOVEMBER 2013
Project No.	11216
SAWS No.	12-6003

SHEET

A-1



REGISTERED ARCHITECT
DAVID BOMERSBACH
9708
STATE OF TEXAS
12.6.13

1 BUILDING SECTION

AT ELECTRICAL BUILDING
1/4" : 1'

RVK
architecture interior design landscape architecture
745 e mulberry ave suite 601
san antonio texas 78212
telephone: 210.733.3535
web: www.rvk-architects.com

SAN ANTONIO WATER SYSTEM

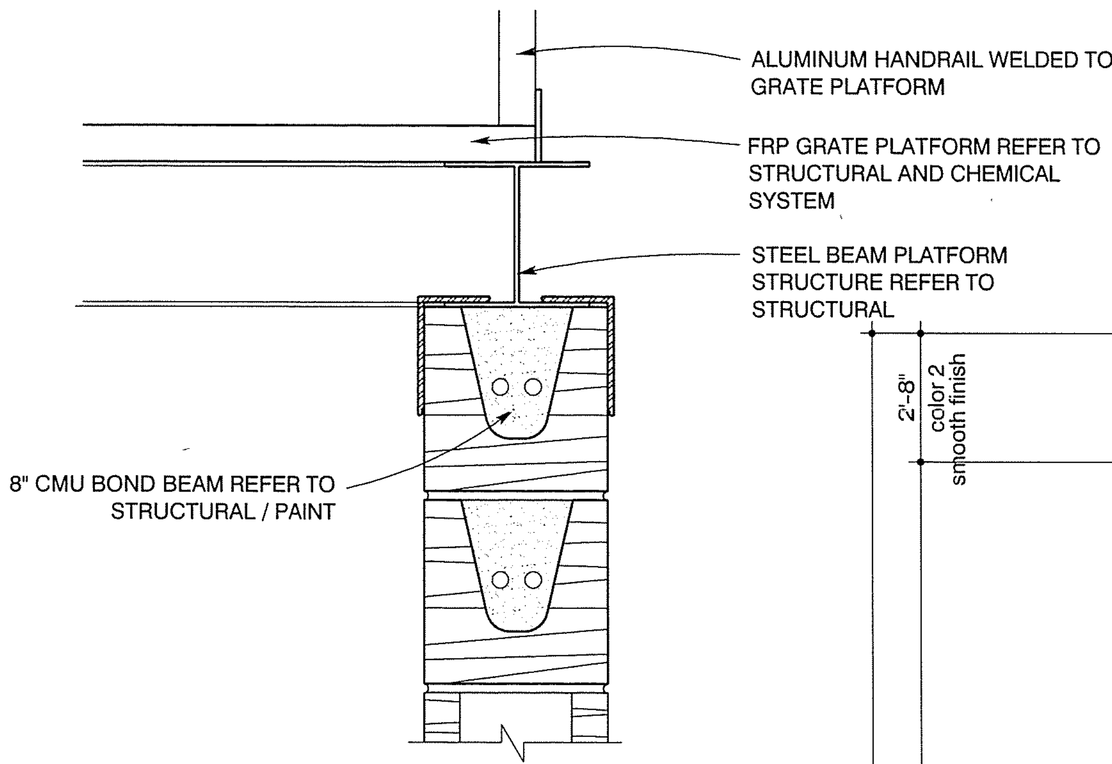
NACO PUMP STATION IMPROVEMENTS PROJECT

ELECTRICAL SCADA BUILDING

Scale:	AS SHOWN
Designed by:	
Drawn by:	
Checked by:	
Date:	DECEMBER 2013
Project No.	11216
SAWS No.	12-6003

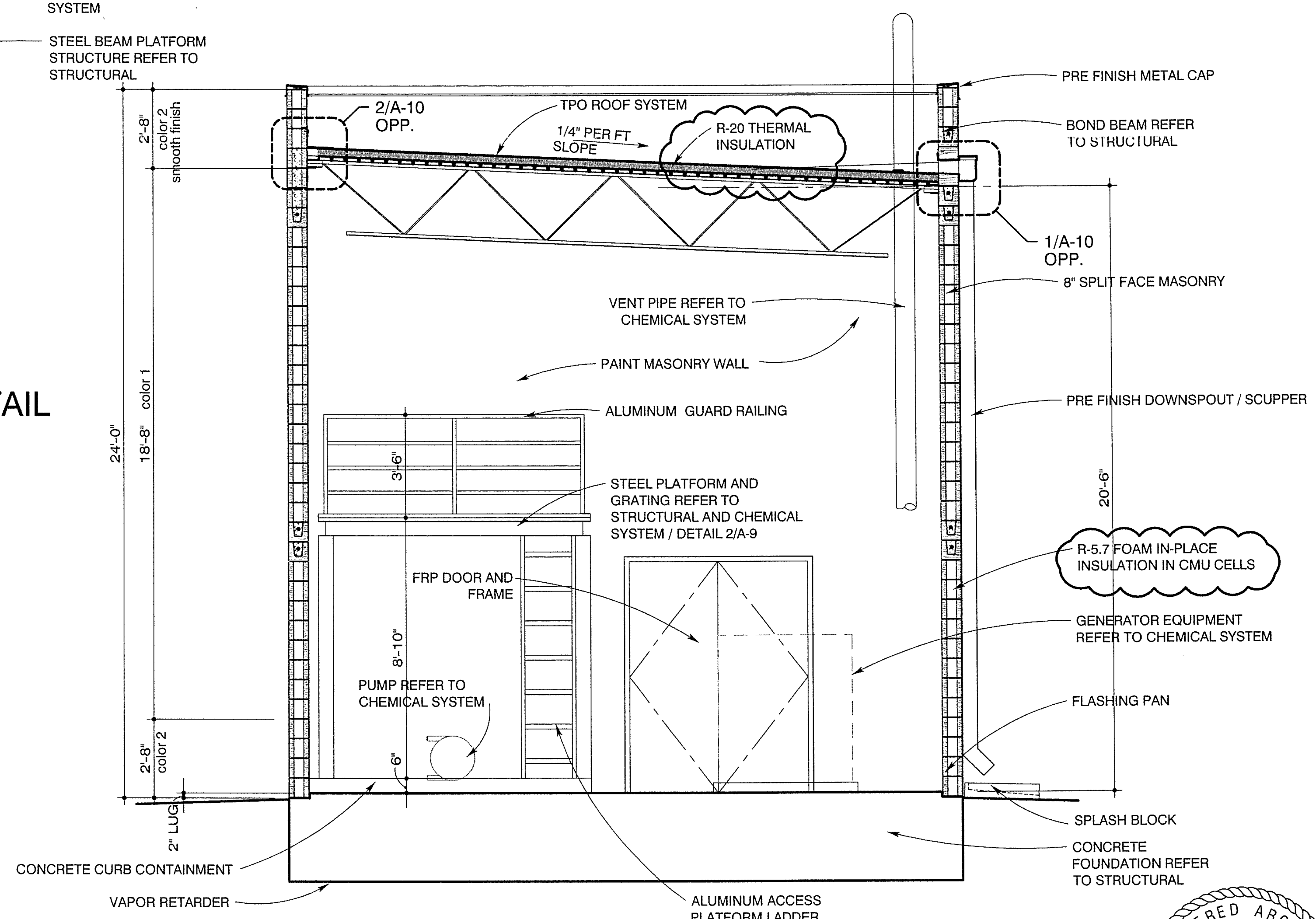
SHEET

A-5



2 SECTION DETAIL

AT OSG PLATFORM
1 1/2" : 1'



1 BUILDING SECTION

AT OSG BUILDING
1/4" : 1'

REGISTERED ARCHITECT
DAVID BOMERSBACH
9708
STATE OF TEXAS
12-6-13

RVK
architecture interior design landscape architecture
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SAN ANTONIO WATER SYSTEM

NACO PUMP STATION IMPROVEMENTS PROJECT

ON-SITE GENERATION BUILDING

Scale:	AS SHOWN
Designed by:	
Drawn by:	
Checked by:	
Date:	DECEMBER 2013
Project No.	11216
SAWS No.	12-6003

SHEET
A-9

SPECIAL INSPECTIONS REQUIRED:

SPECIAL INSPECTIONS REQUIRED FOR THIS PROJECT SHALL BE PERFORMED IN ACCORDANCE WITH I.B.C. CHAPTER 17. SPECIAL INSPECTIONS SHALL BE PERFORMED BY AN APPROVED INSPECTION AGENCY U.N.O. EMPLOYED BY THE OWNER.

