



**Turtle Creek No. 3 Primary Pump Station Project**  
**Solicitation Number: CO-00404-SM**  
**Job No.: 21-6001**

**ADDENDUM NO. 5**  
**September 22, 2021**

To Respondent of Record:

This addendum, applicable to work referenced above, is an amendment to the bid proposal, plans and specifications and as such will be a part of and included in the Contract Documents. Acknowledge receipt of this addendum by entering the Addendum number and issue date on the space provided in submitted copies of the Respondent Questionnaire.

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| <b>RESPONSES TO QUESTIONS</b> |
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- 1. Question: We have concerns about Tropical Storm Nicholas and how it may impact our travel into San Antonio tomorrow morning. The Tropical Storm should make landfall near Victoria this evening which may make it difficult to travel out in the AM with winds up to 30 – 40 MPH and rainfall amounts projected to be 8” plus. This may also impact flights in and out of the region. If neither of us are able to make it tomorrow, would it be possible to have another opportunity to visit the site?**

*Response: A second site visit will not be scheduled.*

- 2. Question: Would it be possible to have a site visit on Thursday 9/9, day before the pre-bid?**

*Response: A second site visit will not be scheduled.*

- 3. Question: The bid documents reference a page limit. Can you provide total page count allowed and what is included?**

*Response: Refer to the SIR and SIR-12, Section F “Format of Proposals” for the details of the required proposal formatting for each section and refer to page CH-1 of the solicitation for the required documents.*

- 4. Question: On the Respondent’s Proposal Checklist document under File 2, the first checkbox is “Proposal”. What specific document does this reference or was it meant to be combined with item 2 which is “Checklist” to create “Proposal Checklist” which is Item Number 1 for File 3?**

*Response: File 2 is requesting the Price Proposal (page 78 through 80 of the solicitation) and the Respondent’s Proposal Checklist (CH-1, page 74 of the solicitation).*

- 5. Question: Is there a 3D Model that will be made available to the contractor after award?**

*Response: If requested, a 3D model can be provided to the Contractor after award, however the model would be for informational purposes only.*

- 6. Question: The contract documents ask us to submit all critical submittals in 60 days and that is not realistic considering it usually takes 8 to 12 weeks to get submittals from suppliers after we have an executed contract. We cannot issue the contract until we get our contract executed with SAWS. We would recommend 90 days for critical submittals.**

*Response: Critical submittals as described in Section SC-2 Special Conditions may be submitted within 90 days of construction notice-to-proceed. Refer to Item No. 7 in the CHANGES TO THE SPECIFICATIONS section of this addendum.*

- 7. Question: Will Contractor be provided additional time if there are delays to delivery of equipment beyond our control, such as shortage of materials due to COVID 19? We will do our best to mitigate the delays but we cannot be help responsible for delays caused by circumstances that are beyond our control.**

*Response: Refer to GC-48, General Conditions Section 8.4 which stipulates “The Contract Time may only be changed by a Change Order duly executed by both Contractor and Owner.”*

- 8. Question: Will SAWS please consider adding a contingency item of \$1,000,000 for cost escalation? This escalation item will be required to provide bid day backup and January pricing from suppliers to release any escalation charges.**

*Response: No contingency items will be allowed in submitted bids.*

- 9. Question: Has coordination with CPS begun? AT&T?**

*Response: Coordination with CPS and AT&T was initiated during the design of the Project.*

- 10. Question: Can you please consider pushing the bid date back one to two weeks?**

*Response: The bid date shall remain the current September 29<sup>th</sup>, 2021 deadline.*

- 11. Question: Will SAWS also consider contract extensions for items that have a change in lead time from bid day to contract award?**

*Response: Refer to GC-48, General Conditions Section 8.4 which stipulates “The Contract Time may only be changed by a Change Order duly executed by both Contractor and Owner.”*

- 12. Question: Will SAWS please clarify percent of time available or required for key staff? An example is a contractor may deem that a project manager is only required  $\frac{3}{4}$  time of the contract duration yet the documents indicate that SAWS wants that person 100% of the time.**

*Response: Refer to SIR-2, Section D “Definitions” which stipulates “Contractors must use their best judgement to ensure proposed Key Personnel remain effectively involved in the project for its entire duration.”*

- 13. Question: Sheet C-1: What is the depth of the sewer line that is to be removed?**

*Response: The average depth of the existing sanitary sewer line is 10 feet. Depths of existing utilities must be field verified by the Contractor at least 1 week prior to construction, per SAWS Standard General Construction Notes, Note 4 on Drawing G-2.*

**14. Question: Sheet C-5: What is the anticipated completion date for the Turtle Creek 42” line by others?**

*Response: Substantial completion for the Turtle Creek 42-inch transmission main is anticipated to take place in November 2022. Refer to Item No. 6 in the CHANGES TO THE SPECIFICATIONS section of this addendum.*

**15. Question: Sheet C-14: Is there a staging area for the offsite culvert work at the apartment complex?**

*Response: Proposed temporary construction easement for the culvert work at the apartment complex is indicated on Drawing C-14. No other staging area at the apartment complex will be provided.*

**16. Question: Can the apartment complex work be extended from 2 weeks to 2 months?**

*Response: Work at the apartment complex will remain limited to 2 weeks. No changes to the specifications will be made.*

**17. Question: Sheet P-9: Is the proximity of the electrical building to the AC water line a concern regarding abatement?**

*Response: Excavation and construction regarding the AC water line will need to abide by SAWS Standard Specification Item No. 3000, including developing an abatement plan if the AC water line is exposed and/or damaged during construction. Bracing of the water line will need to be dictated by the Contractor.*

**18. Question: Sheet PS-1: Does the fire hydrant at the end of the pump station discharge header need to be rated for 250 psi?**

*Response: The fire hydrant shall be rated for 250 psi and conform to SAWS Standard Specification Item No. 834. Refer to Item No. 4 in the CHANGES TO THE PLANS section of this addendum.*

**19. Question: Sheet CH-1: Why are the stairs leading to the tank area “by others”?**

*Response: The note is to specify that the stairs shall be provided by the Contractor and not by the Tank Manufacturer and shall conform to Section 05 51 00 Metal Stairs.*

**20. Question: DWG. SD2 DETAIL 3 HAS DIFFERENT MODEL ARV'S THAN IS SHOWN IN SPEC 40 05 78.2.01.E.5. WHICH IS CORRECT?**

*Response: All ARVs shall conform to Section 40 05 78 Air Release and Air and Vacuum Valves.*

**21. Question: DWG'S P13,14, SD2 DET 3&4 AND DD-902-01 PG 2 SHOW A "FLOOR DRAIN W/STAINLESS STEEL SCREE. HOWEVER, GENERAL NOTE 5 ON DWG'S P13 & 14 REQUIRES THESE DRAIN LINES TO BE RUN TO THE CONCRETE INLET. IS THE "FLOOR DRAIN" REQUIRED IF BEING RUN TO THE INLET? IF NOT, WHAT IS THE MAKE/MODEL OF THE "FLOOR DRAIN W/STAINLESS STEEL SCREEN" AT THE END OF THE WELL AIR RELEASE AND BREATHER VENT LINES?**

*Response: Floor drain refers to the discharge piping of the ARV and stainless screens must be provided at the discharge of the drain line. Refer to Valmatic VentSafe® Security Cage or approved equal.*

- 22. Question: SPEC 40 05 64.2.01.B CALLS FOR BUTTERFLY VALVES TO BE WAFER BODY STYLE. DWG SD3 DETAIL 5 SHOWS A TYPICAL BURIED BUTTERFLY VALVE AS FLANGED. ARE ALL BURIED VALVES TO BE FLANGED AND ABOVE GRADE BFV'S TO BE WAFER STYLE?**

*Response: All butterfly valves shall have flanged ends. Refer to Item No. 8 in the CHANGES TO THE SPECIFICATIONS section of this addendum.*

- 23. Question: WE FIND NO SPECIFICATION FOR THE 4" PVC PERFORATED UNDERDRAIN SHOWN ON DWG T-2. IS SDR35 ACCEPTABLE?**

*Response: SDR35 is acceptable. Refer to Item No. 12, 13, and 14 in the CHANGES TO THE SPECIFICATIONS section of this addendum.*

- 24. Question: DWG T-2 SHOWS WHAT APPEARS TO BE 4" PVC TEES SIDE BY SIDE AT 9EA LOCATIONS AROUND THE FOUNDATION PERIMETER DRAIN LINE, BUT NO DETAIL IS FOUND. WHAT ARE THE REQUIREMENTS FOR THESE DOUBLED UP TEES OR ARE THEY MEANT TO BE DBL CLEANOUTS?**

*Response: Side-by-side PVC tees around the perimeter of the tank are double cleanouts.*

- 25. Question: SPECIFICATION 33 01 02.2.02.A CALLS FOR SMALL DIAMETER STAINLESS STEEL PIPE TO BE SCH40. HOWEVER, DWG T9 DETAIL 6 CALLS FOR 1/2" SCH80 S.S. PIPE. SHOULD THIS BE SCH40 PER THE AFOREMENTIONED SPEC OR SCH80 JUST FOR THIS DETAIL?**

*Response: Schedule 80 stainless steel pipe should be provided per Drawing T-9 Detail 6. Refer to Item No. 10 and 14 in the CHANGES TO THE SPECIFICATIONS section of this addendum.*

- 26. Question: DWG'S P1 & T-9 SHOW A 1/2" SAMPLE LINE RUNNING FROM THE GST THROUGH THE SAMPLE WATER PUMP TO THE CHEM. BUILDING. HOWEVER, DWG SD6 SHOWS A 1" SAMPLE LINE. WHICH IS CORRECT?**

*Response: All sample piping shall be 1/2" per Drawings P-1 and T-9. Refer to Item No. 12 in the CHANGES TO THE PLAN SECTION of this addendum.*

- 27. Question: DWG'S PS1 WORK NOTE 18 AND DWG PS2 WORK NOTE 21 CALL FOR RESTRAINED FLEXIBLE COUPLINGS. THE ONLY FLEXIBLE COUPLING SPECIFIED IS IN SECTION 33 11 13.13.2.02.L AND IS NOT A RESTRAINED COUPLING. FURTHER, THE RESTRAINED COUPLINGS ON DWG'S PS1 & 2 APPEAR TO BE SHOWN AS DEPEND-O-LOK TYPE. WHAT TYPE OF COUPLING IS REQUIRED AT THIS LOCATION?**

*Response: Note by Symbol 18 on Drawing PS-1 and Note by Symbol 21 on Drawing PS-2 have been modified to specify a flanged coupling adapter which must conform to Section 33 11 13.13 Steel Pipe (AWWA C200). Refer to Item No. 4 and 5 in the CHANGES TO THE PLANS section of this addendum.*

- 28. Question: DWG SD1 DETAIL 4 SHOWS A ZURN MODEL 375 BACKFLOW PREVENTER. HOWEVER, 2-1/2" IS THE SMALLEST SIZE THIS MODEL IS MADE. WHAT OTHER BACKFLOW PREVENTER IS ACCEPTABLE FOR THE 2" SERVICE LINE?**

*Response: Refer to Section 40 05 43 Miscellaneous Valves.*



- 29. Question: DWG P1 & PL2 INDICATE THE SS LINE FRM THE ELEC BLDG (SS LINE A) IS TO BE 4". DWG P10 INDICATES IT IS TO BE 6" SCH80 PVC WITH DOUBLE CONTAINMENT FITTINGS. WHICH IS CORRECT?**

*Response: Sanitary sewer line shall be double-containment schedule 80 PVC piping per Drawing P-10. Refer to Item No. 13 and 14 in the CHANGES TO THE PLANS SECTION of this addendum.*

- 30. Question: THE WORK NOTES ON DWG P10 CONNECTIONS FOR THE SANITARY SEWER REFERENCE DD-854-02. WE FIND NO DOUBLE CONTAINMENT DETAILS IN DD-854-02. PLEASE PROVIDE DETAILS ON THE CONFIGURATION OF THESE TERMINATIONS.**

*Response: Standard termination fittings should be utilized when transitioning between single walled pipe to double-walled containment piping.*

- 31. Question: WHAT IS THE ACCEPTABLE METHOD OF CONNECTING THE 6" DPVC SS TO THE EXISTING 8" SDR26 SS LINE SINCE THERE ARE NO STD FITTINGS MADE FOR CONNECTION OF DOUBLE CONTAINMENT PIPE TO SDR26 PVC.**

*Response: A Schedule 80 to Schedule 40 DPVC termination fitting can be procured to then connect to the existing SDR 26 PVC sanitary sewer using a wye fitting.*

- 32. Question: SHOULD THERE BE A MANHOLE AT THE CONNECTION OF THE NEW DPVC SS LATERAL TO THE EXIST. 8" LINE SO THE REQUIRED LOW POINT LEAK DETECTION DEVICE CAN BE VIEWED OR IS AN AUTOMATIC LEAK DETECTION SYSTEM REQUIRED?**

*Response: Visual leak detection can be provided utilizing a clear DPVC termination fitting per Section 33 05 01.10 Polyvinyl Chloride (PVC) Pressure Pipe and Fittings. No manhole is required.*

- 33. Question: WHERE SHOULD THE DOUBLE CONTAINMENT END AT THE BUILDING? PRIOR TO THE 3" HUB DRAIN CONNECTION (NOT SHOWN ON P10) AND THE DGCO OR SHOULD IT CONTINUE UP THROUGH THE BLDG FLOOR AND INCLUDE THE VENT PIPING?**

*Response: Double containment piping should terminate prior to the 3" hub drain connection and utilize the connection described on Drawing P-10. Double containment piping is not required for the vent piping.*

- 34. Question: THE SUMP PUMP DISCHARGE FROM THE ELECTRIC BLDG IS SHOWN ON DWG P1 AS 2" DIAMETER. DWG PL2 SHOWS THIS LINE AS 1". WHICH IS CORRECT AND SHOULD THIS ALSO BE DPVC?**

*Response: Sump pump discharge from electrical building shall be 2" double-walled PVC containment piping as described on Drawing P-10. Drawing 1/PL-2 states the sump pump discharge shall be 2".*

- 35. Question: WHAT TYPE OF "FLEXIBLE COUPLING" IS REQUIRED FOR THE HYDROGEN VENT BLOWER LINES SHOWN ON DWG CH9 DETAIL 1?**

*Response: Standard stock flexible couplings, similar to Fernco-style flexible couplings, are acceptable.*

- 36. Question: DWG I-11 SHOWS A BUTTERFLY VALVE AT THE HYDROGEN BENT BLOWERS DISCHARGE THAT ARE NOT SHOWN ON DET 1 DWG CH9. DWG. I-11 DOES NOT SHOW THE CHECK VALVE THAT IS SHOWN ON DET 1 OF DWG CH9. ARE BOTH REQUIRED AND IF SO, WHAT ARE THE SPECIFICATIONS FOR THESE VALVES?**

*Response: Both valves are required per Drawing I-11 and 1/CH-9. Refer to Section 40 05 43 Miscellaneous Valves and refer to Item No. 7 in the CHANGES TO THE PLANS SECTION of this addendum. Refer to Item No. 11 in the CHANGES TO THE SPECIFICATIONS SECTION of this addendum.*

- 37. Question: DWG CH-1 SHOWS THE SHC LINE TO THE ABOVE GROUND INJECTION POINT AS 1" WITH NO CONTAINMENT PIPE SIZE. DWG'S P1 & CH5 SHOW THIS LINE TO BE 3" BH. FURTHER, SPEC. 33 01 02.2.04 INDICATES THE INJECTION ASSEMBLY IS TO BE 3". WHICH IS CORRECT?**

*Response: Sodium hypochlorite discharge piping shall be 3" braided hose within 6" PVC conduit piping per Drawing CH-5. Refer to Item No. 15 in the CHANGES TO THE PLAN SECTION of this addendum.*

- 38. Question: DWG P1 & CH4 SHOW THE SAM LINES AS 1/2". DWG SD6 DET 1 SHOWS THEM AS 1". WHICH IS CORRECT?**

*Response: All sample piping shall be 1/2" per Drawings P-1 and T-9. Refer to Item No. 12 in the CHANGES TO THE PLAN SECTION of this addendum.*

- 39. Question: DWG CH4 SHOWS NOTES INDICATING " FROM BRINE TANK" & 2-B-PVC, BUT NOTHING IS SHOWN. CAN YOU PROVIDE THE FULL SECTION DWG TO SHOW THE MISSING PIPE?**

*Response: Refer to Item No. 6 in the CHANGES TO THE PLAN SECTION of this addendum.*

- 40. Question: DWG CH9 SHOWS THE SOD HYPO CONTAINMENT AREA SUMP PUMP PIPING AS 4" PTFE (NO SPEC'S PROVIDED AND IS NOT READILY AVAILABLE IN 4") WITH A QUICK CONNECT & BALL VALVE. DWG'S, P12 & PL3 SHOWS THIS SUMP PUMP LINE AS 2" (PRESUMED STD DWVB PVC PLUMBING PIPE) WITH NO VALVES. WHICH IS CORRECT?**