THE SPECIAL INSPECTOR SHALL BE CERTIFIED BY THE INTERNATIONAL CODE COUNCIL (I.C.C.) TO PERFORM INSPECTION FOR THE PARTICULAR TYPE OF CONSTRUCTION OR OPERATION REQUIRING SPECIAL INSPECTION PRIOR TO THE COMPLETION OF THAT PHASE OF THE WORK.

THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL AND/OR THE ENGINEER. ALL DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR SATISFACTORY CORRECTION. THEN IF UNCORRECTED TO THE STRUCTURAL ENGINEER AND TO THE BUILDING OFFICIAL.

THE SPECIAL INSPECTOR SHALL SUBMIT A FINAL SIGNED REPORT STATING WHETHER THE WORK REQUIRING SPECIAL INSPECTION WAS, TO THE BEST OF THE INSPECTOR'S KNOWLEDGE, IN CONFORMANCE WITH THE APPROVED PLANS AND SPECIFICATIONS AND THE APPLICABLE WORKMANSHIP PROVISIONS OF THIS CODE.

IT SHALL BE THE CONTRACTOR'S SOLE RESPONSIBILITY TO PROVIDE AT LEAST 48 HOURS ADVANCE NOTICE TO THE OWNER/OWNER'S REPRESENTATIVE WHEN HIS WORK IS READY FOR ANY REQUIRED SPECIAL INSPECTIONS.

THE INSPECTION OF STEEL CONSTRUCTION IS NOT REQUIRED WHEN THE WORK IS DONE ON THE PREMISES OF A FABRICATOR REGISTERED AND APPROVED TO PERFORM SUCH WORK WITHOUT SPECIAL INSPECTION. APPROVAL SHALL BE BASED UPON REVIEW OF THE FABRICATOR'S WRITTEN PROCEDURAL AND QUALITY CONTROL MANUALS AND PERIODIC AUDITING OF FABRICATION PRACTICES BY AN APPROVED SPECIAL INSPECTION AGENCY AT COMPLETION OF FABRICATION. THE APPROVED FABRICATOR SHALL SUBMIT A CERTIFICATE OF COMPLIANCE TO THE BUILDING OFFICIAL STATING THAT THE WORK WAS PERFORMED IN ACCORDANCE WITH THE APPROVED CONSTRUCTION DOCUMENTS.

SPECIAL INSPECTION SHALL BE PROVIDED FOR THE FOLLOWING TYPES OF WORK PERFORMED IN THE FIELD OR NOT PROVIDED IN AN APPROVED FABRICATION SHOP AS DEFINED ABOVE, UNLESS NOTED AS "N/A".

SPECIAL INSPECTIONS REQUIRED (■YES ☐NO)

REQUIRED VERIFICATION AND INSPECTION OF SOILS TO BE PERFORMED BY A LICENSED GEOTECHNICAL ENGINEER AS SHOWN:

	CONT	PERIODIC	N/A
1. VERIFY THAT MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN CAPACITY	☐	■	☐
2. VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND THAT HAVE REACHED PROPER MATERIAL	☐	■	☐
3. PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS	☐	■	☐
4. VERIFY USE OF PROPER MATERIALS DENSITIES AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF COMPACTED FILL	■	☐	☐
5. PRIOR TO PLACEMENT OF COMPACTED FILL OBSERVE SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY	☐	■	☐

CONCRETE CONSTRUCTION:

	CONT	PERIODIC	N/A
1. INSPECTION OF REINFORCING STEEL INCLUDING PRESTRESSING TENDONS AND PLACEMENT	☐	■	☐
2. INSPECTION OF REINFORCING STEEL WELDING IN ACCORDANCE WITH I.B.C. TABLE 1705.2.2 ITEM 2b	☐	■	☐
3. INSPECTION OF ANCHORS CAST IN CONCRETE WHERE ALLOWABLE LOADS HAVE BEEN INCREASED OR WHERE STRENGTH DESGIN IS USED AS INDICATED	☐	■	☐
4. INSPECTION OF ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBERS	☐	■	☐
5. VERIFYING USE OF REQUIRED DESIGN MIX	☐	■	☐
6. AT THE TIME FRESH CONCRETE IS SAMPLED TO FABRICATE SPECIMENS FOR STRENGTH TESTS PERFORM SLUMP AND AIR CONTENT TEST AND DETERMINE THE TEMPERATURE OF THE CONCRETE	■	☐	☐
7. INSPECTION OF CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES	☐	■	☐
8. INSPECTION FOR MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES	☐	☐	■
9. INSPECTION OF PRESTRESSED CONCRETE	☐	☐	■
A. APPLICATION OF PRESTRESSING FORCES			
B . GROUTING OF BONDED PRESTRESSING TENDONS IN THE SEISMIC-FORCE RESISTING SYSTEM			
10. ERECTION OF PRECAST CONCRETE MEMBERS	☐	☐	■
11. VERIFICATION OF IN-SITU CONCRETE STRENGTH PRIOR TO STRESSING OF TENDONS IN POST-TENSIONED CONCRETE AND PRIOR TO REMOVAL OF SHORES AND FORMS FROM SEAMS AND STRUCTURAL SLABS	☐	■	☐
12. INSPECT FORMWORK FOR THE SHAPE LOCATION AND DIMENSIONS OF CONCRETE MEMBER BEING FORMED	☐	■	☐

SPECIAL INSEPECTION FOR STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH THE QUALITY ASSURANCE INSPECTION REQUIREMENTS OF AISC 360.

STEEL CONSTRUCTION OTHER THAN STRUCTURAL STEEL:

	CONT	PERIODIC	N/A
1. MATERIAL VERIFICATION OF COLD-FORMED STEEL DECK:			
A. IDENTIFICATION MARKINGS TO CONFORM TO ASTM STANDARDS SPECIFIED IN THE APPROVED CONSTRUCTION DOCUMENTS	☐	■	☐
B. MANUFACTURER'S CERTIFIED TEST REPORTS	☐	■	☐
2. INSPECTION OF WELDING:			
A. COLD-FORMED STEEL DECK:			
1) FLOOR AND ROOF DECK WELDS	☐	■	☐
B. REINFORCING STEEL:			
1) VERIFICATION OF WELD ABILITY OF REINFORCING STEEL OTHER THAN ASTM A 706	☐	☐	■
2) REINFORCING STEEL RESISTING FLEXURAL AND AXIAL FORCE IN INTERMEDIATE AND SPECIAL MOMENT FRAMES AND BOUNDARY ELEMENTS OF SPECIAL STRUCTURAL WALLS OF CONCRETE AND SHEAR REINFORCEMENT	☐	☐	■
3. SHEAR REINFORCEMENT	☐	☐	■
4. OTHER REINFORCING STEEL	☐	☐	■

MASONRY CONSTRUCTION:

MASONRY CONSTRUCTION SHALL BE INSPECTED AND VERIFIED IN ACCORDANCE WITH TMS 402/ACI 530/ASCE 5 AND TMS 602/ACI 530.1/ASCE 6 QUALITY ASSURANCE PROGRAM REQUIREMENTS

SPECIAL INSPECTIONS REQUIRED (■YES ☐NO)

	CONT	PERIODIC	N/A
1. VERIFY COMPLIANCE WITH THE APPROVED SUBMITTALS	☐	■	☐
2. AS MASONRY CONSTRUCTION BEGINS, VERIFY THAT THE FOLLOWING ARE IN COMPLIANCE:	☐	■	☐
A. PROPORTIONS OF SITE-PREPARED MORTAR	☐	■	☐
B. CONSTRUCTION OF MORTAR JOINTS	☐	■	☐
C. GRADE AND SIZE OF PRESTRESSING TENDONS AND ANCHORAGES	☐	☐	■
D. LOCATION OF REINFORCEMENT, CONNECTORS AND PRESTRESSING TENDONS AND ANCHORAGES	☐	■	☐
E. PRESTRESSING TECHNIQUE	☐	☐	■
F. PROPERTIES OF THIN-BED MORTAR FOR AAC MASONRY	☐	☐	■
3. PRIOR TO GROUTING, VERIFY THE THE FOLLOWING ARE IN COMPLIANCE:			
A. GROUT SPACE	☐	■	☐
B. GRADE, TYPE AND SIZE OF REINFORCEMENT AND ANCHOR BOLTS AND PRESTRESSING TENDONS AND ANCHORAGES	☐	■	☐
C. PLACEMENT OF REINFORCEMENT, CONNECTORS AND PRESTRESSING TENDONS AND ANCHORAGES	☐	☐	■
D. PROPORTIONS OF SITE-PREPARED GROUT AND PRESTRESSING GROUT FOR BONDED TENDONS	☐	☐	■
E. CONSTRUCTION OF MORTAR JOINTS	☐	■	☐
4. VERIFY DURING CONSTRUCTION:			
A. SIZE AND LOCATION OF STRUCTURAL ELEMENTS	☐	■	☐
B. TYPE, SIZE AND LOCATION OF ANCHORS, INCLUDING OTHER DETAILS OF ANCHORAGE OF MASONRY TO STRUCTURAL MEMBERS, FRAMES OR OTHER CONSTRUCTION	☐	■	☐
C. WELDING OF REINFORCEMENT	☐	☐	■
D. PREPARATION, CONSTRUCTION AND PROTECTION OF MASONRY DURING COLD WEATHER (TEMPERATURE BELOW 40°F (4.4°C)) OR HOT WEATHER (TEMPERATURE ABOVE 90°F (32.3°C))	☐	■	☐
E. APPLICATION AND MEASUREMENT OF PRESTRESSING FORCE	☐	☐	■
F. PLACEMENT OF GROUT AND PRESTRESSING GROUT FOR BONDED TENDONS IS IN COMPLIANCE	☐	☐	■
G. PLACEMENT OF AAC MASONRY UNITS AND CONSTRUCTION OF THIN-BED MORTAR JOINTS	☐	☐	■
5. OBSERVE PREPARATION OF GROUT SPECIMENS, MORTAR SPECIMENS AND/OR PRISMS	☐	■	☐

POST INSTALLED ANCHORS IN CONCRETE AND MASONRY:

	CONT	PERIODIC	N/A
1. VERIFY ANCHOR TYPE	☐	■	☐
2. VERIFY ADHESIVE IDENTIFICATION AND EXPIRATION DATE	☐	■	☐
3. VERIFY ANCHOR DIMENSIONS	☐	■	☐
4. VERIFY CONCRETE TYPE	☐	■	☐
5. VERIFY CONCRETE COMPRESSIVE STRENGTH	☐	■	☐
6. VERIFY HOLE DRILLING METHOD	☐	■	☐
7. VERIFY HOLE DIMENSIONS	☐	■	☐
8. VERIFY HOLE CLEANING PROCEDURES	☐	■	☐
9. VERIFY ANCHOR SPACING	☐	■	☐
10. VERIFY EDGE DISTANCES	☐	■	☐
11. VERIFY CONCRETE THICKNESS	☐	■	☐
12. VERIFY ANCHOR EMBEDMENT	☐	■	☐
13. VERIFY TIGHTENING TORQUE	☐	■	☐
14. VERIFY ADHERENCE TO THE MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS	☐	■	☐

THE SPECIAL INSPECTOR MUST VERIFY THE INITIAL INSTALLATIONS OF EACH TYPE AND SIZE OF ADHESIVE ANCHOR INSTALLED BY THE CONSTRUCTION PERSONNEL ON SITE, SUBSEQUENT INSTALLATIONS OF THE SAME ANCHOR TYPE AND SIZE BY THE SAME CONSTRUCTION PERSONNEL MAY BE PERMITTED WITH THE APPROVAL OF THE ENGINEER AND THE SPECIAL INSPECTOR TO BE PERFORMED IN THE ABSENCE OF THE SPECIAL INSPECTOR. ANY CHANGE IN THE ANCHOR PRODUCT BEING INSTALLED OR THE PERSONNEL PERFORMING THE INSTALLATION REQUIRES AN INITIAL INSPECTION FOR ONGOING INSTALLATIONS OVER AN EXTENDED PERIOD. THE SPECIAL INSPECTOR MUST MAKE REGULAR INSPECTIONS TO CONFIRM CORRECT HANDLING AND INSTALLATION OF THE PRODUCT. THE SPECIAL INSPECTOR SHALL INFORM THE ENGINEER OF THE FREQUENCY OF THE PERIODIC ANCHOR INSPECTIONS. THE ENGINEER MAY REQUEST ADDITIONAL INSPECTIONS AT ANY TIME.

DEFERRED SUBMITTALS/CERTIFICATIONS:

SUBMITTALS REQUIRED (■YES ☐NO)

1. OFF-SITE FABRICATION:

FABRICATORS SHALL BE CITY, COUNTY AND/OR I.B.C. APPROVED FABRICATORS FABRICATORS FOR ALL OFFSITE FABRICATION OF THE ITEMS LISTED BELOW:

A. TRUSSES	☐ N/A
B. GLU-LAMINATED MEMBERS	☐ N/A
C. PRECAST CONCRETE	☐ N/A
D. STRUCTURAL STEEL (MILL REPORTS AND IDENTIFICATION OF STEEL AFFIDAVIT OF COMPLIANCE)	■
E. OTHER	☐ N/A

2. DEFERRED SUBMITTALS:

SUBMITTAL DOCUMENTS FOR THE DEFERRED SUBMITTAL ITEMS LISTED BELOW SHALL BE DESIGNED BY A LICENSED PE OR SE AND SUBMITTED BY THE CONTRACTOR TO THE BUILDING DEPARTMENT/APPROVAL AGENCY AND STRUCTURAL ENGINEER FOR REVIEW AND APPROVAL. THE DEFERRED SUBMITTAL ITEMS SHALL NOT BE INSTALLED UNTIL THEIR DESIGN AND SUBMITTAL DOCUMENTS HAVE BEEN APPROVED BY THE BUILDING OFFICIAL.

A. PREFABRICATED TRUSSES	☐ N/A
B. PRECAST VAULTS	☐ N/A
C. CONCRETE MIX	■
D. OTHER: PRECAST CONCRETE PILES	☐ N/A
E. PRE-ENGINEERED METAL BUILDINGS AND CANOPIES	☐ N/A

No.	Revision	By	Date
2	REVISION BY ADDENDUM NO.2	LAB	12-13-13

STRUCTURAL ENGINEERING ASSOCIATES, INC.
CONSULTING ENGINEERS
(210) 735-9202 SAN ANTONIO, TX. 78229
TBPE FIRM REG. NO. F-199

STATE OF TEXAS
L.A. BERDUGO
59151
REGISTERED PROFESSIONAL ENGINEER

12-13-13

SAN ANTONIO WATER SYSTEM

NACO PUMP STATION IMPROVEMENTS PROJECT

SPECIAL INSPECTIONS

Scale:	AS SHOWN
Designed by:	L.A.B.
Drawn by:	A.M.H.
Checked by:	E.J.M.
Date:	DECEMBER 2013
Project No.	13-060C
SAWS No.	12-6003