*Response: Modifications to Detail 2/CH-9 have been made. The above-grade sump pump discharge piping shall be 4" PVC with appurtenances as shown and properly insulated per Section 44 00 00.02. Refer to Item No. 7 in the CHANGES TO THE PLAN SECTION of this addendum.*

- 41. Question: GENERAL NOTE 6 ON DWG CH8 INDICATES " ALL ABOVE GRADE PIPING ASSOCIATED WIT THE HYDROFLOUROSILICIC ACID SYSTEM SHALL BE DOUBLE WALLED CONTAINMENT PIPING". HOWEVER, NONE OF THE PIPING SHOWN ON CH7 OR 8 APPEAR TO BE DOUBLE WALLED. 1) SHOULD NOTE 6 READ "ALL UNDERGROUND PIPING SHALL BE DOUBLE WALLED"? 2) IF DOUBLE WALLED CONTAINMENT PIPE IS REQUIRED FOR ABOVE GROUND, WOULD THIS ALSO APPLY TO THE VENTS AND OVERFLOW TO ATMOSPHER FOR THIS SYSTEM? 3) SHOULD THE PRODUCT PIPE FOR THE HFS SYSTEM BE PVC AS NOTED ON DWG CH7 DETAIL 3 OR CPVC AS NOTED ON CH8 DETAIL 1?**

*Response: All above grade piping associated with the hydrofluorosilicic acid system shall be double-walled CPVC containment piping per Note 6 on Drawing CH-8. All vents and overflow piping to be single-walled CPVC piping.*

**42. Question: SHOULD THE 3" CONTAINMENT PIPE FOR 1/2" HFS TUBING BE PVC OR CPVC?**

*Response: The 3" containment piping for the 1/2" HFS tubing shall be CPVC per Section 33 05 01.10 Polyvinyl Chloride (PVC) Pressure Pipe and Fittings.*

**43. Question: DWG SD2 DETAIL 1 SHOWS 1/4" PIPE & VALVES FOR THE GAUGES COMING OFF OF THE STEEL PIPE. DWG I-14 SHOWS 1/2" PIPE & VALVES PRESUMABLE OFF OF THE STEEL PIPE SINCE 1/2" WELD-O-LETS ARE NOTED. WHICH IS CORRECT AND SHOULD STAINLESS PIPE & VALVES BE USED AT THE PVC CHEMICAL LINES?**

*Response: Drawing 1/SD-2 shall be utilized for all installations when referenced, such as Drawing PS-1. Drawing A/I-14 shall be utilized for all other installations when referenced. For PVC chemical lines, stainless steel piping and valves shall be used per Section 33 01 02 Miscellaneous Piping and Appurtenances.*

**44. Question: DWG PL3 NOTE 18 CALLS FOR 3/4" YARD HYDRANTS. THE SMALLEST SIZE LISTED IN SPECIFICATION 33 01 02.2.17 IS 1". WHAT IS THE SPECIFICATION FOR THE 3/4" YARD HYDRANTS OR SHOULD THE HYDRANTS ON PL3 BE 1"?**

*Response: Note by Symbol 18 has been modified to refer as 3/4" hose bib connections per Drawing 4/PL-1 and conform to Section 33 01 02 Miscellaneous Piping and Appurtenances. Refer to Item No. 16 in the CHANGES TO THE PLAN SECTION of this addendum.*

**45. Question: DWG PL1 DETAIL 4 NOTE 2 CALLS FOR 50'0" OF HOSE WITH THE PIPE RACKS, BUT ALSO NOTES "ENGINEER TO VERIFY" WITH OWNER. WHAT LENGTH OF HOSE & SIZE(S) SHOULD BE SUPPLIED?**

*Response: 50'-0" of hose is acceptable.*

**46. Question: SEVERAL NOTES ON DWG P9 INDICATE THE PW SHALL BE SCH40 PVC PIPE. SPECIFICATION 33 05 01.10.3.04 PIPE SCHEDULE INDICATES THAT ALL PW PIPE 1/2" - 3" SHALL BE SCH 80 PVC. WHICH IS CORRECT?**

*Response: Schedule 40 PVC pipe is acceptable for potable water piping as noted in Drawing P-9. Refer to Item No. 12 in the CHANGES TO THE SPECIFICATIONS SECTION of this addendum.*

**47. Question: IS THE 2" SUMP PUMP DISCHARGE PIPE FROM THE ELEC. BLDG TO BE CONSIDERED SS FORCEMAIN AND THEREFORE BE TYPE L COPPER OR CAN IT BE SCH80 PVC TO MATCH THE BURIED 2" PVC DBL. CONT. PIPE OUTSIDE THE BUILDING?**

*Response: Schedule 80 PVC is acceptable for the 2" sump pump discharge from the electrical building.*

**48. Question: WHICH TAKES PRESEDENCE FOR THE PW PIPING ON THIS INDUSTRIAL FACILITY PROJECT, PLUMBING SPEC 22 00 01.2.01.B.1 WHICH WOULD REQUIRE ALL ABOVE GRADE PIPE TO BE TYPE L COPPER OR SPEC 33 05 01.10 WHICH REQUIRES SCH80 PVC?**

*Response: Potable water piping must conform to Section 22 00 01 Plumbing Systems unless otherwise noted on the Drawings.*

**49. Question: THE "T" SERIES DWG'S INDICATE A 36" RCP PIPE FOR THE GST OVERFLOW. DWG C13 CALLS FOR 30" RCP. WHICH IS CORRECT?**

*Response: The proposed ground storage tank overflow should be sized as a 30" RCP per Drawing C-13. Refer to Item No. 17, 18, and 19 in the CHANGES TO THE PLAN SECTION of this addendum.*

- 50. Question: Do all butterfly valves, underground and above ground have to be restrained per detail 5 on sheet SD-3?**

*Response: All butterfly valves to be restrained per Drawing 5/SD-3.*

- 51. Question: Is the 80% vertical turbine pump efficiency required measured at the discharge flange or at the pump bowl?**

*Response: As noted in Section 44 42 56.02 Vertical Turbine Pumping Units, Paragraph 1.07.B.2, a minimum overall pump efficiency at the rated head must be 80%, thus measured at the discharge flange.*

- 52. Question: Section 46 41 17 Inline Static Mixer - Would you prefer we quote 316 stainless or epoxy-coated carbon steel?**

*Response: The inline static mixer type has been modified to a wafer-style mixer constructed of 316L stainless steel. Refer to Item No. 4 in the CHANGES TO THE SPECIFICATIONS SECTION of this addendum.*

- 53. Question: Section 46 41 17 Inline Static Mixer – The spec references NBS Voluntary Standards PS-1569 and NSF/ANSI 60. The first standard a fiberglass spec (not relevant). NSF 60 is for chemicals, not water treatment components. Perhaps they mean NSF 61? We can offer one of the two following options. Do you have any thoughts? NSF 61 fully certified unit in stainless. Not NSF 61 certified epoxy coated carbon steel. However, we would use an NSF 61 certified epoxy for all wetted parts.**

*Response: The inline static mixer has been modified to a wafer-style mixer requiring NSF 61 fully certified unit. Refer to Item No. 4 in the CHANGES TO THE SPECIFICATIONS SECTION of this addendum.*

- 54. Question: Section 46 41 17 Inline Static Mixer - Do you know the flow rate of the additive chemicals?**

*Response: A maximum flow rate of 385 and 4 gph is expected for 0.8% sodium hypochlorite and 23% hydrofluorosilicic acid, respectively. Refer to Item No. 4 in the CHANGES TO THE SPECIFICATIONS SECTION of this addendum.*

- 55. Question: Section 46 41 17 Inline Static Mixer – Do you know the required mix quality and distance from point of injection until the mix quality is required? It's odd to see a spec that doesn't reference a CoV target. The most cost effective solution in this line size would be a single element ST Design mixer (~1 diameter long) that would produce a good quality mix in a few diameters. If they need a strict COV target at the outlet of the mixer, however, the solution would be very different.**

*Response: The average variation in the process stream of the injected fluid shall be within 1% of the mean value at 10 pipe diameters downstream of the mixer. Refer to Item No. 4 in the CHANGES TO THE SPECIFICATIONS SECTION of this addendum.*

- 56. Question: The spec section 04 20 00 pg.6 lists ground face, split ribbed and triple scored CMU. Where do these occur because I only find split face, smooth single scored and glazed CMU?**

*Response: Ground face, split ribbed and triple scored CMU has been removed in Section 04 20 00 Unit Masonry. Refer to Item No. 15 in the CHANGES TO THE SPECIFICATIONS SECTION of this addendum.*

- 57. Question: The exterior elevations don't match the Exterior Finish Schedule. Elevations show color 3 at the bottom, color 2 in the middle and color 1 at the top. The finish schedule is the opposite.**

*Response: Corrected, refer to Item No. 9 in the CHANGES TO THE PLANS SECTION of this addendum.*

- 58. Question: Drawing A-6 finish schedule has P-2 for walls up to 4' up the walls only using a chemical resistant epoxy coating. There is no epoxy coating specified in 099900 or 099600 for cmu walls. Can you tell us what coating system to use on these walls and also confirm they only want it 4' up the wall and leave the rest of the walls uncoated.**

*Response: Epoxy coating system as specified shall be provided from floor to ceiling for vertical CMU walls. Refer to Item No. 16 in the CHANGES TO THE SPECIFICATIONS SECTION and Item No. 20 in the CHANGES TO THE PLANS SECTION of this addendum.*

- 59. Question: Drawing A-6 for floors has sealed concrete for the floors - I did not see a coating system for this either. Can they clarify the coating needed for the sealed concrete floors?**

*Response: Section 09 97 23 has been added to specify the concrete sealers for floors. Refer to Item No. 2 in the CHANGES TO THE SPECIFICATIONS SECTION of this addendum.*

- 60. Question: The exterior below grade concrete for the new electrical building crawl space area is calling for water proofing. I did not see a spec section for below grade waterproofing?**

*Response: Refer to Section 03 30 00 Cast in Place Concrete, Paragraph 2.07.F Foundation Waterproofing.*

- 61. Question: Paint system #6 in Section 09 96 00.01 is for above grade interior and exterior PVC pipe. Paragraph 2.01D in Section 33 01 02 says, "In general, items shall either receive factory finish coating, or remain uncoated (such as PVC and stainless steel). Which is correct?"**

*Response: Coating for above-grade PVC pipe must conform to Section 09 96 00.01. As stipulated in Section 33 01 02, Paragraph 2.01.D, "For items to be field coated, provide factory primer compatible with finish coatings specified in Division 09 Sections.". Refer to Item No. 9 in the CHANGES TO THE SPECIFICATIONS SECTION of this addendum.*

- 62. Question: Coating system #3 in Section 09 96 00.01 is specified for concrete floor surfaces of interior chemical storage areas. Sheets CH-1, CH-3, CH-6, CH-7 and CH-8 have general notes to "coat all concrete surfaces in accordance with specification 09 96 00.01". Both interior chemical rooms as well as exterior bulk chemical storage containment areas are shown. Is the intent to be as described for System 3 (only interior areas), or are the exterior containment areas to be coated as well? Please clarify the intentions.**

*Response: All interior and exterior concrete floor surfaces of the chemical storage areas are to be coated in accordance with Specification 09 96 00.01. Refer to Item No. 17 in the CHANGES TO THE SPECIFICATIONS SECTION of this addendum.*

- 63. Question: Can you ask the engineers to provide pier depths for sound wall piers?**

*Response: Pier depths for the sound wall are provided per Drawing S-5.*

- 64. Question: On the top foundation plan the HI point elevation is shown as 939'6". On the section cut it shows the top of slab to be 944'3". Which is correct?**

*Response: The top of the fluoride building foundation slab elevation shall be 944'-3" per Section 2 on Drawing S-14.*

- 65. Question: Will SAWS except ABB's ULH Drive (Active Front End Drive) in leu of the 18 Pulse drive?**

*Response: Section 26 29 23 Low Voltage VFD shall remain as specified and no alternative technologies will be allowed.*

- 66. Question: Also, our company is set up to receive some of the bids from SAWS, but we do not see all of them. Is there a way I should be able to access the full spec or is there a specific thing I need to do to get access to this information?**

*Response: All bid documents are available for the public at San Antonio Water System's Contract Solicitation webpage. Website Link: [https://apps.saws.org/Business\\_Center/Contractsol/](https://apps.saws.org/Business_Center/Contractsol/)*

- 67. Question: Reference drawing EB-9, shows (TYP of 6) for the High Service Pumps LCS's however, drawing I-7 shows 4 High Service Pump LCS's. Please confirm what QTY is correct.**

*Response: For the High Service Pumps, there are four local control panels - one for each motor heater. Drawing EB-9 has been modified. Refer to Item No. 21 in the CHANGES TO THE PLANS section of this addendum.*

- 68. Question: Please confirm instrument Tag LIT-310 on drawing EF-3 is the same instrument Tagged LE/LIT – 400 on drawing I-8.**

*Response: Tag on Drawing I-8 is correct. Tag on Drawing EF-3 has been revised to match tag on Drawing I-8. Refer to Item No. 22 in the CHANGES TO THE PLANS section of this addendum.*

- 69. Question: Please confirm instrument Tag PIT-305 on drawing EB-7 is the same instrument Tagged PIT – 300 on drawing I-7.**

*Response: Tag on Drawing I-7 is correct. Tag on Drawing EB-7 has been revised to match tag on Drawing I-7. Refer to Item No. 10 in the CHANGES TO THE PLANS section of this addendum.*

- 70. Question: Could you please provide additional information regarding Well Pump – 1/2/3 disconnects shown on drawings EE-2/4/6. Please provide appropriate disconnect sizes for each disconnect.**

*Response: The disconnect dimensions are approximate and Drawings EE-1, EE-3, and EE-5 have been revised. Refer to Item No. 23, 24, and 25 in the CHANGES TO THE PLANS section of this addendum.*

- 71. Question: Could you please provide additional information regarding the ACCU-1/MAU-3/RUT-1/RTU-2/4/HVB-101/HDB-102/HDB-101/HDB-201/HDB-202/HVB-201 disconnect sizes shown on drawings ED-2& ED-3.**

*Response: Drawing E-2 has been revised. Refer to Item No. 26 in the CHANGES TO THE PLANS section of this addendum.*

- 72. Question: Ductbank A1 on drawing E-6 show 4 (4") conduits from the CPS Utility Pole to XFMR UT-1 & 2 however, on drawing EA-2 [4160V Switchgear One-Line Diagram] shows 6(4") conduits. Please provide clarification.**

*Response: Drawings E-6 and EA-2 have been revised. Refer to Item No. 27 and 28 respectively in the CHANGES TO THE PLANS section of this addendum.*

- 73. Question: Drawing EE-2 shows (2) circuits coming from Panel LC1 in the Well Pump No.1 Rack to the EHH-LV1 and EHH-LV2 receptacles. However, this circuit are not shown on drawing E-6/C that is between EHH-LV1 & EHH-LV2. Please confirm that the circuit is to be pulled to the EHH-LV2.**

*Response: Drawing E-6 has been revised. Refer to Item No. 27 in the CHANGES TO THE PLANS section of this addendum.*

- 74. Question: Spec 44 42 57 page 5, 2.04, A. states that the discharge piping for the pumps is to be 20-inch diameter. Should this be 24-inch to match the drawings?**

*Response: Yes, discharge piping of Wells #2 and #3 shall be 24-inch per Drawing P-14. Refer to Item No. 20 in the CHANGES TO THE SPECIFICATIONS SECTION of this addendum.*

- 75. Question: Will SAWS allow Simflo Pump Manufacturer to provide the line shaft turbine pumps for the two wells?**

*Response: Refer to Section 44 42 57 Lineshaft Deep Well Pumps, Paragraph 2.01. No approved equals shall be allowed for line shaft turbine pumps.*

- 76. Question: Section 44 42 57 Lineshaft Deep Well Pumps – 2.03.E.1.f – Increase maximum bowl diameter from 20” to 24”. Column flange OD for 18” discharge column is 25”. Slotted liner at bowl depth allows ample room for 24” max OD bowl assemblies.**

*Response: Maximum diameter for bowl assemblies shall be 24”. Refer to Item No. 19 in the CHANGES TO THE SPECIFICATIONS SECTION of this addendum.*

- 77. Question: Section 44 42 57 Lineshaft Deep Well Pumps – Remove 80% limit. Vibration is guaranteed by manufacturers per HI limits only.**

*Response: Vibration limits shall meet Hydraulic Institute Standards at 100 percent of the limits of HIS 9.6.4. Refer to Item No. 21 in the CHANGES TO THE SPECIFICATIONS SECTION of this addendum.*

- 78. Question: Section 44 42 57 Lineshaft Deep Well Pumps – Attachment A 8.b – Confirm if columns, discharge heads will require hydrostatic testing, or if this only applies to bowl assemblies.**