SHEET

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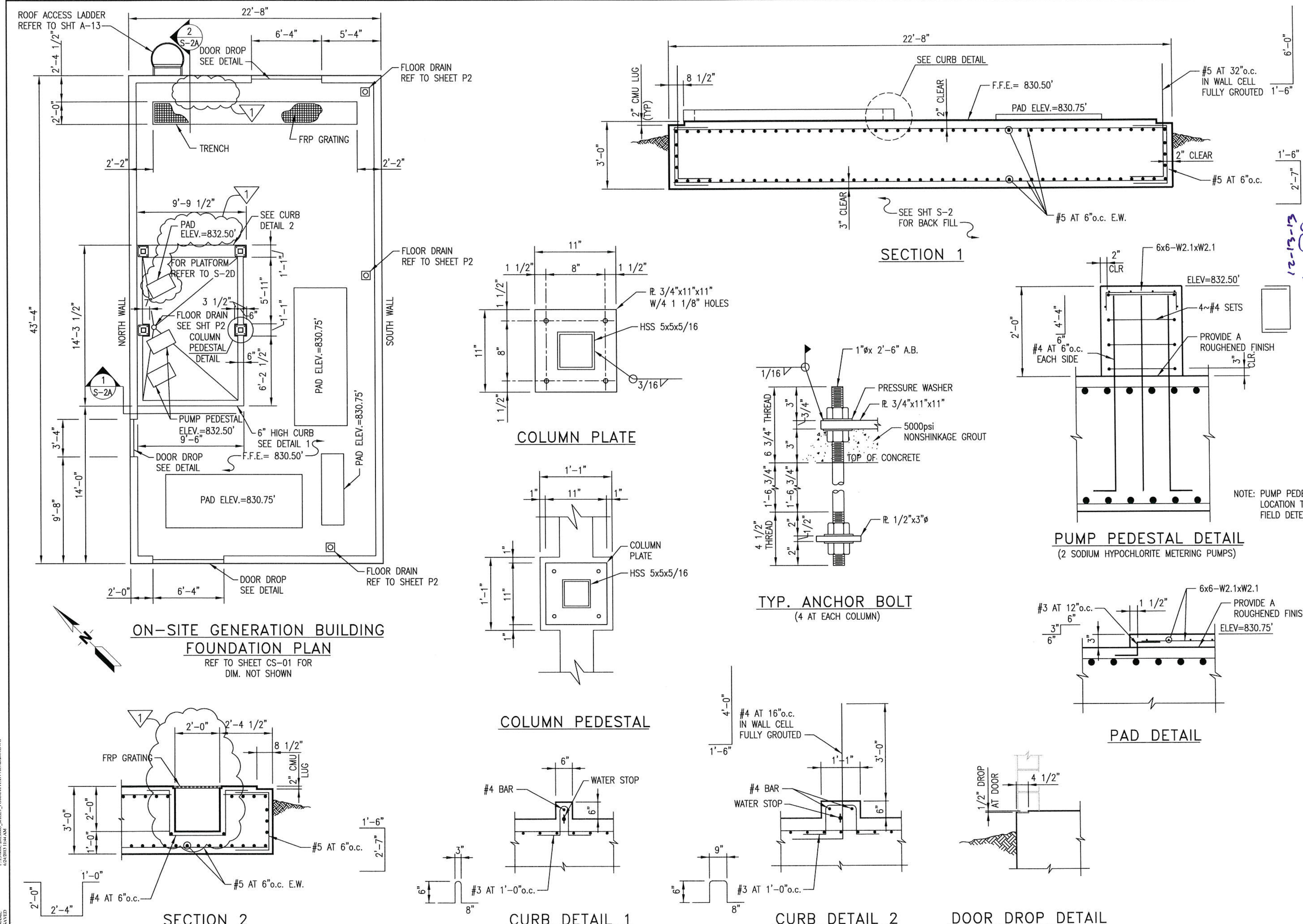

No.	Revision	By	Date
1	REVISION BY ADDENDUM NO.2	LAB	12-13-13

SEA STRUCTURAL ENGINEERING ASSOCIATES, INC.
CONSULTING ENGINEERS
(210) 735-9202 SAN ANTONIO, TX. 78229
TBPE FIRM REG. NO. F-199

STATE OF TEXAS — L.A. BORDUGO — 59151 — REGISTERED PROFESSIONAL ENGINEER
12-13-13

SAN ANTONIO WATER SYSTEM
NACO PUMP STATION IMPROVEMENTS PROJECT

ON-SITE GENERATION BUILDING FOUNDATION PLAN & SECTIONS & DETAILS

Scale: AS SHOWN
Designed by: L.A.B.
Drawn by: A.M.H.
Checked by: E.J.M.
Date: DECEMBER 2013
Project No. 13-060C
SAWS No. 12-6003

SHEET
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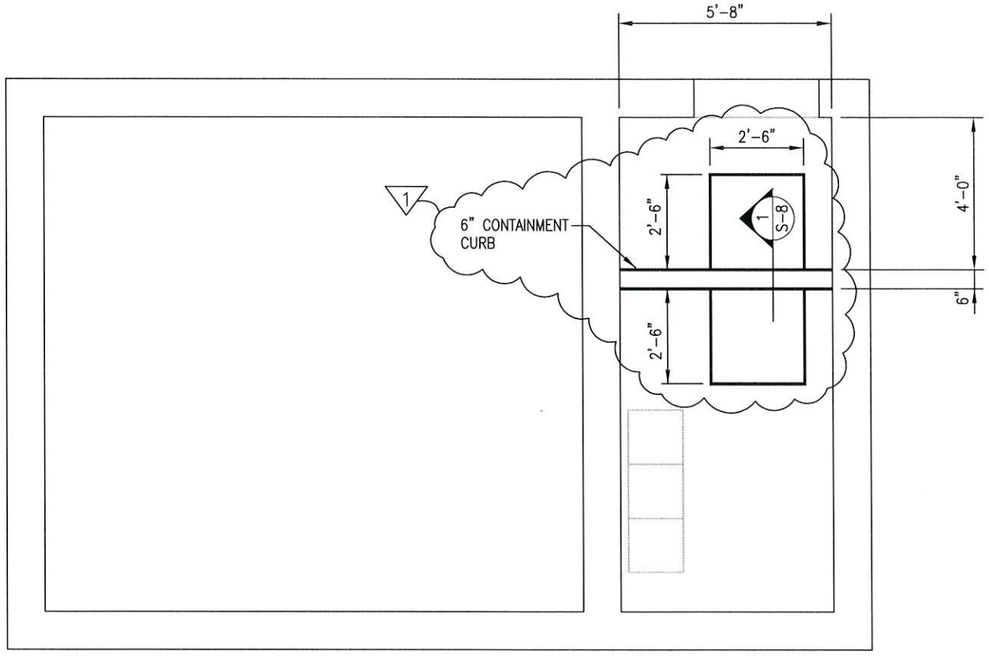
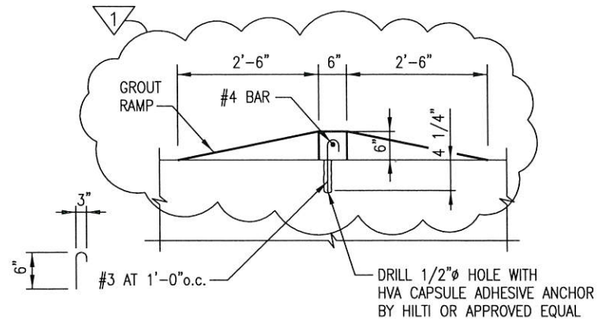


PROPOSED FLUORIDE BUILDING PLAN



CURB DETAIL 1

No.	Revision	By	Date
1	REVISION BY ADDENDUM NO.2	LAB	12-13-13

STRUCTURAL ENGINEERING ASSOCIATES, INC.
CONSULTING ENGINEERS
(210) 735-9202 SAN ANTONIO, TX. 78229
TBPE FIRM REG. NO. F-199

12-13-13

STATE OF TEXAS L.A. BERMUDO 59151 REGISTERED PROFESSIONAL ENGINEER

SAN ANTONIO WATER SYSTEM

NACO PUMP STATION IMPROVEMENTS PROJECT

PROPOSED FLUORIDE BUILDING PLAN VIEW

Scale:	AS SHOWN
Designed by:	L.A.B.
Drawn by:	A.M.H.
Checked by:	E.J.M.
Date:	DECEMBER 2013
Project No.	13-060C
SAWS No.	12-6003