*Response: Hydrostatic testing applies to columns and discharge heads and shall conform to Section 44 42 57 Lineshaft Deep Well Pumps, Paragraph Attachment A.7.*

- 79. Question: Plan Sheet C2 looks like the pump and motor are to be demolished, but I cannot find any provisions to replace this equipment. Is it the intent to only temporarily remove the well pumping equipment so the contractor can work in the area?**

*Response: Existing Well Pump #1 and its motor are to remain in service and shall be modified per Notes by Symbol 1 thru 7 as specified on Drawing C-2. Existing Well Pump #1 shall be re-orientated for the proposed discharge piping configuration as shown on Drawing C-2.*

- 80. Question: 2.03 B. requires the pump to be tested at the factory at the specified RPM (1800) which would require an 800 HP motor. We request that this test be allowed to be performed at a lesser RPM because the pump manufacturers may not be able to accommodate an 800 HP motor in their test facilities. This requirement could eliminate some otherwise very good pump bowls for consideration on this project.**

*Response: Testing at a lower speed shall not be allowed and “job motors” must be utilized during factory testing.*

- 81. Question: 2.03 E. calls for minimum 2-3/16" shafting. The 800 HP motors exceed the shaft horsepower limitation of 2-3/16" 416ss. 2-7/16" 416ss shafting is good for close to 1200 HP depending on the thrust conditions. We request that the minimum shaft size be changed to 2-1/16".**

*Response: Most manufacturers rate 2-3/16" at over 800 HP. We are aware of one manufacturer who suggests a lower rating for 2-3/16". In the interest of standardizing proposals for this particular item, the minimum diameter will be increased to 2-7/16". Refer to Item No. 24 in the CHANGES TO THE SPECIFICATIONS SECTION of this addendum.*

- 82. Question: 3.01 C. says to secure the airline utilizing vinyl filament tape. We suggest you require stainless steel strapping for this.**

*Response: Stainless steel banding is acceptable. Refer to Item No. 22 in the CHANGES TO THE SPECIFICATIONS SECTION of this addendum.*

- 83. Question: 3.05 A. requires a manufactures representative of for basically 4 1/2 days during pump installation, performance testing and training. Is this per pumping unit or total?**

*Response: The time allotment as specified in Section 44 42 57 Lineshaft Deep Well Pumps, Paragraph 3.05.A, is per pumping unit. Refer to Item No. 23 in the CHANGES TO THE SPECIFICATIONS SECTION of this addendum.*

- 84. Question: Attachment A 9. c. calls for the motor to be solid shaft. Can you confirm your requirements for the type of motor (solid shaft vs. hollow shaft).**

*Response: The well pumping equipment shall utilize a vertical solid shaft.*

- 85. Question: Can you please confirm the wattage that is required?**

*Response: The two (2) OHM slide resistors noted on Detail 003 on Drawing CP-2 shall be rated for 300 watts. Refer to Item No. 29 in the CHANGES TO THE PLANS SECTION of this addendum.*

- 86. Question: Please confirm there are no domestic manufactured material requirements (Buy American, AIS, etc.) for this project.**

*Response: No domestic manufacturing material requirements are required.*

- 87. Specification Section 33 16 13.18, Article 2.12.B, indicates all exposed piping on the interior of the tank must be 316 stainless steel. However, Article 2.12.B.2.b, calls for a ductile iron silt stop and Sheet T-6 of the project plans call for a lined steel silt stop. Please confirm the desired material for the silt stop.**

*Response: A lined steel silt stop is to be provided per Drawing T-6.*

- 88. Specification Section 33 16 13.18, Article 2.12.B.6, indicates that an aluminum baffle plate is to be provided on the tank outlet. This is not shown on the project plans, please confirm this is required on both tank outlets.**

*Response: An aluminum baffle plate is to be designed and provided by the Tank Manufacturer per Section 33 16 13.18, Paragraph 2.12.B.6.*



89. **Question: Specificaiton Section 33 16 13.18, Article 2.12.C, indicates the overflow must be as indicated on the drawings (which shows a partially concrete encased overflow with an exposed 4-foot zone of pipe and weir). Additionally, this section indicates that pipe supports must be 316 stainless steel. Please confirm that the tank manufacturer can design the overflow as shown on the drawings with the concrete encasement or with 316 stainless steel supports in lieu of the concrete encasement.**

*Response: Tank Manufacturer is required to design the overflow as shown on the Drawings and in conformance with Section 33 16 13.18, Paragraph 2.12.C.*

|                                      |
|--------------------------------------|
| <b>CHANGES TO THE SPECIFICATIONS</b> |
|--------------------------------------|

1. **Delete** Section RQ-1 Respondent Questionnaire in its entirety **and replace with** revised Section RQ-1 Respondent Questionnaire included in this addendum.
2. **Add** Section 09 97 23 Concrete Sealers in its entirety.
3. **Delete** Section 40 70 02 Process Instrument Schedule in its entirety **and replace with** revised Section 40 70 02 Process Instrument Schedule included in this addendum.
4. **Delete** Section 46 41 17 Inline Static Mixer in its entirety **and replace with** revised Section 46 41 17 Inline Static Mixer included in this addendum.
5. **IR-4 Instructions to Respondents, Paragraph 9.b**  
**Delete:** “Contractor agrees that, unless i) it is a sole proprietorship or ii) it is a company with fewer than 10 full-time employees and the value of this Contract is less than \$100,000, it does not boycott Israel and will not do so during the term of this Contract. This provision is in compliance with §2270.001 of the Texas Government Code. SAWS agrees to comply with the United States and Texas Constitutions in consideration of whether to enforce this provision.”  
**Replace with:**  
“Contractor agrees that, unless it is a sole proprietorship or a company with fewer than 10 full-time employees and the value of this Contract is less than \$100,000, it:  
a. does not boycott Israel and will not do so during the term of this Contract;  
b. does not boycott energy companies and will not do so during the term of this Contract;  
c. does not have practice, policy, guidance, or directive that discriminates against a firearm entity or firearm trade association and will not discriminate during the term of the Contract against a firearm entity or firearm trade association.  
This provision is in compliance with Chapters §2271 and 2274 of the Texas Government Code. SAWS agrees to comply with the United States and Texas Constitutions in consideration of whether to enforce this provision.”
6. **Section SC-1 Special Conditions, Paragraph SC4**  
**Delete:** “Contractor is responsible for having the cathodic protection system in place by substantial completion of the 42” transmission main, which is anticipated to take place in September 2022.”  
**Replace with:** “Contractor is responsible for having the cathodic protection system in place by substantial completion of the 42” transmission main, which is anticipated to take place in November 2022.”
7. **Section SC-2 Special Conditions, Paragraph SC8**  
**Delete:** “Contractor to submit the following critical submittals within 60 days of construction notice-to-proceed.”  
**Replace with:** “Contractor to submit the following critical submittals within 90 days of construction notice-to-proceed.”
8. **Section 40 05 64 Butterfly Valves, Paragraph 2.01.B**  
**Delete:** “Valve bodies shall be of the wafer body style and shall be suitable for use between ANSI B16.1 Class 125 cast iron flanges.

**Replace with:** “Valve shall have flanged ends with ANSI B16.1 Class 125 drilling. Two trunnions for shaft bearings shall be integral with each valve body.”

**9. Section 33 01 02 Miscellaneous Piping and Appurtenances, Paragraph 2.01.D**

**Delete:** “In general, items shall either received factor finish coating, or remain uncoated (such as PVC and stainless steel).

**Replace with:** “In general, items shall be provided with a factory finish coating with the exception of PVC and stainless steel piping.”

**10. Section 33 01 02 Miscellaneous Piping and Appurtenances, Paragraph 2.02**

**Add** the following paragraph “B. ASTM A312, Schedule 80, threaded or welded connections.”

**11. Section 40 05 43 Miscellaneous Valves, Paragraph 2.00**

**a. Add** the following paragraph:

“2.05 CHECK VALVE FOR BLOWER SYSTEMS

A. A check valve to prevent backflow shall be provided for installation in the discharge piping of each blower. The check valve shall be sized to match the blower discharge piping. It shall be the positive sealing, springless, double leaf style with silicon seats suitable for 500 degrees. The valve shall be shipped loose for field installation.”

**b. Add** the following paragraph:

“2.06 BUTTERFLY VALVES FOR BLOWER SYSTEMS

A. A lugged style butterfly valve for mounting on the blower discharge shall be provided and be of the same size as the blower discharge. Valves 10 inches and smaller shall have a 10-position locking lever operator. Valves 12 inches and larger shall have a gear type hand-wheel operator. The valve shall be resilient seated, bubble-tight shut off. The valve shall be shipped loose for field installation.”

**12. Section 33 05 01.10 Polyvinyl Chloride (PVC) Pressure Pipe and Fittings, Paragraph 1.04.A.1**

**Add** to American Society of Testing and Materials (ASTM) Standards:

|            |   |
|------------|---|
| ASTM D3034 | Specification for Type PSM Poly(Vinyl Chloride) (PVC) Sewer Pipe and Fittings |
|------------|---|

**13. Section 33 05 01.10 Polyvinyl Chloride (PVC) Pressure Pipe and Fittings, Paragraph 2.01**

**Add:**

“E. Gravity Pipe: ASTM D3034 4- to 15-inch SDR 35 Polyvinyl chloride pipe with bell and spigot compression joints. Pipe shall have a home mark on the spigot to indicate proper penetration when the joint is made.

1. Use green coloring for ground identification as sanitary sewer pipe.”

**14. Section 33 05 01.10 Polyvinyl Chloride (PVC) Pressure Pipe and Fittings, Paragraph 3.04 Schedules**

**Delete:**

| Service                 | Diameter (in.) | Type           | Min. Design Pressure | Joint Type |           |
|-------------------------|----------------|----------------|----------------------|------------|-----------|
|                         |                |                |                      | Buried     | Exposed   |
| Potable Water           | 1/2-2          | Sched.80       | 300 psi              | SW or THD  |           |
|                         | 2-1/2, 3       | Sched.80       | 300 psi              | PO         | SW or THD |
|                         | 4-12           | C900           | 150 psi              | PO         | N/A       |
| Sodium Hypochlorite     | 1/4-6          | Sched.80       | 250 psi              | SW         | SW        |
| Hydrofluorosilicic Acid | 1/4-6          | Sched. 80 DPVC | 250 psi              | SW         | SW        |

|   |     |                   |         |    |    |
|---|-----|-------------------|---------|----|----|
| Carrier Pipe (Conduit)                          | 2-6 | Sched. 80         | N/A     | SW | SW |
| Sanitary Sewer<br>(As noted on Drawings)        | 6   | Sched. 80<br>DPVC | 100 psi | SW | SW |
| SW - Solvent Weld, THD – Threaded, PO - Push-On |     |                   |         |    |    |

**Replace with:**

| Service   | Diameter<br>(in.) | Type                       | Min.<br>Design<br>Pressure | Joint Type |           |
|---|-------------------|----------------------------|----------------------------|------------|-----------|
|   |                   |                            |                            | Buried     | Exposed   |
| Potable Water   | 1/2-2             | Sched.40                   | 300 psi                    | SW or THD  |           |
|   | 2-1/2, 3          | Sched.40                   | 300 psi                    | PO         | SW or THD |
|   | 4-12              | C900                       | 150 psi                    | PO         | N/A       |
| Sodium Hypochlorite   | 1/4-6             | Sched.80                   | 250 psi                    | SW         | SW        |
| Hydrofluorosilicic Acid                                     | 1/4-6             | Sched. 80<br>DPVC          | 250 psi                    | SW         | SW        |
| Carrier Pipe (Conduit)                                      | 2-6               | Sched. 80                  | N/A                        | SW         | SW        |
| Sanitary Sewer<br>(As noted on Drawings)                    | 6                 | Sched. 80<br>DPVC          | 100 psi                    | SW         | SW        |
| Perforated PVC<br>Perimeter Drain<br>(As noted on Drawings) | 4                 | SDR35<br>Or Approved Equal | 46 psi                     | PO         | N/A       |
| SW - Solvent Weld, THD – Threaded, PO - Push-On             |                   |                            |                            |            |           |

**15. Section 04 20 00 Unit Masonry, Paragraph 2.02.D**

**Delete:**

“e. Standard pattern, split-ribbed finish;

d. Scored vertically so units laid in running bond appear as square units laid in stacked bond, standard finish;

f. Triple scored vertically so units laid in running bond appear as vertical units laid in stacked bond (solider courses), standard finish.”

**16. Section 09 96 00.01 High Performance Coatings**

**a. Add to Paragraph 2.02 Materials:**

| Type R – Water-Based Epoxy Filler/Sealer |                  |
|--|------------------|
| Manufacturer                             | Approved Coating |
| Carboline                                | Sanitile 500 VOC |
| Sherwin-Williams                         | Approved Equal   |
| PPG                                      | Approved Equal   |
| Tnemec                                   | Approved Equal   |
| AkzoNobel/International<br>Paint, LLC    | Approved Equal   |

| Type S – Cross-Linked Water-Based Epoxy |                  |
|---|------------------|
| Manufacturer                            | Approved Coating |
| Carboline                               | Sanitile 555 VOC |
| Sherwin-Williams                        | Approved Equal   |

| Type S – Cross-Linked Water-Based Epoxy |                  |
|---|------------------|
| Manufacturer                            | Approved Coating |
| PPG                                     | Approved Equal   |
| Tnemec                                  | Approved Equal   |
| AkzoNobel/International Paint, LLC      | Approved Equal   |

**b. Add to Paragraph 3.17 Schedule:**

|                                  |  |            |  |   |         |
|----------------------------------|--|------------|--|---|---------|
| No.<br>10                        | <b>Concrete Masonry Unit (CMU) Vertical Walls – Chemical Storage Area(s)</b><br><b>Protection of vertical CMU walls from potential chemical exposure including sodium hypochlorite</b><br><b>Application Notes:</b><br><b>1. Coating may be applied in two coats, or as recommended by the manufacturer.</b> | SSPC-SP 13 | Type R – Water-Based Epoxy Filler/Sealer | 1 | 20.0    |
|                                  |  |            | Type S – Cross-Linked Water-Based Epoxy  | 2 | 4.0     |
| Total Minimum Dry Film Thickness |  |            |  |   | 28 mils |

- 17. Section 09 96 00.01 High Performance Coatings, Paragraph 3.17 Schedule Item No. 3**  
**Delete:** “Concrete Floor Surfaces of Interior Chemical Storage Areas”  
**Replace with:** “Concrete Floor Surfaces of Interior and Exterior Chemical Storage Areas”
- 18. Section 13 34 26 Prefabricated Fiberglass Building, Paragraph 2.02.D**  
**Delete** Paragraph 2.02.D Integral Containment Floor in its entirety.
- 19. Section 44 42 57 Lineshaft Deep Well Pumps, Paragraph 203.E**  
**Delete:** “f. Maximum diameter of pump bowls, inches 20”  
**Replace with:** “f. Maximum diameter of pump bowls, inches 24”
- 20. Section 44 42 57 Lineshaft Deep Well Pumps, Paragraph 2.04.A**  
**Delete:** “The column pipe will be 18-inch diameter while the discharge piping will be 20-inch diameter”  
**Replace with:** “The column pipe will be 18-inch diameter while the discharge piping will be 24-inch diameter”
- 21. Section 44 42 57 Lineshaft Deep Well Pumps, Paragraph 3.02.D.2**  
**Delete:** “Test with unit installed and in normal operation, and discharging to the connected piping systems at rates between low discharge head and high discharge head conditions, and with actual building structure sand foundations provided shall not develop vibration exceeding 80 percent of the limits specified HIS 9.6.4.”  
**Replace with:** “Test with unit installed and in normal operation, and discharging to the connected piping systems at rates between low discharge head and high discharge head conditions, and with actual building structure sand foundations provided shall not develop vibration exceeding 100 percent of the limits specified HIS 9.6.4.”
- 22. Section 44 42 57 Lineshaft Deep Well Pumps, Paragraph 3.01.C**  
**Delete:** “The tubing shall be secured to each column pipe joint, a minimum of one location, utilizing vinyl filament tape.”  
**Replace with:** “The tubing shall be secured to each column pipe joint, a minimum of one location, utilizing stainless steel banding.”
- 23. Section 44 42 57 Lineshaft Deep Well Pumps, Paragraph 3.05.A**  
**Delete:** “Manufacturer’s Representative; Present at Site or classroom designated by owner, for minimum person-days listed below, travel time excluded:”  
**Replace with:** “Manufacturer’s Representative; Present at Site or classroom designated by owner, for minimum person-days listed below, travel time excluded for each pumping unit:”

**24. Section 44 42 57 Lineshaft Deep Well Pumps, Paragraph 2.03.E**

**Delete:** “2-3/16”

**Replace with:** “2-7/16”

**25. Section 44 42 76 Fiberglass Reinforced Plastic Chemical Storage Tanks, Paragraph Tank Schedule**

**Delete:**

| TANK SCHEDULE            |  |  |  |                                      |
|--------------------------|--|--|--|--------------------------------------|
| Name of Tank             | Brine Tank<br><i>(By OSHG System Supplier)</i> | 0.8% Sodium Hypochlorite Solution Tank | 23% Hydrofluorosilicic Acid Storage Tank | 23% Hydrofluorosilicic Acid Day Tank |
| Tank Accessories         |  |  |  |                                      |
| Liquid Level Transmitter | Yes  | Yes                                    | Yes                                      | No                                   |

**Replace with:**

| TANK SCHEDULE            |  |  |  |                                      |
|--------------------------|--|--|--|--------------------------------------|
| Name of Tank             | Brine Tank<br><i>(By OSHG System Supplier)</i> | 0.8% Sodium Hypochlorite Solution Tank | 23% Hydrofluorosilicic Acid Storage Tank | 23% Hydrofluorosilicic Acid Day Tank |
| Tank Accessories         |  |  |  |                                      |
| Liquid Level Transmitter | Yes  | Yes                                    | Yes                                      | Yes<br>(Spare Blind Flange Port)     |

**CHANGES TO THE PLANS**

1. **Delete** Drawing C-15 in its entirety **and replace with** revised Drawing C-15 included in this addendum.
2. **Add** Drawing C-18A in its entirety.
3. **Delete** Drawing P-16 in its entirety **and replace with** revised Drawing P-16 included in this addendum.
4. **Delete** Drawing PS-1 in its entirety **and replace with** revised Drawing PS-1 included in this addendum.
5. **Delete** Drawing PS-2 in its entirety **and replace with** revised Drawing PS-2 included in this addendum.
6. **Delete** Drawing CH-4 in its entirety **and replace with** revised Drawing CH-4 included in this addendum.
7. **Delete** Drawing CH-9 in its entirety **and replace with** revised Drawing CH-9 included in this addendum.
8. **Delete** Drawing S-20 in its entirety **and replace with** revised Drawing S-20 included in this addendum.
9. **Delete** Drawing A-3 in its entirety **and replace with** revised Drawing A-3 included in this addendum.
10. **Delete** Drawing EB-7 in its entirety **and replace with** revised Drawing EB-7 included in this addendum.
11. **Delete** Drawing EB-8 in its entirety **and replace with** revised Drawing E-B8 included in this addendum.