SHEET

S-8

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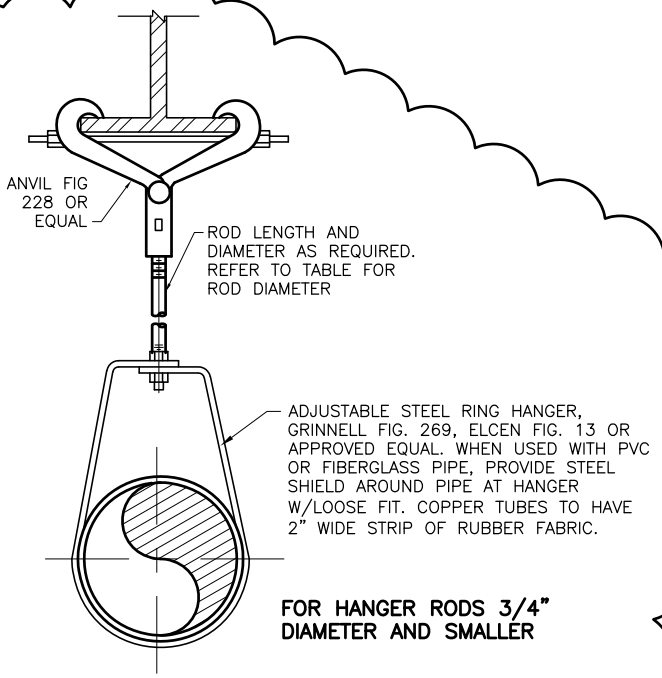
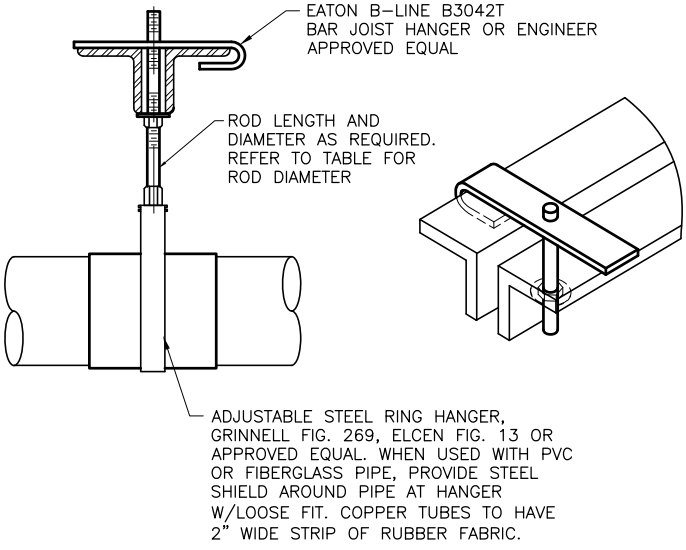


FOR HANGER RODS 3/4" DIAMETER AND SMALLER

PIPE HANGER WITH BEAM CLAMP



BAR JOIST HANGER

1

NOTE:
SEE SPECIFICATION SECTION 15062 FOR ROD SIZES, MINIMUM SPACING AND PIPE SUPPORT MATERIAL REQUIREMENTS.

PIPE HANGER

DETAIL BE

NTS –

CDM Smith

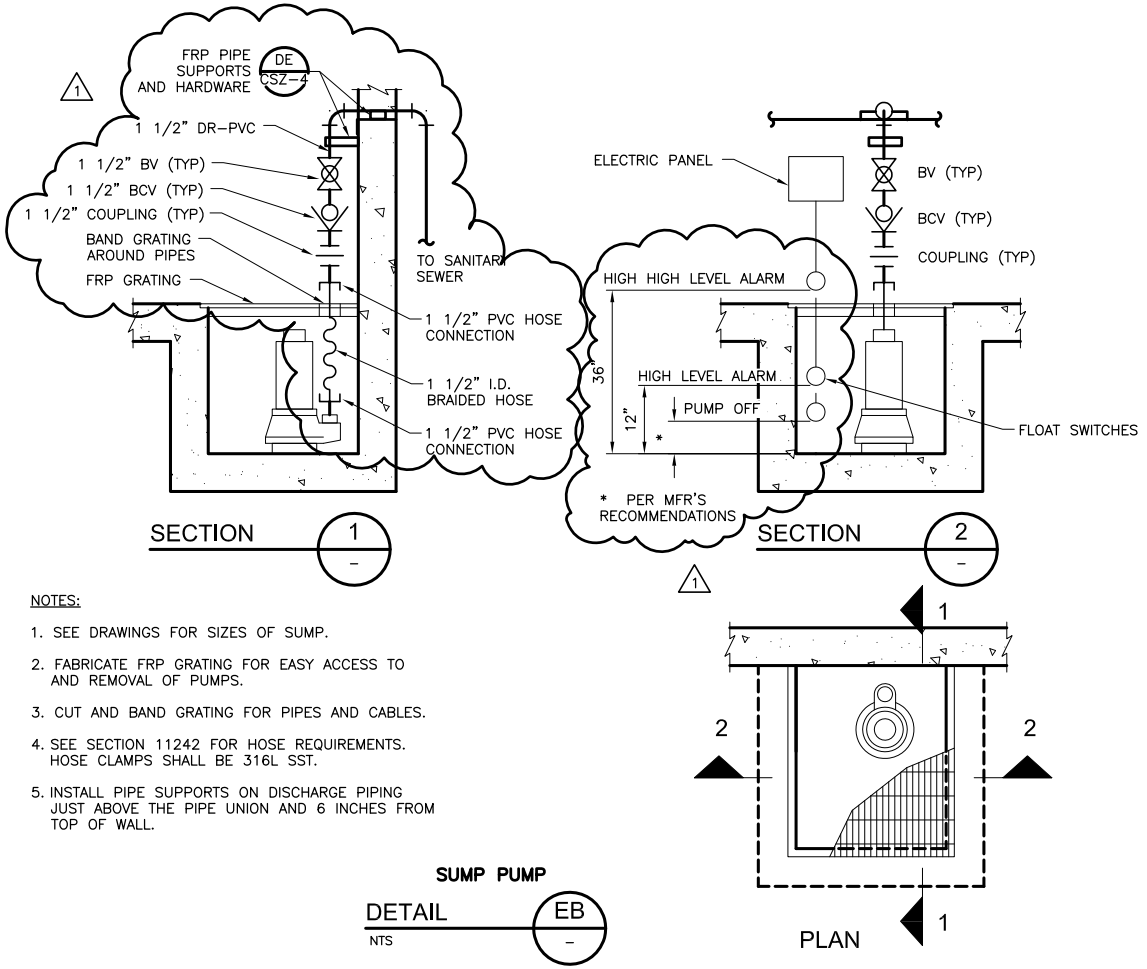
TBPE FIRM REGISTRATION NO F-3043

SAN ANTONIO WATER SYSTEM
NACO PUMP STATION
IMPROVEMENTS PROJECT

DATE 12/16/2013

SHEET NO.	LOCATION
CSZ-02	

ADDENDA NO.	EXHIBIT NO.
2	BE-CSZ-02



NOTES:

1. SEE DRAWINGS FOR SIZES OF SUMP.
2. FABRICATE FRP GRATING FOR EASY ACCESS TO AND REMOVAL OF PUMPS.
3. CUT AND BAND GRATING FOR PIPES AND CABLES.
4. SEE SECTION 11242 FOR HOSE REQUIREMENTS. HOSE CLAMPS SHALL BE 316L SST.
5. INSTALL PIPE SUPPORTS ON DISCHARGE PIPING JUST ABOVE THE PIPE UNION AND 6 INCHES FROM TOP OF WALL.

SUMP PUMP

DETAIL EB

NTS

CDM Smith

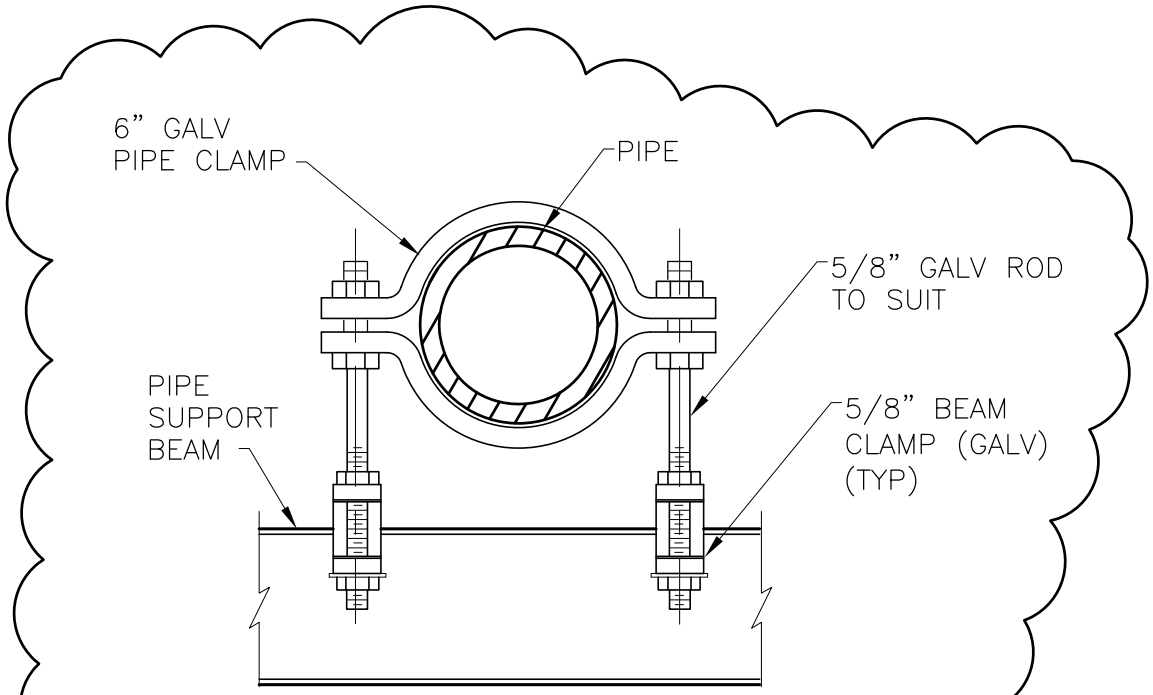
TBPE FIRM REGISTRATION NO F-3043

SAN ANTONIO WATER SYSTEM
NACO PUMP STATION
IMPROVEMENTS PROJECT

DATE 12/16/2013

SHEET NO.	LOCATION
CSZ-05	

ADDENDA NO.	EXHIBIT NO.
2	EB-CSZ-05



ADJUSTABLE PIPE SUPPORT

DETAIL EC

NTS –

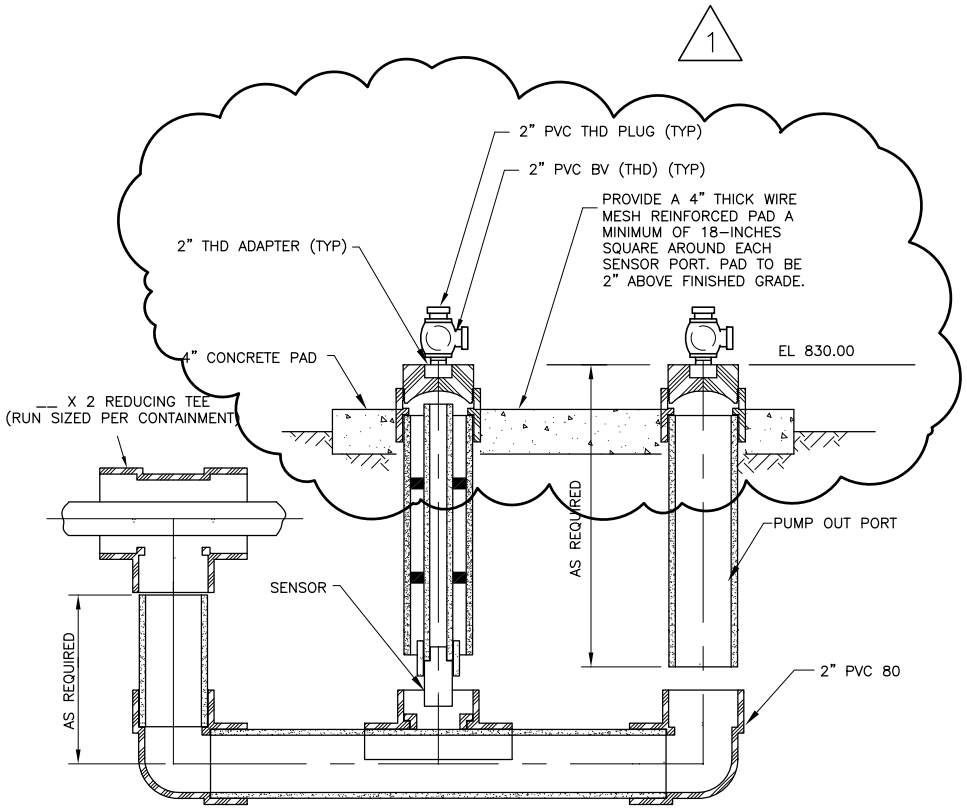
1

CDM Smith

TBPE FIRM REGISTRATION NO F-3043

SAN ANTONIO WATER SYSTEM
NACO PUMP STATION
IMPROVEMENTS PROJECT

DATE 12/16/2013	SHEET NO.	LOCATION	ADDENDA NO.	EXHIBIT NO.
	CSZ-05		2	EC-CSZ-05



UNDERGROUND LEAK DETECTION STA. W/ SENSOR AND PUMP OUT PORT

DETAIL FC
NTS –

CDM Smith TBPE FIRM REGISTRATION NO F-3043	SAN ANTONIO WATER SYSTEM NACO PUMP STATION IMPROVEMENTS PROJECT		ADDENDA NO.	EXHIBIT NO.
DATE 12/16/2013	SHEET NO.	LOCATION		
	CSZ-06		2	FC-CSZ-06

BAS GENERAL REQUIREMENTS

ADJUSTMENT OF SETPOINTS AND TIME DELAYS/CONSTANTS: ALL SETPOINTS, TIME DELAYS AND TIME CONSTANTS SHALL BE EXPOSED FOR ADJUSTMENT DURING TEST & BALANCE AND COMMISSIONING REGARDLESS IF THE VALUE IS MARKED (ADJ) IN THE SEQUENCE.

USER ADJUSTMENT OF SETPOINTS AND TIME CONSTANTS: ALL SETPOINTS AND TIME CONSTANTS SHALL BE ADJUSTABLE BY THE USER WITH APPROPRIATE LOGIN CREDENTIALS.

ALARMS : PROGRAM TWO LEVELS OF ALARMS; CRITICAL AND EQUIPMENT. CRITICAL ALARMS SHALL BE DEFINED AS THOSE ALARMS WHICH IF NOT RESPONDED TO WILL RESULT IN SUBSTANTIAL DAMAGE TO EQUIPMENT OR IMPACT PERSONNEL SAFETY. EQUIPMENT ALARMS SHALL BE DEFINED AS THOSE ALARMS WHICH ARE MORE ROUTINE WHICH CAN BE CLEARED DURING THE NEXT SCHEDULED MAINTENANCE VISIT. COORDINATE WITH OWNER AS REQUIRED.

DEAD-BANDS: ALL HEATING AND COOLING SETPOINTS SHALL BE SEPARATED BY A MINIMUM OF 5F (ADJ)

GLOBAL POINTS: OUTSIDE AIR TEMPERATURE AND HUMIDITY SHALL BE MEASURED AT THE BUILDING AND USED GLOBALLY.

SYSTEM DESIGN: THE BAS SHALL MONITOR ALL POINTS AS INDICATED ON THE CONTROL DIAGRAMS AND ON THE PLANS. IF ADDITIONAL POINTS ARE NEEDED TO ACHIEVE A WORKING SYSTEM OR SEQUENCE OF OPERATION THE CONTROLS CONTRACTOR SHALL PROVIDE THOSE DEVICES, INSTALLATION, PROGRAMMING AND GRAPHIC GENERATION AS REQUIRED AND WITHOUT ADDITIONAL COST TO THE OWNER.

OWNERS PROGRAM REQUIREMENTS:

COOLING SETPOINT; 75F
HEATING SETPOINT; 55F
UNOCCUPIED SETPOINTS:

EQUIPMENT LABELS: DESIGNATION OF EQUIPMENT SHALL FOLLOW STANDARDS INDICATED IN THE SPECIFICATION.