12. **Drawing SD-1, Detail 1**  
**Delete:** “1-SAM-PVC”  
**Replace with:** “1/2-SAM-PVC”
  
13. **Drawing P-1, Sanitary Sewer Line from Electrical Building**  
**Delete:** “4-SS-PVC”  
**Replace with:** “6-SS-DPVC”
  
14. **Drawing PL-2, Notes by Symbol**  
**Delete:** “4” Sanitary Sewer Pipe, Fixture Load: 5 Fixture Units, IE: 2’-8’BFG. Refer to P-1 for Continuation”  
**Replace with:** “6” Sanitary Sewer Pipe, Fixture Load: 5 Fixture Units, IE: 2’-8’BFG. Refer to P-1 for Continuation”
  
15. **Drawing CH-1, Sodium Hypochlorite Discharge Piping**  
**Delete:** “1”-SHC-PVC to Above Ground Chemical Injection Point”  
**Replace with:** “3”-SHC-PVC to Above Ground Chemical Injection Point”
  
16. **Drawing PL-3, Notes by Symbol**  
**Delete:** “18. 3/4” Yard Hydrant with self draining bury valve and pea gravel. Install per manufacturers instructions.”  
**Replace with:** “18. 3/4” Hose Bib per DTL. 4/PL-1.”
  
17. **Drawing T-1, GST Overflow Drain**  
**Delete:** “36” RCP Tank Overflow Drain See SHT. C-9”  
**Replace with:** “30” RCP Tank Overflow Drain See SHT. C-9”
  
18. **Drawing T-2, GST Overflow Drain**  
**Delete:** “36” RCP Tank Overflow Drain See SHT. C-9”  
**Replace with:** “30” RCP Tank Overflow Drain See SHT. C-9”
  
19. **Drawing T-7, GST Overflow Drain**  
**Delete:** “36” RCP Tank Overflow Drain Line. Tank Manufacturer to design and verify flow line during construction.”  
**Replace with:** “30” RCP Tank Overflow Drain Line. Tank Manufacturer to design and verify flow line during construction.”
  
20. **Drawing A-6, Sodium Hypochlorite Generation building Exterior Elevations Finish Schedule**  
**Delete:** “8. PT-2 – Interior Walls Surfaces, Chemical Resistant Coating Up to 4’ Only”  
**Replace with:** “8. PT-2 – Interior Walls Surfaces, Chemical Resistant Coating from Floor to Ceiling per Owner’s Direction”
  
21. **Drawing EB-9, Electrical Schematic – I High Service Pumps, Local Control Panel Diagram**  
**Delete:** “(TYP. OF 6)”.
  
22. **Drawing EF-3, Fluoride System Electrical Schematics & Details, Detail 5 – Fluoride Fill Station Panel Detail**  
**Delete:** “LIT-310”  
**Replace with:** “LIT-400”.
  
23. **Drawing EE-1, Well Pump No.1 Electrical Plan, Detail A – Well Pump No. 1 Panel Mounting Detail**  
**Delete:** “ 35”x44”x41” ”  
**Replace with:** “ 50”Hx35”Wx44”D (SIZE MAY VARY) ”.

- 24. Drawing EE-3, Well Pump No.2 Electrical Plan, Detail A – Well Pump No. 2 Panel Mounting Detail**  
**Delete:** “ 35”x44”x41” ”  
**Replace with:** “ 50”Hx35”Wx44”D (SIZE MAY VARY) ”.
- 25. Drawing EE-5, Well Pump No.3 Electrical Plan, Detail A – Well Pump No. 3 Panel Mounting Detail**  
**Delete:** “ 35”x44”x41” ”  
**Replace with:** “ 50”Hx35”Wx44”D (SIZE MAY VARY) ”.
- 26. Drawing E-2, General Notes, Electrical General Notes**  
**Add Note 32 to read** “WHERE THE RATING OF THE SMALLER DISCONNECTS ARE NOT SHOWN ON THE DRAWINGS, PROVIDE A MINIMUM RATING OF 30A.”.
- 27. Drawing E-6, Electrical Ductbank Section – I**
- a. For Ductbank Section A1, Conduit 1-2:  
**Delete:** “ 4”C ”  
**Replace with:** “ 5”C “
  - b. For Ductbank Section A1, Conduit 3-4:  
**Delete:** “ 4”C ”  
**Replace with:** “ 5”C “
  - c. For Ductbank Section C, Conduit No. 6:  
**Delete:** “SPARE”  
**Replace with:** “LC1-12”.
  - d. For Ductbank Section C, Conduit No. 6:  
**Delete:** “PULL STRING”  
**Replace with:** “LC-1 TO EHH-LV2”.
- 28. Drawing EA-2, 4160V Switchgear One-Line Diagram, 4160V Metal Clad Switchgear SWGR-1 One-Line Diagram:**
- a. For circuit UT-P1:  
**Delete:** “ 3(4”C) ”  
**Replace with:** “ 2(5”C)”
  - b. For circuit UT-P2:  
**Delete:** “ 3(4”C) ”  
**Replace with:** “ 2(5”C)”.
- 29. Drawing CP-2, Detail 003**  
**Delete:** “2 OHM Slide Resistors”  
**Replace with:** “2 OHM Slide Resistors Rated at 300 Watts”
- 30. Drawing I-2, FACILITY NETWORK DIAGRAM-I:**
- a. HSP Nos. 1 through 4 Flow Meter Tags:  
**Delete:** “FIT-101, FIT-102, FIT-103, and FIT-104”  
**Replace with:** “FIT-301, FIT-302, FIT-303, and FIT-304”, respectively.
  - b. Well Pump Nos. 1 through 3 Flow Meter Tags:  
**Delete:** “FIT-201, FIT-202, and FIT-203”  
**Replace with:** “FIT-101, FIT-102, and FIT-103”, respectively.
  - c. Continuation Line “TO NETWORK AND SECURITY RACK (I-4)”:  
**Delete:** “TO NETWORK AND SECURITY RACK (I-4)”  
**Replace with:** “I-4”
  - d. Power Monitoring Device Tags:  
**Delete:** “PM1-A (DIV.-26)”  
**Replace with:** “PM1-A”  
**Delete:** “PM1-B (DIV.-26)”  
**Replace with:** “PM1-B”

- 31. **Drawing I-3, FACILITY NETWORK DIAGRAM-II, Power Monitoring Device Tags:**
  - a. **Delete:** “PM-MCCI-ML”  
**Replace with:** “PM-MCC2-ML”
  - b. **Delete:** “PM-MCCI-MR”  
**Replace with:** “PM-MCC2-MR”
- 32. **Drawing I-10, OSHG SOFTENER & BRINE SYSTEMS P&ID:**
  - a. **Delete** “46” from bottom left area of symbols for FE/FIT-500 and FE/FIT-505.
  - b. **Delete** “46” from bottom left area of symbols for PI-510A, PI-510B, PI-520A and PI-520B.
  - c. **Delete** diaphragm seals shown for PI-510A, PI-510B, PI-520A, PI-520B, DPIT-510 and DPIT-520.
- 33. **Drawing I-11, OSHG GENERATOR SKIDS P&ID:**
  - a. **Delete** “46” from bottom left area of symbols for PI-510 and PI-520.
- 34. **Drawing I-12, SODIUM HYPOCHLORITE STORAGE & FEED SYSTEM P&ID:**
  - a. ZSL-530, ZSC-530, ZSL-535 AND ZSC-535 and FE/FIT-505:  
**Delete:** "46"  
**Replace with:** “33”
  - b. PE/LIT-530 AND PE/LIT-535:  
**Delete:** “46”  
**Replace with:** “44”.

**CLARIFICATIONS**

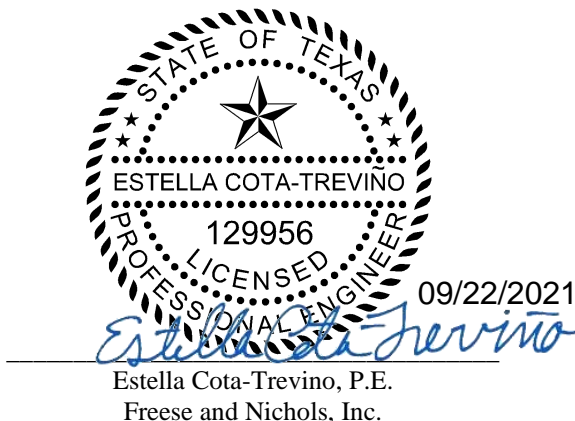
- 1. None

**END OF ADDENDUM**

This Addendum, including these twenty (20) pages, is forty-nine (49) pages with attachments in its entirety.

Attachments:

- Attachment 1 – RQ-1 Respondent Questionnaire
- Attachment 2 – Section 09 97 23 Concrete Sealers
- Attachment 3 – Revised Section 40 70 02 Process Instrument Schedule
- Attachment 4 – Revised Section 46 41 17 Inline Static Mixer
- Attachment 5 – Revised Drawings





Attachment 1

RQ-1 Respondent Questionnaire



## RESPONDENT QUESTIONNAIRE

PROJECT NAME: Turtle Creek No. 3 Primary Pump Station

**Instructions:** The Respondent Questionnaire is a required questionnaire. Complete the questionnaire by inserting the requested information. Do not modify or delete the questions.

### GENERAL INFORMATION

1. **Respondent Information:** Provide the following information regarding the Respondent. (NOTE: Co-Respondents are two or more entities proposing as a team or joint venture with each signing the contract, if awarded. Sub-contractors are not Co-Respondents and should not be identified here. If this proposal includes Co-Respondents, provide the required information in this Item #1 for each Co-Respondent by copying and inserting an additional block(s) before Item #2.)

Respondent Name: \_\_\_\_\_  
(NOTE: Give exact legal name as it will appear on the contract, if awarded.)

Principal Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_

Telephone No. \_\_\_\_\_ Fax No: \_\_\_\_\_

Social Security Number or Federal Employer Identification Number: \_

2. **Contact Information:** List the one person who SAWS may contact concerning your proposal or setting dates for meetings.

Name: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_

Telephone No. \_\_\_\_\_ Fax No: \_\_\_\_\_

Email: \_\_\_\_\_

3. Identify the principal contact person authorized to commit the Respondent to a contractual agreement.

\_\_\_\_\_  
\_\_\_\_\_

4. Does Respondent anticipate any mergers, transfer of organization ownership, management reorganization, or departure of key personnel within the next twelve (12) months?

Yes  No

5. Is Respondent authorized and/or licensed to do business in Texas?

Yes  No  If "Yes", list authorizations/licenses.

\_\_\_\_\_  
\_\_\_\_\_

6. **Debarment/Suspension Information:** Has the Respondent or any of its principals been debarred or suspended from contracting with any public entity?

Yes  No  If "Yes", identify the public entity and the name and current phone number of a representative of the public entity familiar with the debarment or suspension, and state the reason for or circumstances surrounding the debarment or suspension, including but not limited to the period of time for such debarment or suspension.

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7. **Bankruptcy Information:** Has the Respondent ever been declared bankrupt or filed for protection from creditors under state or federal proceedings?

Yes  No  If "Yes", state the date, court, jurisdiction, cause number, amount of liabilities and amount of assets.

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8. Provide any other names under which Respondent has operated within the last 10 years.
- 

9. **Litigation Disclosure:** Respond to each of the questions below by checking the appropriate box. Failure to fully and truthfully disclose the information required in the Litigation Disclosure questions may result in the disqualification of your proposal from consideration or termination of the contract, once awarded.

- a. Have you or any member of your Firm or Team to be assigned to this engagement ever been indicted or convicted of a felony or misdemeanor greater than a Class C in the last five (5) years?

Yes  No

- b. Have you or any member of your Firm or Team to be assigned to this engagement been terminated (for cause or otherwise) from any work being performed for the San Antonio Water System or any other Federal, State or Local Government, or Private Entity?

Yes  No

- c. Have you or any member of your Firm or Team to be assigned to this engagement been involved in any claim or litigation with the San Antonio Water System or any other Federal, State or Local Government, or Private Entity during the last ten (10) years?

Yes  No

If you have answered "Yes" to any of the above questions, please indicate the name(s) of the person(s), the nature, and the status and/or outcome of the information, indictment, conviction, termination, claim or litigation, as applicable. Any such information should be provided on a separate page, attached to this form and submitted with your proposal.

**10. Government Code Chapter 2274 verifications:**

- a. Are you, Contractor, held or controlled by individuals who are citizens of China, Iran, North Korea, Russia or a country designated by the Governor of the State of Texas pursuant to Texas Government Code Chapter 2274?

Yes  No

- b. Are you, Contractor, held or controlled by a company or other entity, including a governmental entity, that is owned or controlled by citizens of or directly controlled by the government of China, Iran, North Korea, Russia or a country designated by the Governor of the State of Texas pursuant to Texas Government Code Chapter 2274?

Yes  No

- c. Are you, Contractor, headquartered in China, Iran, North Korea, Russia or a country designated by the Governor of the State of Texas pursuant to Texas Government Code Chapter 2274?

Yes  No

**11. Addendums:** Respondent is required to acknowledge receipt of all addendums.

None  Yes  If "Yes", Identify.

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The information provided above is true and accurate to the best of my knowledge. Furthermore, we understand that failure to complete the Respondent Questionnaire may subject this firm to elimination from the selection process.

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Signature

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Date

---

Printed Name

---

Title

Attachment 2  
Section 09 97 23 Concrete Sealers

## SECTION 09 97 23

### CONCRETE SEALERS

#### 1.00 GENERAL

##### 1.01 SUMMARY

- A. This Section specifies an applied sealer for horizontal cast-in-place concrete surfaces.

##### 1.02 RELATED SECTIONS

- A. Section 03 30 00, Cast-In-Place Concrete.

##### 1.03 REFERENCES

- A. ASTM C 309 - Standard Specification for Liquid Membrane-Forming Compounds for curing concrete.
- B. ASTM C 1315 - Standard Specification for Liquid Membrane-Forming Compounds having special properties for curing and sealing concrete.
- C. AASHTO M 148 - Liquid Membrane Forming Compounds for curing concrete

##### 1.04 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions.
- B. Mock-Up: Prepare a test area minimum 2 by 2 feet in size to verify suitability of the sealer and final appearance.

##### 1.05 QUALITY ASSURANCE

- A. Manufacturer: Minimum 10 years' experience producing concrete coatings.
- B. Installer: Licensed installers experienced and trained in the use of specified products.
- C. Suitability of Substrate: Concrete surface must be clean and dry with all stains, oil, grease, dust and dirt removed prior to application. A thorough pressure washing is highly recommended.
- D. Regulatory Requirements: Comply with requirements of authorities having jurisdiction and applicable codes at the location of the project.