LIST OF ACRONYMS FOR CONTROL DIAGRAMS

AI	ANALOG INPUT
AO	ANALOG OUTPUT
ACT	ACTUATOR
BI	BINARY INPUT
BO	BINARY OUTPUT
CSR	CURRENT SENSING RELAY
DX	DIRECT EXPANSION
DPS	DIFFERENTIAL PRESSURE SWITCH
RTU	ROOF TOP UNIT
S/S	START/STOP
TS	TERMINAL STRIP

STATE OF TEXAS
DEAN T. ALDERSON
54441
LICENSED
PROFESSIONAL ENGINEER
Alderson & Associates, Inc.
F-1008

POINT LABEL LEGEND

DOUBLE LABEL TYPE

POINT DESCRIPTOR	
INPUT/OUTPUT TYPE (AO,AI,BO,BI)	FIELD DEVICE

TRIPLE LABEL TYPE

POINT DESCRIPTOR		
INPUT/OUTPUT NAME	INPUT/OUTPUT TYPE (AO,AI,BO,BI)	FIELD DEVICE
INPUT/OUTPUT NAME	INPUT/OUTPUT TYPE (AO,AI,BO,BI)	FIELD DEVICE

Alderson & Associates, Inc.
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7700 Torino
Suite 101
San Antonio, TX 78229
Phone (210) 614-1110
Fax (210) 615-8549
F-1008

PROJECT # 12-36

SAN ANTONIO WATER SYSTEM

NACO PUMP STATION IMPROVEMENTS PROJECT

MECHANICAL CONTROL DIAGRAMS

Scale:	AS SHOWN
Designed by:	HMC
Drawn by:	EGM
Checked by:	
Date:	DECEMBER 2013
Project No.	11216
SAWS No.	12-6003

SHEET
M10

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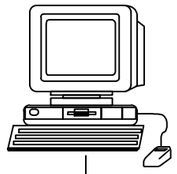
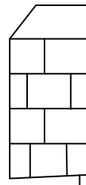
NETWORK DIAGRAM

REMOTE VPN ACCESS
CONTROL CONTRACTOR TO PROVIDE VIEW-ONLY USER ACCOUNT FOR ENGINEER'S USE DURING THE ENTIRE WARRANTY PERIOD. OWNER TO PROVIDE VPN OR OTHER REMOTE ACCESS AS NEEDED.

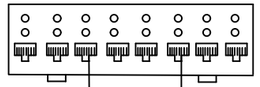
FACILITY ENGINEERS DESKTOP COMPUTER WORKSTATION (EXISTING)



FIREWALL

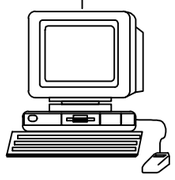


8 PORT SWITCH PROVIDED BY CONTROLS CONTRACTOR



E1

SAN ANTONIO WATER SYSTEM



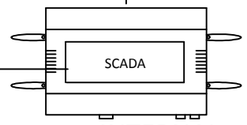
WEB-BASED WORKSTATION (EXISTING)

EOL

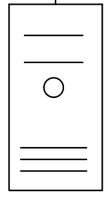
ELECTRICAL BUILDING

VAULT

OGS BUILDING



INTERNAL STATIC IP



RACK MOUNTED BAS SERVER AND TREND ARCHIVE STORAGE (EXISTING)

MODBUS

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PROJECT # 12-36

SAN ANTONIO WATER SYSTEM
NACO PUMP STATION IMPROVEMENTS PROJECT

MECHANICAL CONTROL DIAGRAMS

Scale:	AS SHOWN
Designed by:	HMC
Drawn by:	EGM
Checked by:	
Date:	DECEMBER 2013
Project No.	11216
SAWS No.	12-6003

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M11

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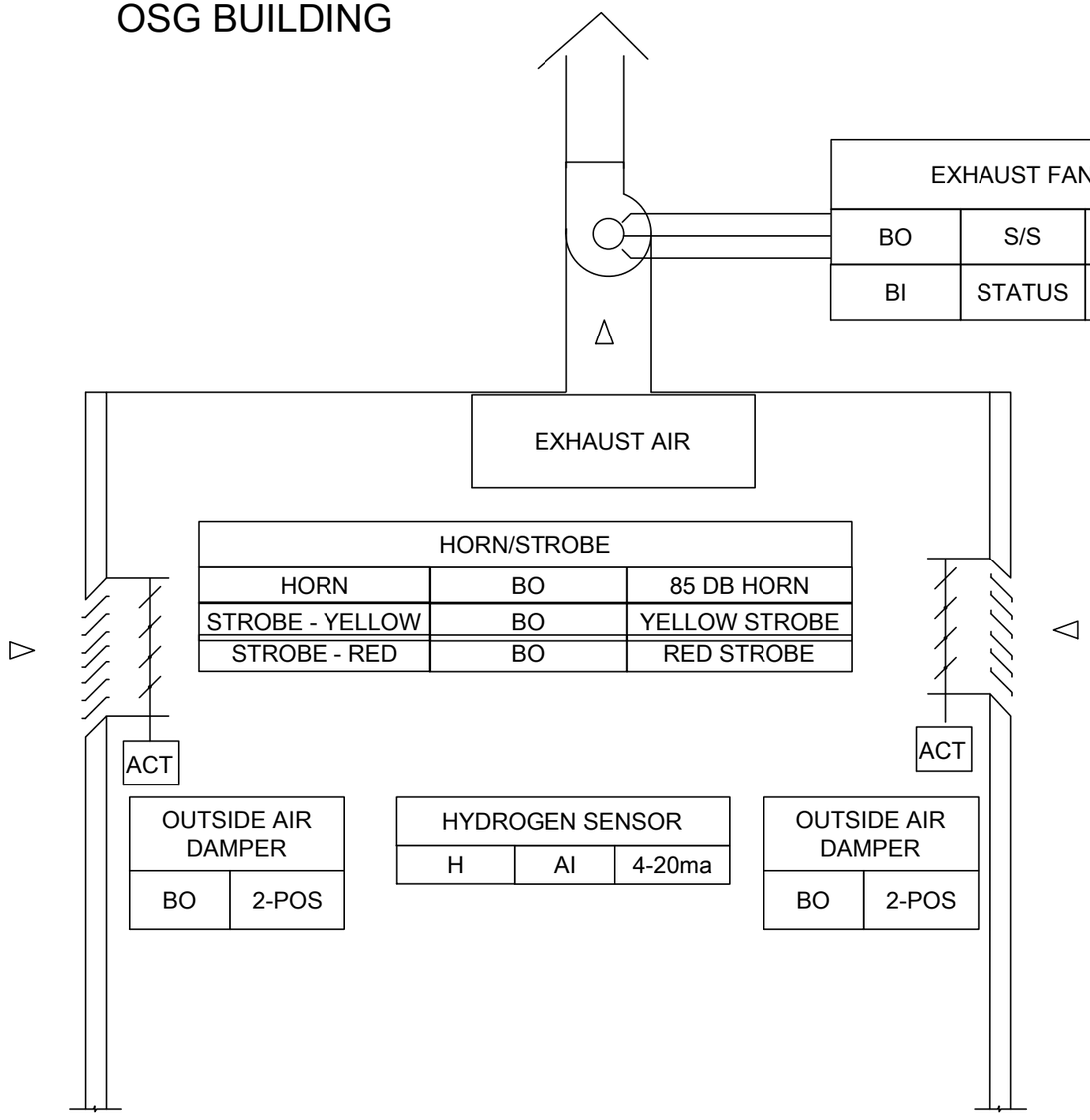
OSG BUILDING



SEQUENCE OF OPERATION:

THE BAS SHALL CONTINUOUSLY MONITOR THE HYDROGEN SENSOR. ANYTIME THE HYDROGEN LEVEL EXCEEDS 1%, THE BAS SHALL AUTOMATICALLY OPEN BOTH OUTSIDE AIR DAMPERS, START BOTH THE EXHAUST FANS, ENABLE THE YELLOW WARNING LIGHT AND ENABLE THE HORN. IF THE HYDROGEN LEVEL EXCEEDS 2% THE BAS SHALL ALSO ENABLE THE RED WARNING LIGHT.

THE OUTSIDE AIR DAMPERS SHALL REMAIN OPEN AND THE EXHAUST FANS SHALL RUN UNTIL THE HYDROGEN LEVEL DROPS BELOW 1%.

PROVIDE SBS
-H2 HYDROGEN SENSOR WITH POWER SUPPLY OR EQUAL AS APPROVED BY THE ENGINEER.