##### 1.06 DELIVERY, STORAGE AND HANDLING

- A. Deliver materials and products in unopened factory labeled packages. Protect from damage.
- B. Store in a safe place, out of direct sunlight. Keep containers tightly sealed. Do not allow product to freeze. Use within manufacturer's recommended shelf life, approximately 12 months.
- C. Avoid direct contact with product to prevent irritation of the eyes and/ or skin.
- C. Comply with manufacturer's requirements for storage and handling.

#### 2.00 PRODUCTS

##### 2.01 MATERIALS

- A. Concrete Sealer: High-performance, non-yellowing, clear acrylic-based curing and sealing compound meeting the following requirements:
  - 1. ASTM C 309, Type 1, Class B
  - 2. AASHTO M 148, Type 1, Class B.

3. ASTM C 1315, Class A, Section 6.4.1 – non-yellowing.
4. ASTM C 1315, Section 6.6 – exceed 50 MPa (70 psi) adhesion requirements.
5. NFSI B101.1 – surface slip resistance of common hard-surface.
6. ASTM E 274 – skid resistance
6. Coverage as recommended by manufacturer.

## 2.02 MANUFACTURERS

- A. Manufacturers: Basis of design: W.R. Meadows, Inc.; VOCOMP-30, is preferred due to its slip- and vehicular traffic- resistance, but subject to compliance with requirements, provide optional products by one of the following:

1. Euclid Chemical; Aqua-Cure VOX
2. Laticrete; L&M Dress & Seal
3. Concrete Coatings, Inc.; Gem Kote

## 3.00 EXECUTION

### 3.01 PREPARATION

- A. Inspection: Prior to start of application, inspect existing conditions to ensure surfaces are suitable for installation including the following:
1. Concrete has cured for a minimum of 28 days prior to application of sealer.
  2. Surface is completely free of sealers, oils, dirt, paint, alkali, penetrating sealers and foreign materials that would prevent the sealer from penetrating the concrete surface.
  3. Concrete has been swept clean.
  4. Test area has been approved.

### 3.02 APPLICATION

- A. Concrete Sealer: Strictly comply with manufacturer's installation recommendations including the following.
1. Clean surface as recommended by manufacturer.
  2. Ensure product is mixed for optimum performance. Avoid aggressive mixing as foaming may occur.
  3. Apply per manufacturer's requirements.
  4. Avoid puddling in low areas.

### 3.03 CLEANING AND PROTECTION

- A. Protection: Do not cover but protect floor area from paint and other contaminants that could inhibit the sealer.
- B. Restrict foot traffic per manufacturer's requirements.

**END OF SECTION**

## Attachment 3

### Revised Section 40 70 02 Process Instrument Schedule



## SECTION 40 70 02

### PROCESS INSTRUMENT SCHEDULE

#### 1.00 GENERAL

##### 1.01 SCOPE OF WORK

A. This Section includes a schedule of the Process Instruments provided by the PCSI.

##### 1.02 RELATED WORK

- A. Wherever references are made to Related Work in other Specification Sections of the Specifications, the Contractor is to provide such information or work as may be required in those references and include such information or work as may be specified.
- B. All Instrumentation work related to Process and Mechanical Divisions equipment that is shown on the Instrumentation Drawings shall be provided under Division 40 Process Control System Sections unless otherwise explicitly shown.
- C. All instrumentation Equipment and work provided under any Division of the Specifications shall fully comply with the requirements of Division 40 Instrumentations Sections.
- D. No references are made to any other section which may contain work related to any other section. The Contract Documents shall be taken as a whole with every section related to every other section as required to meet the requirements specified. The organization of the Contract Documents into specification divisions and sections is for organization of the documents themselves and does not relate to the division of suppliers or labor which the Contractor may choose to employ in the execution of the Contract. Where references are made to other Sections and other Divisions of the Specifications, the Contractor shall provide such information or additional work as may be required in those references and include such information or work as may be specified.
- E. Other Divisions
  - 1. The Contractor shall be responsible for examining all Sections of the Specifications and Drawings and shall determine the power and wiring requirements and shall provide appurtenances, as required to provide a fully functioning process control system. If the equipment requires added options, due to different equipment being supplied, the Contractor shall furnish the additional appurtenances and/or wiring, with no change in the Contract Price, and with no increase in Contract Time.

##### 1.03 SUBMITTALS

A. Refer to Section 40 61 13 and the related work sections for submittal requirements.

##### 1.04 SYSTEM DESCRIPTION

A. The Process Instrument Schedule provides a summary of the major process instrumentation requirements as utilized within the control loops represented in the Contract Documents. Additional instruments shall be provided as required to fully implement the functionality as described in these specifications and as recommended by the process and mechanical equipment division suppliers.

- B. The Process Instrument Schedule is not intended to be an all-inclusive listing of all elements and appurtenances required to execute the control loop functions; rather, it is intended to supplement and complement the drawings and other specification sections. The Process Instrument Schedule shall not be considered equal to a bill of materials.
- C. Provide instrumentation hardware and software as necessary to perform control functions specified herein and as shown on drawings.

1.05 PROCESS INSTRUMENT SCHEDULE

- A. The Process Instrument Schedule follows in Table 40 70 02.

**TABLE 40 70 02 PCSI-FURNISHED PROCESS INSTRUMENT SCHEDULE**

| ITEM NO. | P&ID | TAG        | DESCRIPTION                     | TYPE   | RANGE OR SET POINT           | COMMENTS   |
|----------|------|------------|---------------------------------|--|------------------------------|--|
| 1        | I-5  | FE/FIT-101 | Well No. 1 Flow                 | 16" Electromagnetic Flow Tube/Indicating Transmitter | 0-10 MGD                     | Furnish with EtherNet/IP communications interface. |
| 2        | I-5  | FE/FIT-102 | Well No. 2 Flow                 | 24" Electromagnetic Flow Tube/Indicating Transmitter | 0-15 MGD                     | Furnish with EtherNet/IP communications interface. |
| 3        | I-5  | FE/FIT-103 | Well No. 3 Flow                 | 24" Electromagnetic Flow Tube/Indicating Transmitter | 0-15 MGD                     | Furnish with EtherNet/IP communications interface. |
| 4        | I-5  | LSH-200    | GST Level High Reset            | Probe Level Switch                                   |                              | Coordinate during construction.                    |
| 5        | I-5  | LSHH-200   | GST Level High                  | Probe Level Switch                                   |                              | Coordinate during construction.                    |
| 6        | I-5  | LSL-200    | GST Level Low Reset             | Probe Level Switch                                   |                              | Coordinate during construction.                    |
| 7        | I-5  | LSLL-200   | GST Level Low                   | Probe Level Switch                                   |                              | Coordinate during construction.                    |
| 8        | I-5  | PE/LIT-201 | GST Level No. 1                 | Pressure Element/Level Indicating Transmitter        | 0-42 Feet                    |  |
| 9        | I-5  | PE/LIT-202 | GST Level No. 2                 | Pressure Element/Level Indicating Transmitter        | 0-42 Feet                    |  |
| 10       | I-6  | AE/AIT-201 | Chlorine Residual               | Chlorine Sensor/Indicating Transmitter               | 0-10 mg/L as CL <sub>2</sub> |  |
| 11       | I-6  | AE/AIT-202 | Fluoride Residual               | Fluoride Sensor/Indicating Transmitter               | 0-10 mg/L as Fluoride        |  |
| 12       | I-7  | FE/FIT-301 | HSP No. 1 Flow                  | 16" Electromagnetic Flow Tube/Indicating Transmitter | 0-10 MGD                     | Furnish with EtherNet/IP communications interface. |
| 13       | I-7  | FE/FIT-302 | HSP No. 2 Flow                  | 16" Electromagnetic Flow Tube/Indicating Transmitter | 0-10 MGD                     | Furnish with EtherNet/IP communications interface. |
| 14       | I-7  | FE/FIT-303 | HSP No. 3 Flow                  | 16" Electromagnetic Flow Tube/Indicating Transmitter | 0-10 MGD                     | Furnish with EtherNet/IP communications interface. |
| 15       | I-7  | FE/FIT-304 | HSP No. 4 Flow                  | 16" Electromagnetic Flow Tube/Indicating Transmitter | 0-10 MGD                     | Furnish with EtherNet/IP communications interface. |
| 16       | I-7  | PE/PIT-300 | Pump Station Discharge Pressure | Pressure Indicating Transmitter                      | 0-200 PSI                    |  |

| ITEM NO. | P&ID | TAG        | DESCRIPTION  | TYPE  | RANGE OR SET POINT | COMMENTS   |
|----------|------|------------|--|---|--------------------|--|
| 17       | I-8  | LE/LIT-400 | Fluoride Bulk Storage Tank Level                       | Ultrasonic Level Element/Indicating Transmitter       | 0-12 Feet          | Furnish sensor of material compatible with fluid being measured. Remotely mount transmitter at fill station panel. Include sunshield and transmitter display shield. |
| 18       | I-9  | FE/FIT-425 | Fluoride Flow  | 1/2" Electromagnetic Flow Tube/Indicating Transmitter | 0-1 gpm            | All instrument materials must be compatible with process fluid.  |
| 19       | I-10 | DPIT-500   | Supply Water Filters Differential Pressure             | Differential Pressure Indicating Transmitter          | 0-100 PSI          |  |
| 20       | I-10 | DPIT-505   | Brine Filters Differential Pressure                    | Differential Pressure Indicating Transmitter          | 0-100 PSI          | Include diaphragm seal as shown in Drawings. All instrument materials must be compatible with process fluid.   |
| 21       | I-10 | DPIT-510   | OSHG No. 1 Softened Water Filter Differential Pressure | Differential Pressure Indicating Transmitter          | 0-100 PSI          |  |
| 22       | I-10 | DPIT-520   | OSHG No. 2 Softened Water Filter Differential Pressure | Differential Pressure Indicating Transmitter          | 0-100 PSI          |  |
| 23       | I-10 | FE/FIT-500 | Potable Water Flow                                     | 1" Electromagnetic Flow Tube/Indicating Transmitter   | 0-50 gpm           |  |
| 24       | I-10 | FE/FIT-500 | Softened Water Flow                                    | 1" Electromagnetic Flow Tube/Indicating Transmitter   | 0-15 gpm           |  |
| 25       | I-10 | PI-510A    | OSHG No. 1 Softened Water Filter Inlet Pressure        | Pressure Indicator                                    | 0-100 PSI          |  |
| 26       | I-10 | PI-510B    | OSHG No. 1 Softened Water Filter Outlet Pressure       | Pressure Indicator                                    | 0-100 PSI          |  |
| 27       | I-10 | PI-520A    | OSHG No. 2 Softened Water Filter Inlet Pressure        | Pressure Indicator                                    | 0-100 PSI          |  |
| 28       | I-10 | PI-520B    | OSHG No. 2 Softened Water Filter Outlet Pressure       | Pressure Indicator                                    | 0-100 PSI          |  |
| 29       | I-11 | PI-510     | Brine Pump No. 1 Discharge Pressure                    | Pressure Indicator                                    | 0-100 PSI          | Include diaphragm seal as shown in Drawings. All instrument materials must be compatible with process fluid.   |

| ITEM NO. | P&ID | TAG        | DESCRIPTION                                  | TYPE  | RANGE OR SET POINT         | COMMENTS   |
|----------|------|------------|--|---|----------------------------|--|
| 30       | I-11 | PI-520     | Brine Pump No. 2 Discharge Pressure          | Pressure Indicator                                  | 0-100 PSI                  | Include diaphragm seal as shown in Drawings. All instrument materials must be compatible with process fluid. |
| 31       | I-12 | FE/FIT-330 | Sodium Hypochlorite Flow                     | 2" Electromagnetic Flow Tube/Indicating Transmitter | 0-20 gpm                   | All instrument materials must be compatible with process fluid.  |
| 32       | I-12 | LSH-530    | Sodium Hypochlorite Storage Area Flood       | Float Level Switch                                  | Install 1 inch above floor |  |
| 33       | I-12 | PE/LIT-530 | Sodium Hypochlorite Storage Tank No. 1 Level | Pressure Element/Level Indicating Transmitter       | 0-20 Feet                  | Include diaphragm seal as shown in Drawings. All instrument materials must be compatible with process fluid. |
| 34       | I-12 | PE/LIT-535 | Sodium Hypochlorite Storage Tank No. 2 Level | Pressure Element/Level Indicating Transmitter       | 0-20 Feet                  | Include diaphragm seal as shown in Drawings. All instrument materials must be compatible with process fluid. |
| 35       | I-13 | TE/TIT-600 | Elec. Building Elec. Room Temperature        | Temperature Indicating Transmitter                  | 20-120°F                   |  |
| 36       | I-13 | TE/TIT-605 | Elec. Building Control Room Temperature      | Temperature Indicating Transmitter                  | 20-120°F                   |  |
| 37       | I-13 | TE/TIT-610 | Chem. Building Elec. Room Temperature        | Temperature Indicating Transmitter                  | 20-120°F                   |  |

**2.00 PRODUCTS (NOT USED)**

**3.00 EXECUTION (NOT USED)**

**END OF SECTION**

## Attachment 4

### Revised Section 46 41 17 Inline Static Mixer

## SECTION 46 41 17

### INLINE STATIC MIXERS

#### 1.00 GENERAL

##### 1.01 WORK INCLUDED

- A. Furnish labor, materials, equipment and incidentals necessary to install one (1) inline or static rapid mix unit. The unit will be used to thoroughly mix hydrofluorosilicic acid and sodium hypochlorite into well water.

##### 1.02 QUALITY ASSURANCE

- A. Acceptable Manufacturers:
  - 1. Westfall Manufacturing Company
  - 2. Engineer-Approved equal.
- B. Manufacturer's Representative for Startup and Testing: The services of the Manufacturer's technical representative shall be provided for pre-startup installation checks, startup assistance, training of Owner's operating personnel, troubleshooting and other services as required in Section 01 75 00 "Starting and Adjusting."
- C. The static mixer shall be product of a manufacturer who is fully experienced, reputable and qualified in the manufacture of equipment to be furnished. The mixer manufacturer shall have at least 10 successful applications of similar size.

##### 1.03 SUBMITTALS

- A. Submittals shall be in accordance with Section 01 33 00 "Submittal Procedures" and shall include:
  - 1. Shop Drawings.
  - 2. Operation and Maintenance Manual.
  - 3. Submit a letter stating that all components of the mixer are fully compatible with 23% Hydrofluorosilicic Acid and 0.8% Sodium Hypochlorite solutions.
  - 4. Submit data demonstrating that the mixer provides complete mixing of the chemicals listed in Paragraph 1.01 within 10 pipe diameters of the mixer at the minimum and maximum flow rates provided in Paragraph 2.01.
  - 5. Documentation of pressure drop headloss curve as a function of flow.

##### 1.04 WARRANTY

- A. The equipment manufacturer shall guarantee that the equipment furnished is suitable for the purpose intended and free from defects of design, material, and workmanship for a period of 24 months after Owner acceptance. In the event the equipment fails to perform as specified during the guarantee period, the equipment manufacturer shall promptly repair or replace the defective equipment without cost to the Owner.

#### 2.00 PRODUCTS



## 2.01 INLINE RAPID MIX UNIT

- A. The static mixer shall be designed for flow rates varying from a minimum of 3 MGD to a maximum of 25 MGD, flow velocities varying from 0.48 to 4.0 fps. Maximum pressure drop through the mixer shall not exceed 5 psi at maximum flow. The mixing unit (including mixing elements and housing) shall be constructed of 316L stainless steel. Unit shall have a maximum pressure rating of not less than 120 psi at 180 F with a minimum safety factor of 10:1.
- B. The Mixer unit shall be of a compact ring body design for mounting between two standard pipe flanges. The ring body shall be a minimum thickness of 0.875 inches. Mixer unit shall have an inner diameter of 42 inches and shall be provided with standard 150-lb. flanges. Ring type EPDM gaskets shall be furnished and adhered to both sides of the mixer body. Hydrofluorosilicic acid and sodium hypochlorite are to be injected through separate ports within 1/2 pipe diameter downstream of the static mixer.
- C. Static mixer shall incorporate materials, construction, and workmanship equal to or in excess of that required by NSF/ANSI Standard 61 certification.

## 2.02 PERFORMANCE REQUIREMENTS

- A. K-Value: 46.5 or less
- B. Beta Value: 0.80
- C. Continuous mixing design where in the mixer plate shall be computer designed to provide a geometric shape which will create the mixing vortices to effectively mix the injected fluid(s) with the main process fluid for the design flow rates listed in Paragraph 2.01.
- D. The average variation in the process stream of the injected fluid shall be within 1% of the mean value at 10 pipe diameters downstream of the mixer. Performance data to be supported by third party laboratory.
- E. Mixing Elements:
  - 1. Impart a uniform shear to process fluids.
  - 2. Eliminate material hang-up.