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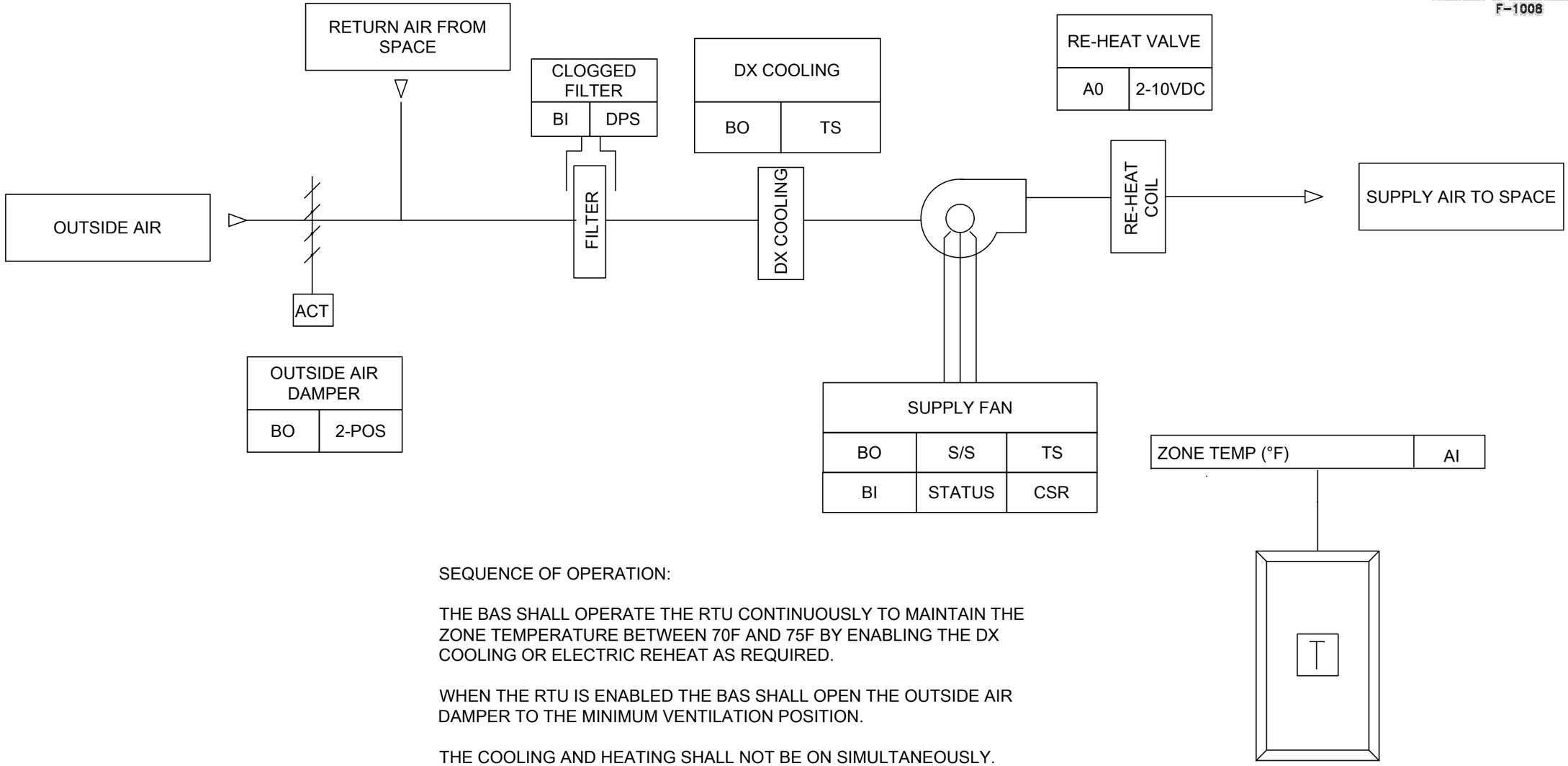
ROOT TOP UNITS



SEQUENCE OF OPERATION:

THE BAS SHALL OPERATE THE RTU CONTINUOUSLY TO MAINTAIN THE ZONE TEMPERATURE BETWEEN 70F AND 75F BY ENABLING THE DX COOLING OR ELECTRIC REHEAT AS REQUIRED.

WHEN THE RTU IS ENABLED THE BAS SHALL OPEN THE OUTSIDE AIR DAMPER TO THE MINIMUM VENTILATION POSITION.

THE COOLING AND HEATING SHALL NOT BE ON SIMULTANEOUSLY.

THE BAS SHALL MONITOR THE DIRTY FILTER SWITCH.

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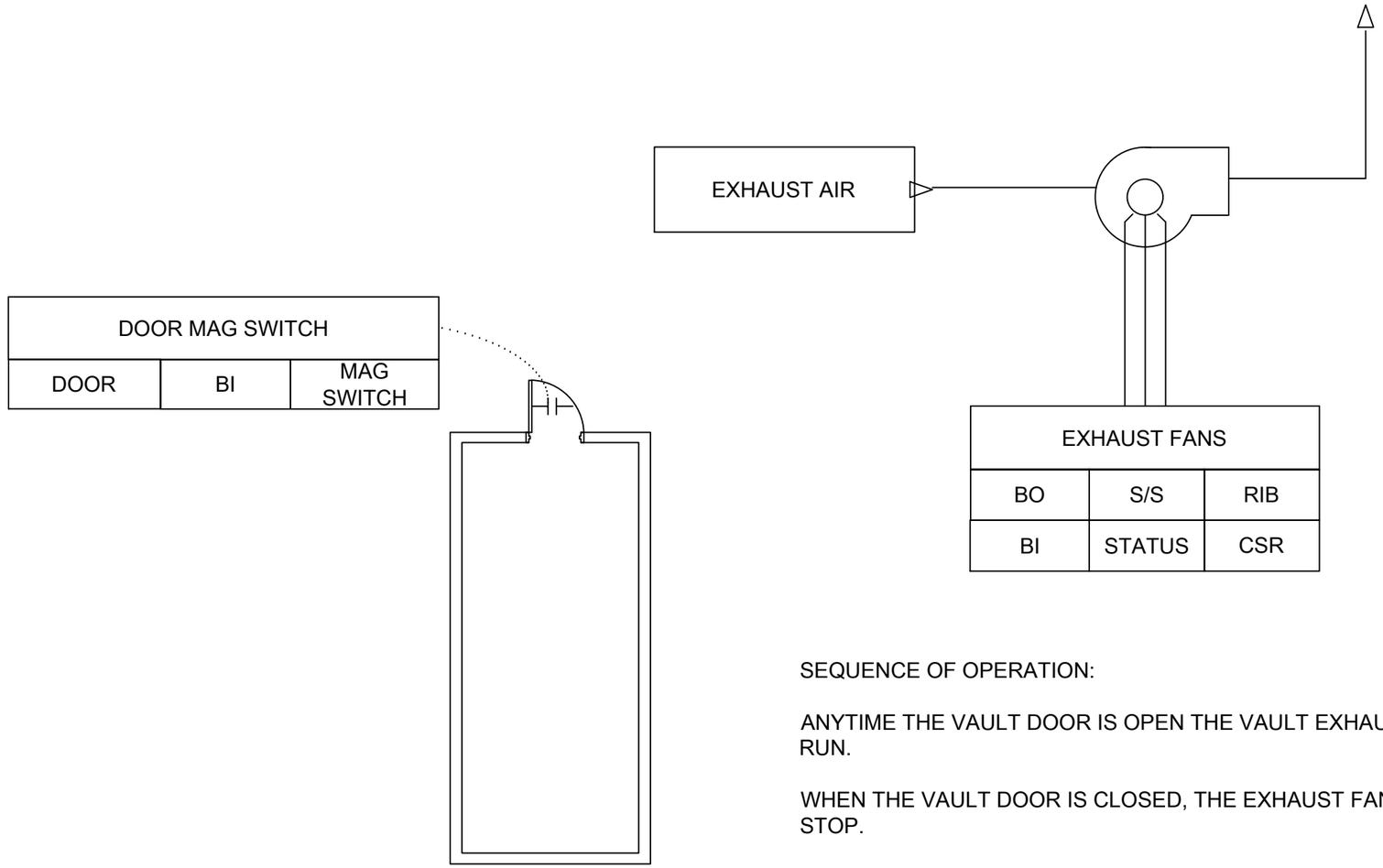
EXHAUST FAN - VAULT



SEQUENCE OF OPERATION:

ANYTIME THE VAULT DOOR IS OPEN THE VAULT EXHAUST FAN WILL RUN.

WHEN THE VAULT DOOR IS CLOSED, THE EXHAUST FAN SHALL STOP.

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