## 3.00 EXECUTION

### 3.01 INSTALLATION

- A. Install the equipment in strict accordance with the Manufacturer's recommendations.

### 3.02 FIELD QUALITY CONTROL

- A. Upon completion of installation of the equipment, an acceptance test to verify the satisfactory operation of each unit shall be conducted. The test shall be conducted in a manner approved by and in the presence of the Engineer. The unit shall be checked for excessive noise, vibration, alignment, general operation, etc. The unit must perform in a manner acceptable to the Engineer before final acceptance will be made by the Owner.

**END OF SECTION**

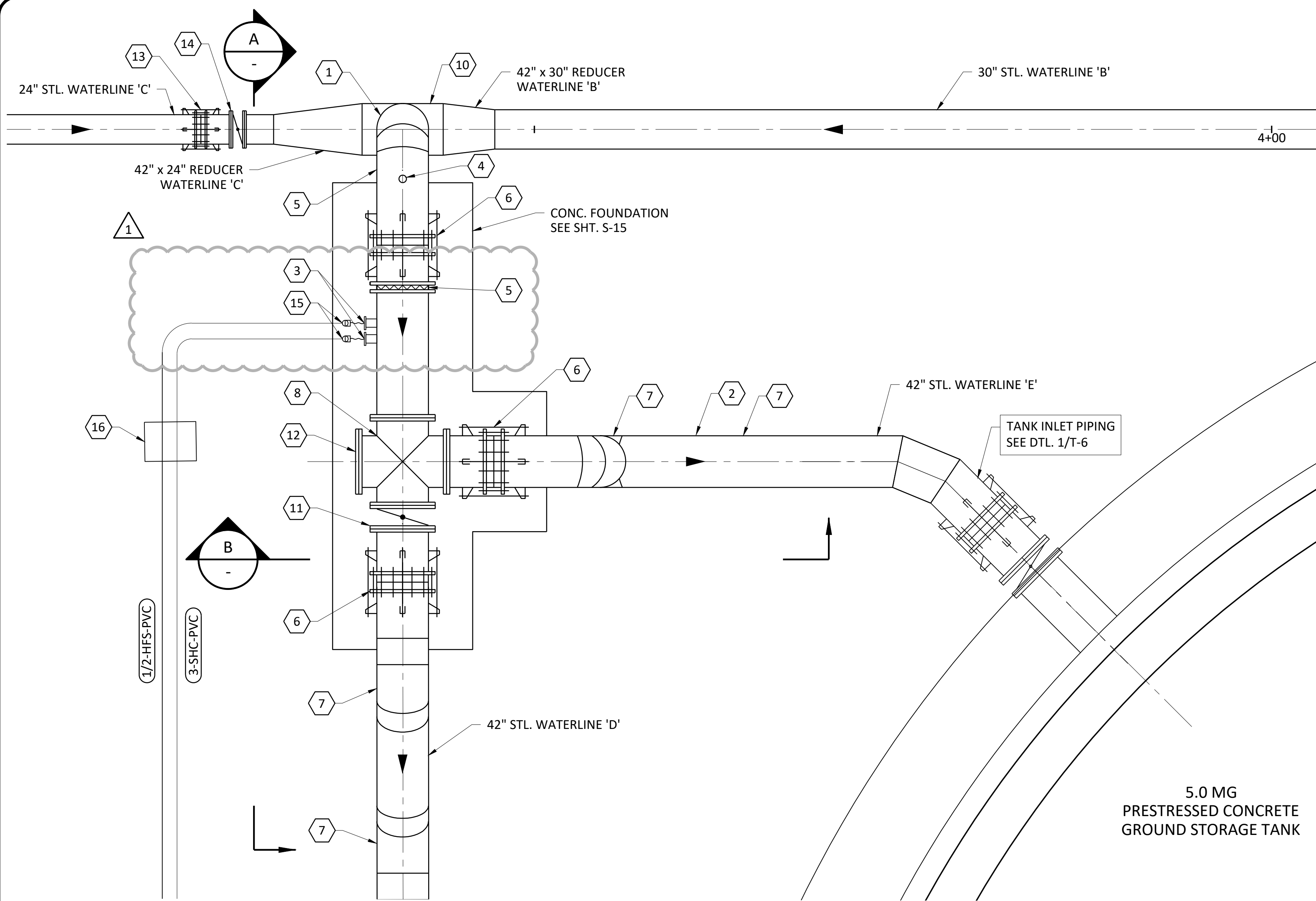
Attachment 5  
Revised Drawings



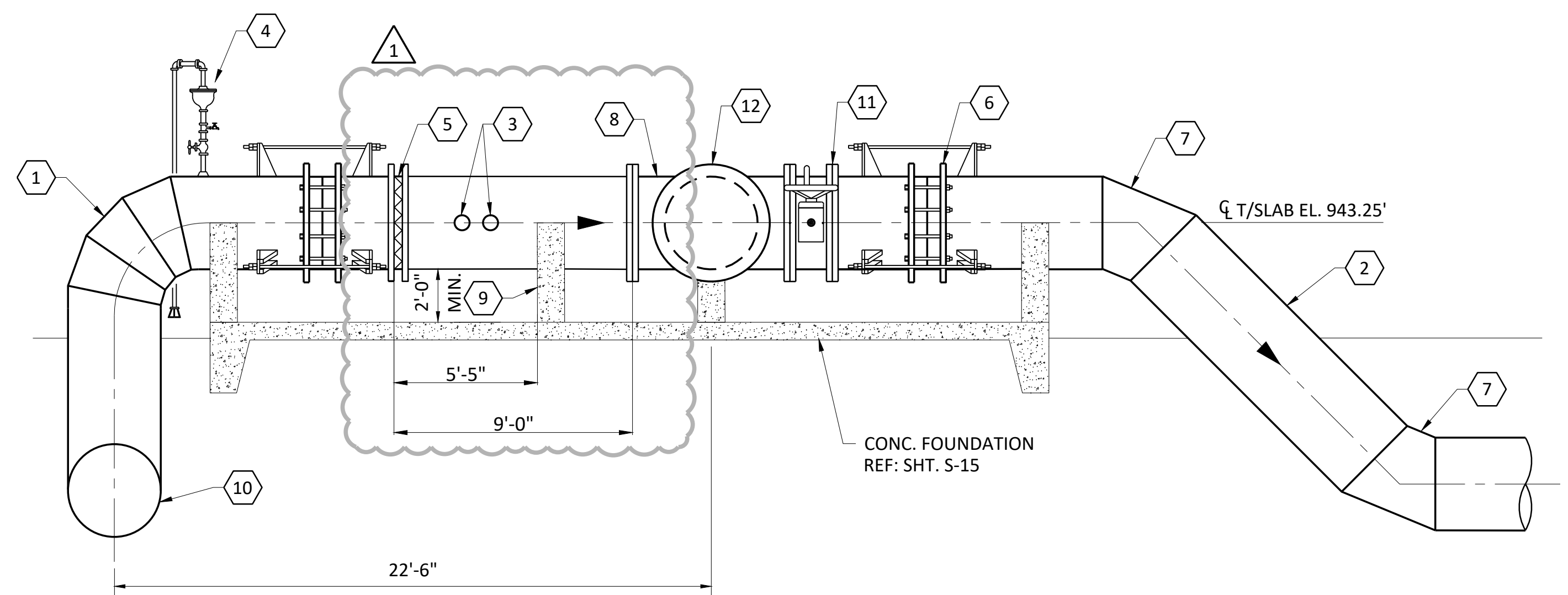




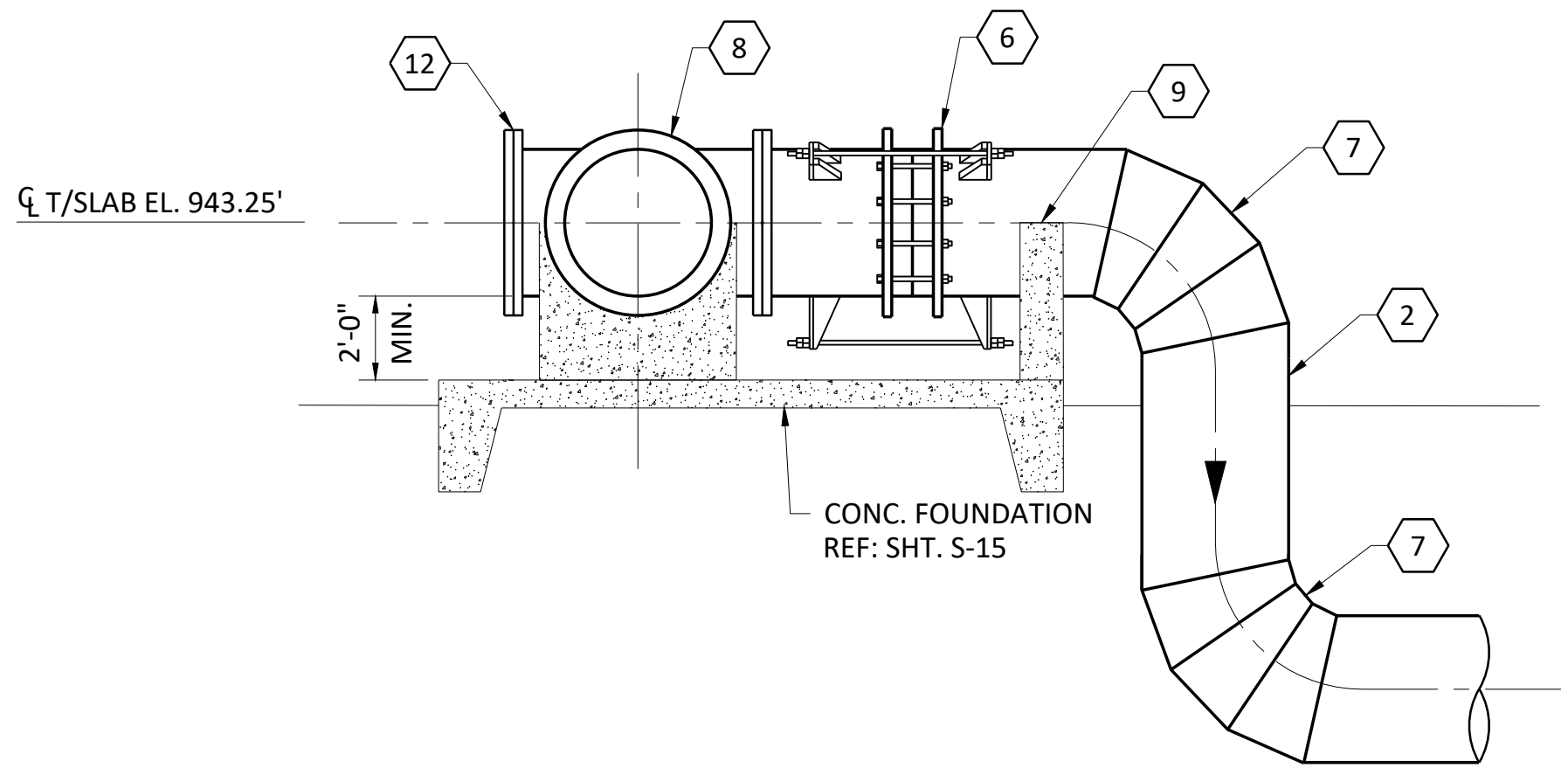




1 ABOVE GROUND PIPING PLAN  
1"=5'



A ELEVATION  
1/4"=1'-0"



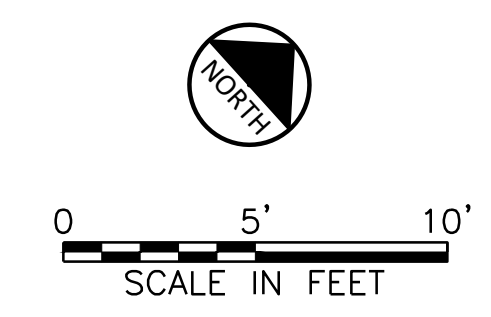
B ELEVATION  
1/4"=1'-0"

GENERAL NOTES:

1. ALL DIMENSIONS SHALL BE FIELD VERIFIED AND CONFIRMED BY EQUIPMENT SUPPLIER AND CONTRACTOR, PRIOR TO MANUFACTURING AND CONSTRUCTION.
2. ALL ABOVE GRADE PIPING SHALL BE COATED IN ACCORDANCE WITH SECTION 09 96 00.01.
3. PROVIDE INSULATION AND HEAT TRACING ON ALL PIPING, PILOT TUBING, PROCESS PIPING AND GAUGES THAT ARE 6" OR LESS.
4. ALL STEEL PIPE SHALL BE 0.375" THICK.
5. ALL ABOVE GROUND INJECTION POINT PIPING TO BE RATED FOR A MINIMUM 200 PSI WORKING PRESSURE.

NOTES BY SYMBOL "X"

1. 42" 90° BEND, 1 Ø RADIUS, STL.
2. 42" PIPE, STL.
3. FLANGED OUTLET, FOR CHEMICAL INJECTORS, REF: 1/SD-3
4. 1" COMBINATION AIR RELEASE AND VACUUM VALVE, REF: SAWS DTL. DD-901-03
5. 42" WAFER-STYLE STATIC MIXER, FLG.
6. 42" HARNESSSED MECHANICAL COUPLING, REF: SAWS DTL. DD-816-01
7. 42" 45° BEND, STL.
8. 42" CROSS, STL, FLG.
9. CONCRETE PIPE SUPPORT, REF: SHT. S-15
10. 42" TEE, STL.
11. 42" BUTTERFLY VALVE, STL., FLG.
12. 42" BLIND FLANGE
13. 24" HARNESSSED MECHANICAL COUPLING, REF: SAWS DTL. DD-816-01
14. 24" BUTTERFLY VALVE, STL., FLG.
15. FLEXIBLE FEED SYSTEM TERMINATION, REF: 8/SD-2
16. CHEMICAL FEED PULL BOX, REF: 6/SD-2

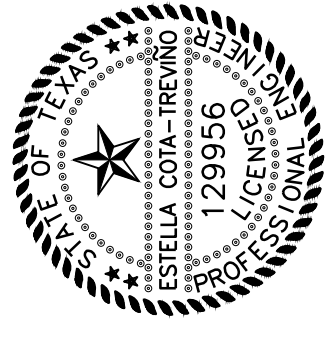


**FREESSE & NICHOLS**  
9601 McAllister Freeway, Suite 1008  
San Antonio, Texas 78216  
Phone - (210) 298-3800  
Web - www.freesse.com

SAN ANTONIO WATER SYSTEM  
TURTLE CREEK NO. 3 PRIMARY PUMP STATION

CIVIL  
ABOVE GROUND INJECTION POINT

|     |   |     |           |             |                   |
|-----|---|-----|-----------|-------------|-------------------|
| NO. | ISSUE   | BY  | DATE      | FRN JOB NO. | SWB191118         |
| 0   | VERIFY SCALE  | CCG | 9/17/2021 | DATE        | 08/11/2021        |
| 1   | Bar is one inch on original drawing. If not one inch on this sheet, adjust scale. | CCG | 9/17/2021 | DESIGNED    | ECT               |
|     |   |     |           | DRAWN       | DDH               |
|     |   |     |           | REVISOR     | CCG               |
|     |   |     |           | CHECKED     | DTB               |
|     |   |     |           | FILE NAME   | WTU-STPP-PL11.dwg |



SAN ANTONIO WATER SYSTEM  
**TURTLE CREEK NO. 3 PRIMARY PUMP STATION**  
PUMP STATION

**PUMP STATION MECHANICAL PIPING PLAN**

|     |       |    |      |             |
|-----|-------|----|------|-------------|
| NO. | ISSUE | BY | DATE | DESCRIPTION |
| 1   |       |    |      |             |

|             |            |          |       |           |         |     |
|-------------|------------|----------|-------|-----------|---------|-----|
| FRN JOB NO. | DATE       | DESIGNED | DRAWN | REVISIONS | CHECKED | DTB |
| SWB191118   | 08/11/2021 | ECT      | DDH   | ECT       | ECT     | DTB |

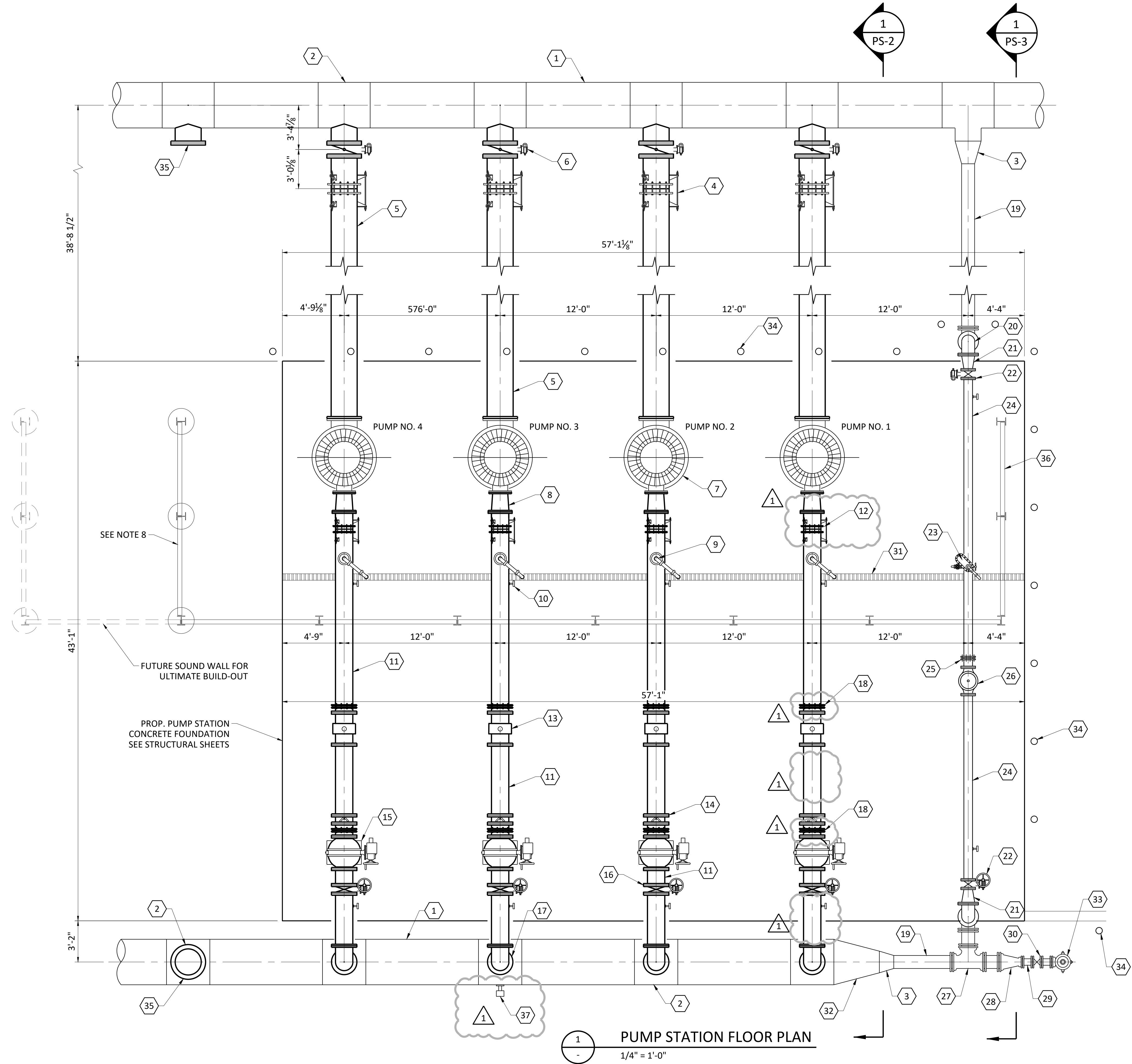
  

|              |                 |
|--------------|-----------------|
| ADDENDUM NO. | FILE NAME       |
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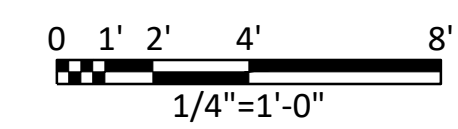
Bar is one inch on original drawing. If not one inch on this sheet, adjust scale.

- GENERAL NOTES:**
- ALL DIMENSIONS SHALL BE FIELD VERIFIED AND CONFIRMED BY EQUIPMENT SUPPLIER AND CONTRACTOR, PRIOR TO MANUFACTURING AND CONSTRUCTION.
  - ALL ABOVE GRADE PIPING SHALL BE COATED IN ACCORDANCE WITH SECTION 09 96 00.01.
  - CONTRACTOR TO VERIFY FLOW METER DIMENSIONS AND INSTALLATION REQUIREMENTS PRIOR TO PROCUREMENT AND INSTALLATION.
  - PROVIDE SPARE FLANGED SPOOL PIECE WITH TWO NEW GASKETS FOR EACH SIZE FLOW METER. PRESSURE RATINGS SHALL BE 250 PSI, LENGTH SHALL MATCH INSTALLATION FLOW METER LENGTH, STORE AS DIRECTED BY OWNER.
  - PROVIDE INSULATION AND HEAT TRACING ON ALL PIPING, PILOT TUBING, PROCESS PIPING AND GAUGES THAT ARE 6" OR LESS.
  - ALL STEEL PIPE SHALL BE 0.375" THICK.
  - ALL PIPING UPSTREAM OF PUMPS TO BE RATED FOR A MINIMUM 200 PSI WORKING PRESSURE AND ALL PIPING DOWNSTREAM OF PUMPS TO BE RATED FOR A MINIMUM 250 PSI WORKING PRESSURE.
  - SEE SHEET AC-3 FOR PUMP STATION SOUND WALL DIMENSIONS AND CLEARANCES.
  - REDUCER DIMENSIONS AND NECESSARY STRAIGHT PIPE LENGTH BETWEEN PUMP SUCTION INLET AND REDUCER TO BE DETERMINED AND CONFIRMED BY EQUIPMENT MANUFACTURER. DIMENSIONS AND INSTALLATION SHALL CONFORM TO AWWA C208 AND CURRENT HYDRAULIC INSTITUTE STANDARDS.

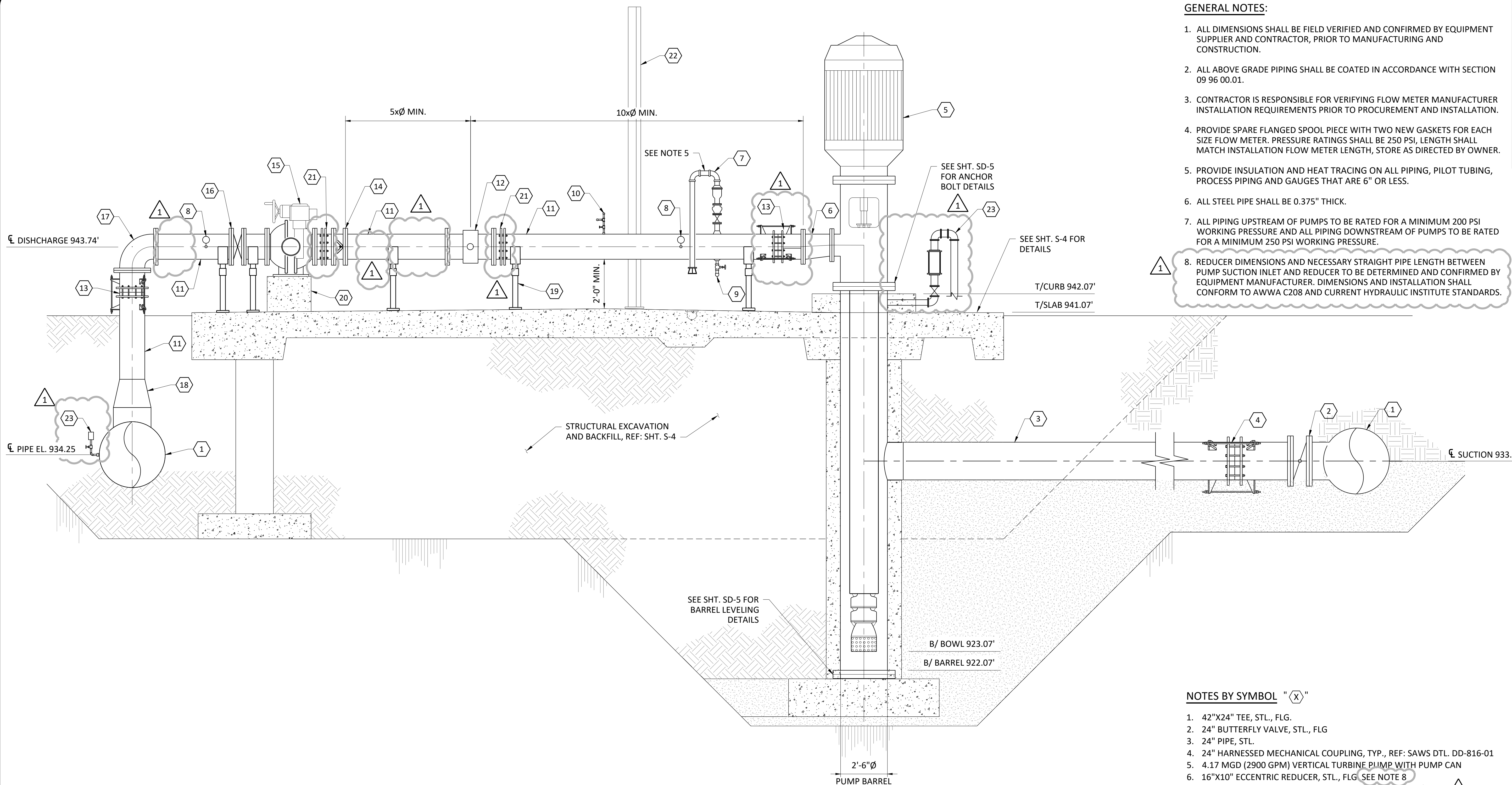
- NOTES BY SYMBOL "X"**
- 42" PIPE, STL.
  - 42"x24" TEE, STL., FLG.
  - 24"x12" REDUCER, STL.
  - 24" HARNESSED MECHANICAL COUPLING, TYP., REF: SAWS DTL. DD-816-01.
  - 24" PIPE, STL.
  - 24" BUTTERFLY VALVE, FLG.
  - 4.17 MGD (2900 GPM) VERTICAL TURBINE PUMP
  - 16"x10" ECCENTRIC REDUCER, STL., FLG., TYP (SEE NOTE 9)
  - 3" PUMP DISCHARGE AIR VALVE ASSEMBLY, TYP., REF: 3/SD-2
  - PRESSURE GAUGE, TYP., REF: 1/SD-2
  - 16" PIPE, STL.
  - 16" HARNESSED MECHANICAL COUPLING, TYP., REF: SAWS DTL. DD-816-01.
  - 16" ELECTROMAGNETIC FLOW METER, FLG., TYP. SEE NOTE 3
  - 16" DUAL DISC CHECK VALVE, FLG., TYP.
  - 16" PUMP CONTROL BALL VALVE, MOTOR ACTUATED, FLG., TYP.
  - 16" GATE VALVE, STL., FLG
  - 16" 90 BEND STL. FLG., TYP
  - 16" FLANGED COUPLING ADAPTER
  - 12" PIPE, STL.
  - 12" 90 BEND, STL., FLG.
  - 12"x8" REDUCER, STL., FLG.
  - 8" GATE VALVE, STL., FLG.
  - 2" COMBINATION AIR RELEASE AND VACUUM VALVE, REF: 5/SD-2
  - 8" PIPE, STL.
  - 8" RESTRAINED FLANGED COUPLING ADAPTER
  - 12" TEE, STL., FLG.
  - 12"x6" REDUCER, STL, MJ
  - 6" PIPE, STL.
  - 6" GATE VALVE, STL., MJ.
  - 4" DRAINAGE CHANNEL, REF: SAWS DTL. DD-901-01
  - 42"x24" REDUCER, STL., FLG.
  - FIRE HYDRANT ASSEMBLY (RATED 250 PSI), REF: SAWS DTL. DD-834-01
  - 6" BOLLARD, @ 6' SPACING, TYP., REF: SAWS DTL. DD-903-2U
  - 24" BLIND FLANGE
  - ACOUSTICAL TREATMENT, REF: SHT. AC-1
  - 1" PRESSURE TRANSMITTER, REF: 2/SD-3



**PUMP STATION FLOOR PLAN**  
1/4" = 1'-0"



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1 PZ1170 VTP SECTION  
 3/8" = 1'-0"

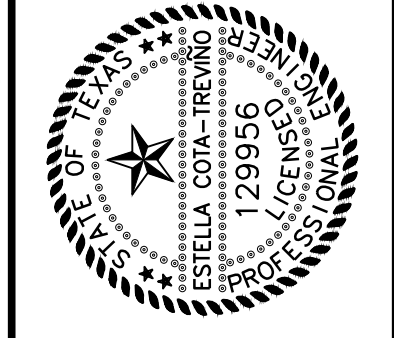
**GENERAL NOTES:**

1. ALL DIMENSIONS SHALL BE FIELD VERIFIED AND CONFIRMED BY EQUIPMENT SUPPLIER AND CONTRACTOR, PRIOR TO MANUFACTURING AND CONSTRUCTION.
2. ALL ABOVE GRADE PIPING SHALL BE COATED IN ACCORDANCE WITH SECTION 09 96 00.01.
3. CONTRACTOR IS RESPONSIBLE FOR VERIFYING FLOW METER MANUFACTURER INSTALLATION REQUIREMENTS PRIOR TO PROCUREMENT AND INSTALLATION.
4. PROVIDE SPARE FLANGED SPOOL PIECE WITH TWO NEW GASKETS FOR EACH SIZE FLOW METER. PRESSURE RATINGS SHALL BE 250 PSI, LENGTH SHALL MATCH INSTALLATION FLOW METER LENGTH, STORE AS DIRECTED BY OWNER.
5. PROVIDE INSULATION AND HEAT TRACING ON ALL PIPING, PILOT TUBING, PROCESS PIPING AND GAUGES THAT ARE 6" OR LESS.
6. ALL STEEL PIPE SHALL BE 0.375" THICK.
7. ALL PIPING UPSTREAM OF PUMPS TO BE RATED FOR A MINIMUM 200 PSI WORKING PRESSURE AND ALL PIPING DOWNSTREAM OF PUMPS TO BE RATED FOR A MINIMUM 250 PSI WORKING PRESSURE.
8. REDUCER DIMENSIONS AND NECESSARY STRAIGHT PIPE LENGTH BETWEEN PUMP SUCTION INLET AND REDUCER TO BE DETERMINED AND CONFIRMED BY EQUIPMENT MANUFACTURER. DIMENSIONS AND INSTALLATION SHALL CONFORM TO AWWA C208 AND CURRENT HYDRAULIC INSTITUTE STANDARDS.

**NOTES BY SYMBOL "X"**

1. 42"X24" TEE, STL., FLG.
2. 24" BUTTERFLY VALVE, STL., FLG.
3. 24" PIPE, STL.
4. 24" HARNESSSED MECHANICAL COUPLING, TYP., REF: SAWS DTL. DD-816-01
5. 4.17 MGD (2900 GPM) VERTICAL TURBINE PUMP WITH PUMP CAN
6. 16"X10" ECCENTRIC REDUCER, STL., FLG. SEE NOTE 8
7. 3" PUMP DISCHARGE AIR VALVE ASSEMBLY, TYP., REF: 3/SD-2
8. PRESSURE GAUGE, TYP., REF: 1/SD-2
9. 2" DRAIN TAP. TYP., REF: SAWS DTL. DD-901-03
10. 3/4" SAMPLE TAP, TYP., REF: SAWS DTL. DD-901-03
11. 16" PIPE, STL.
12. 16" ELECTROMAGNETIC FLOW METER, FLG., TYP. SEE NOTES 3 AND 4
13. 16" HARNESSSED MECHANICAL COUPLING, TYP., REF: SAWS DTL. DD-816-01
14. 16" DUAL DISC CHECK VALVE, FLG., TYP.
15. 16" PUMP CONTROL BALL VALVE, MOTOR ACTUATED, FLG., TYP.
16. 16" GATE VALVE, STL., FLG.
17. 16" 90° BEND, STL., FLG., TYP.
18. 24"X16" REDUCER, STL., FLG.
19. ADJUSTABLE PIPE SUPPORT, TYP., REF: 6/SD-3
20. CONCRETE VALVE SUPPORT, REF: SHT. 4/SD-5
21. 16" FLANGED COUPLING ADAPTER
22. ACOUSTICAL TREATMENT, REF: SHT. AC-3
23. 1" PRESSURE TRANSMITTER, REF: 2/SD-3
24. 4" DRAINAGE CHANNEL, REF: SAWS DTL. DD-901-01
25. 3" COMBINATION AIR RELEASE AND VACUUM VALVE, REF: 2/SD-6

Freeze and Nichols, Inc.  
 Texas Registered Engineering Firm F-31,144

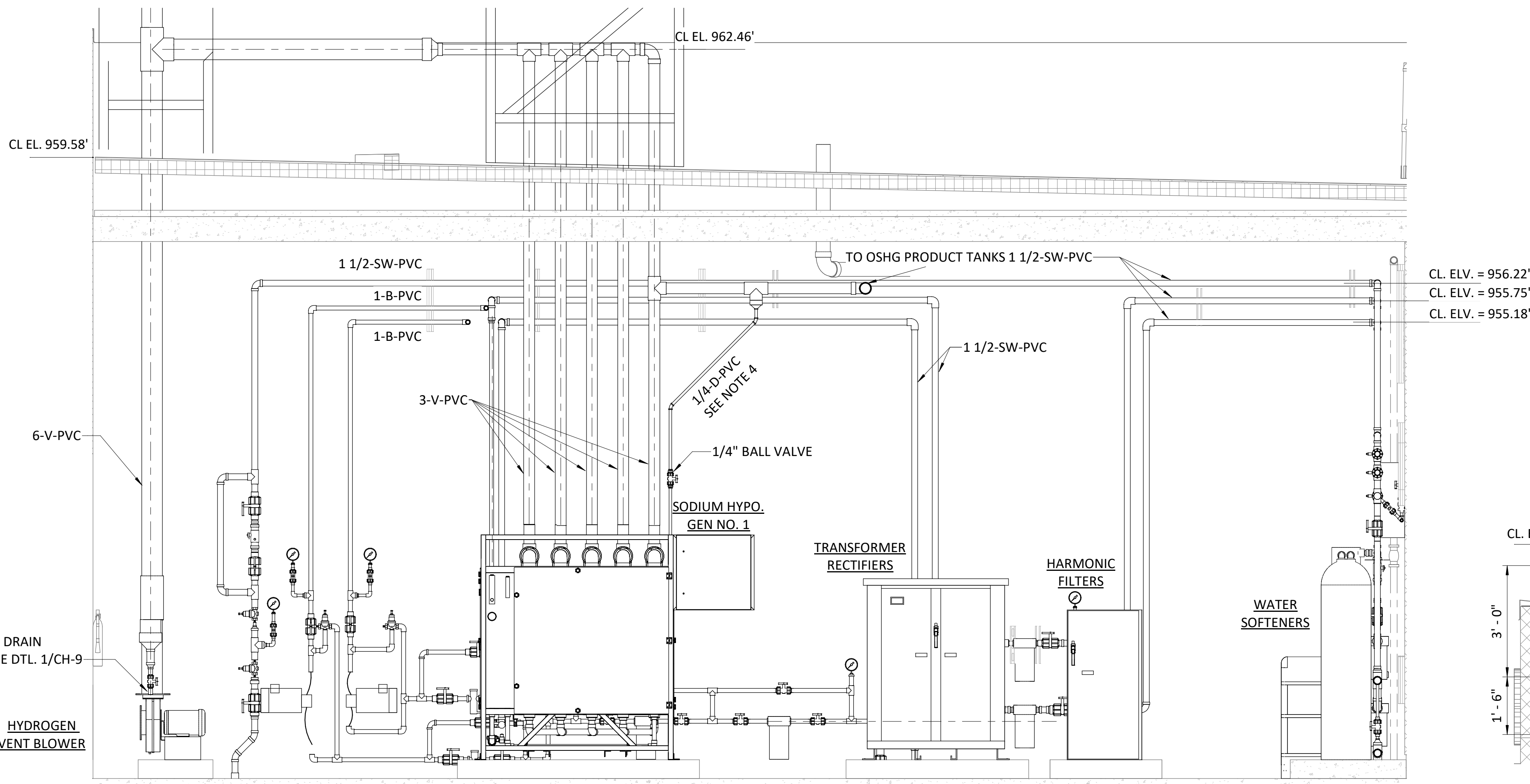


**FREEZE & NICHOLS**  
 9601 McAllister Freeway, Suite 1008  
 San Antonio, Texas 78216  
 Phone - (210) 298-3800  
 Web - www.freeze.com

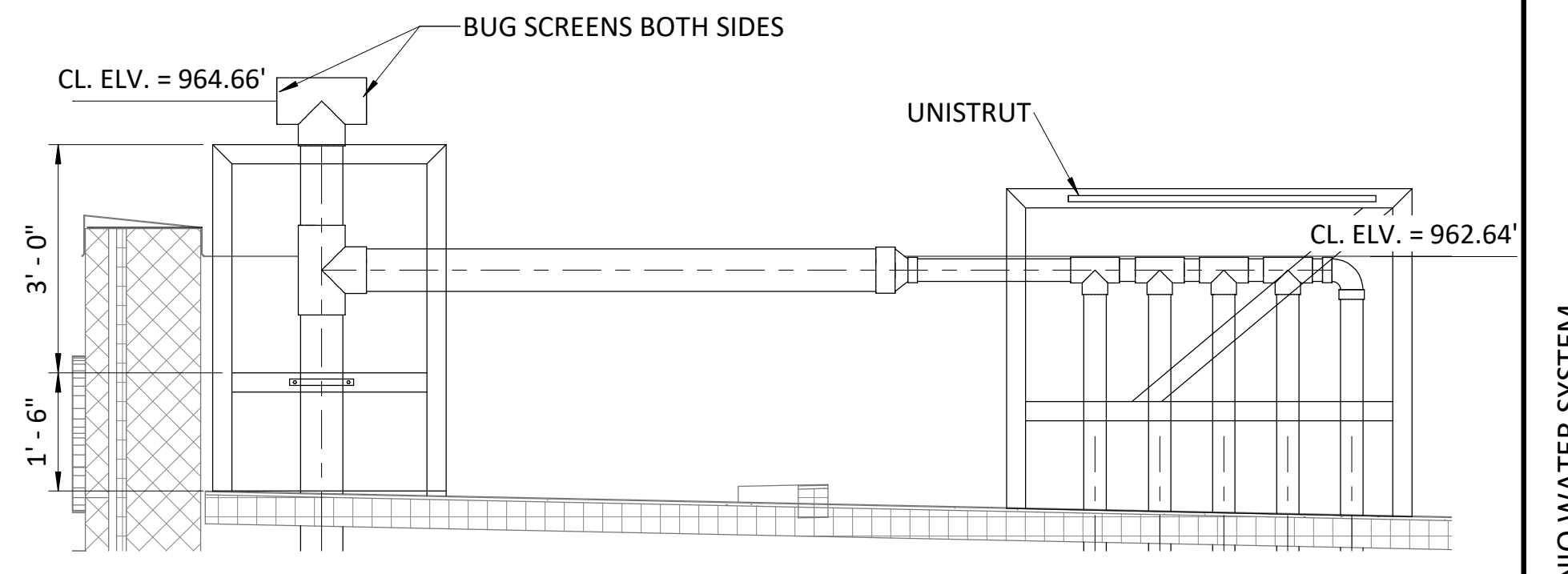
SAN ANTONIO WATER SYSTEM  
**TURTLE CREEK NO. 3 PRIMARY PUMP STATION**  
 PUMP STATION  
**PUMP STATION MECHANICAL PIPING SECTION**

| NO. | ISSUE          | DATE      | BY  | DATE      | FILE NAME       |
|-----|----------------|-----------|-----|-----------|-----------------|
| 0   | ADDENDUM NO. 5 | 9/20/2021 | ECT | 9/20/2021 | WTU-MECH-02.dwg |

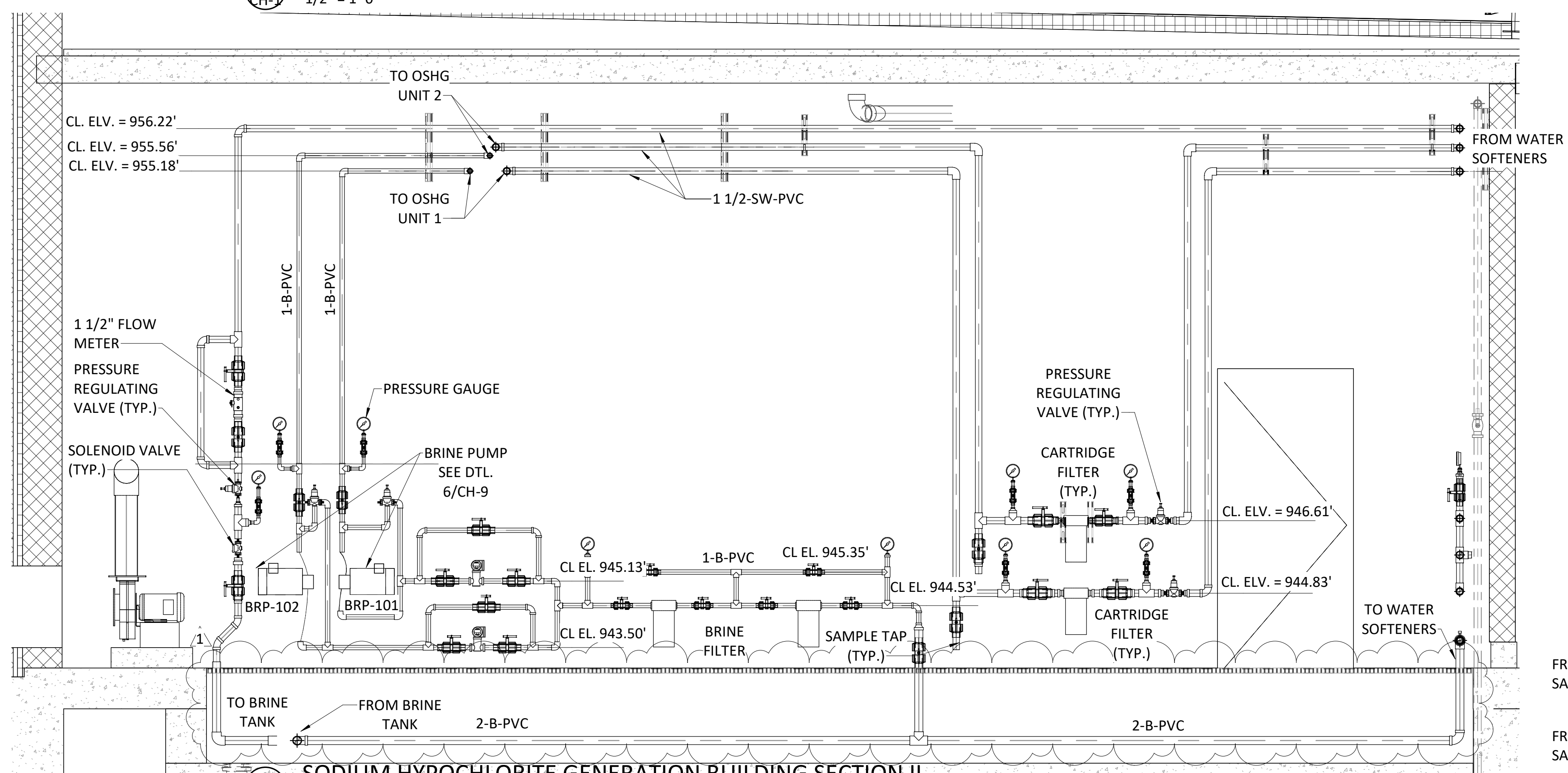




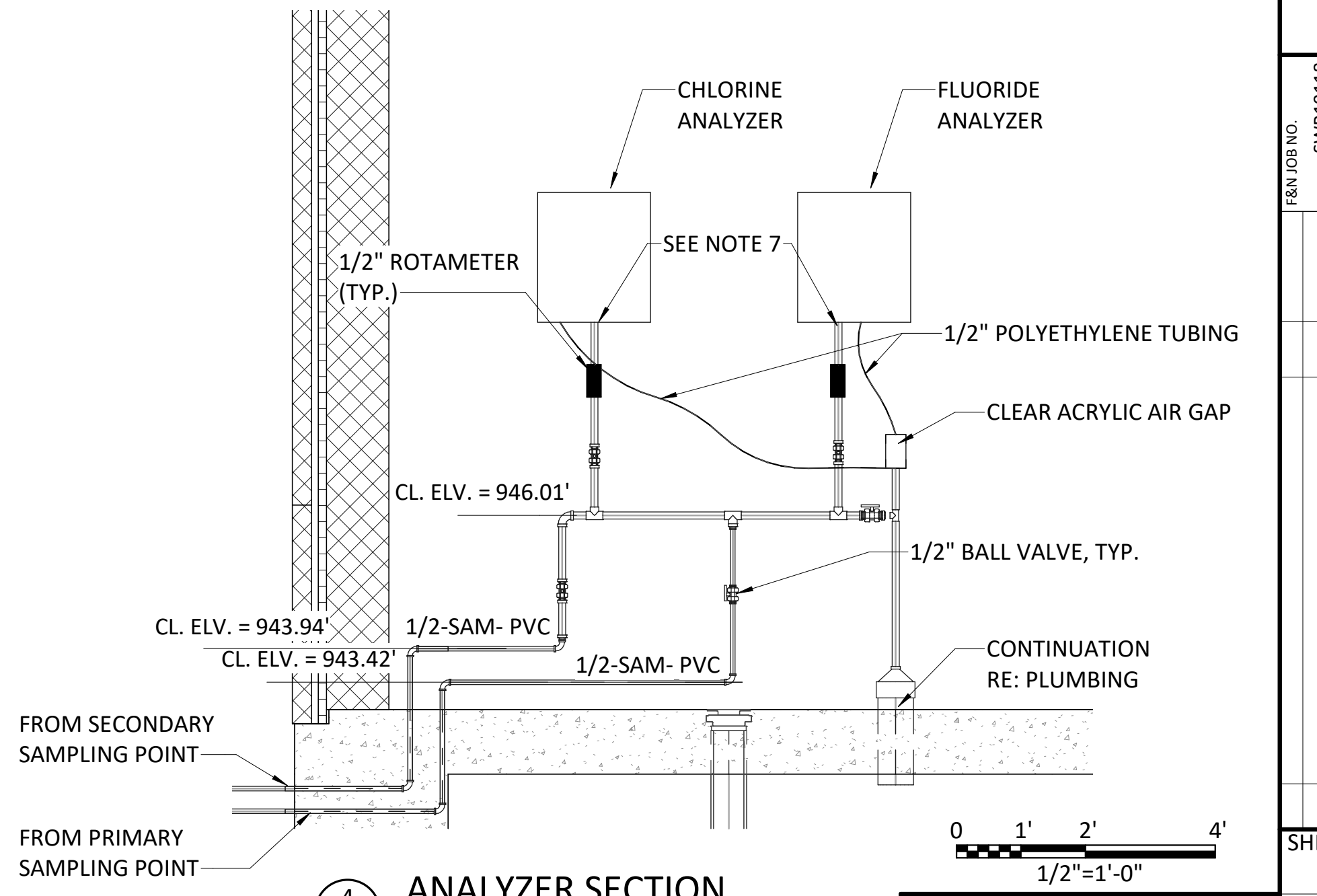
**1**  
CH-1  
SODIUM HYPOCHLORITE GENERATION BUILDING SECTION I  
1/2" = 1'-0"



**3**  
CH-1  
ROOF SUPPORT SECTION  
1/2" = 1'-0"



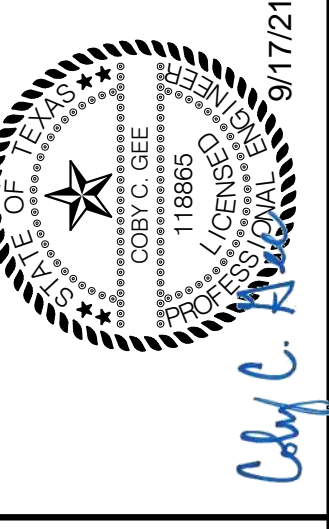
**2**  
CH-1  
SODIUM HYPOCHLORITE GENERATION BUILDING SECTION II  
1/2" = 1'-0"



**4**  
CH-1  
ANALYZER SECTION  
1/2" = 1'-0"

- NOTES:**
1. SMALL DIAMETER VALVES AND PIPING NOT SHOWN FOR CLARITY. REFER TO PROCESS FLOW DIAGRAM AND PROCESS AND INSTRUMENTATION DIAGRAMS FOR PIPING SCHEMATIC.
  2. CONTRACTOR TO PROVIDE PIPING SUPPORT SYSTEM AS DESCRIBED IN CH-10.
  3. CONTRACTOR TO COORDINATE SCOPE OF SUPPLY WITH OSHG SUPPLIER. CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL PIPING AND, VALVES, AND APPURTANCES NOT PROVIDED AS PART OF OSHG SYSTEM FOR A COMPLETE AND WORKING SYSTEM.
  4. ROUTE 1/4" DRAIN LINE TO CLOSEST FLOOR DRAIN.
  5. CONTRACTOR TO REVIEW PIPE ELEVATIONS WITH OSHG MANUFACTURER PRIOR TO PROCUREMENT AND INSTALLATION OF ALL PIPING, VALVES AND APPURTANCES.
  6. ALL BALL VALVES AS SHOWN SHALL BE TRUE UNION BALL VALVES.
  7. CONNECT PIPING TO CHEMICAL ANALYZERS PER MANUFACTURER'S RECOMMENDATION.

Freese and Nichols, Inc.  
Texas Registered Engineering Firm F-2144



**FREES & NICHOLS**  
9601 McAllister Freeway, Suite 1008  
San Antonio, Texas 78216  
Phone - (210) 298-3800  
Fax - (210) 298-3801  
Web - www.freese.com

SAN ANTONIO WATER SYSTEM  
TURTLE CREEK NO. 3 PRIMARY PUMP STATION

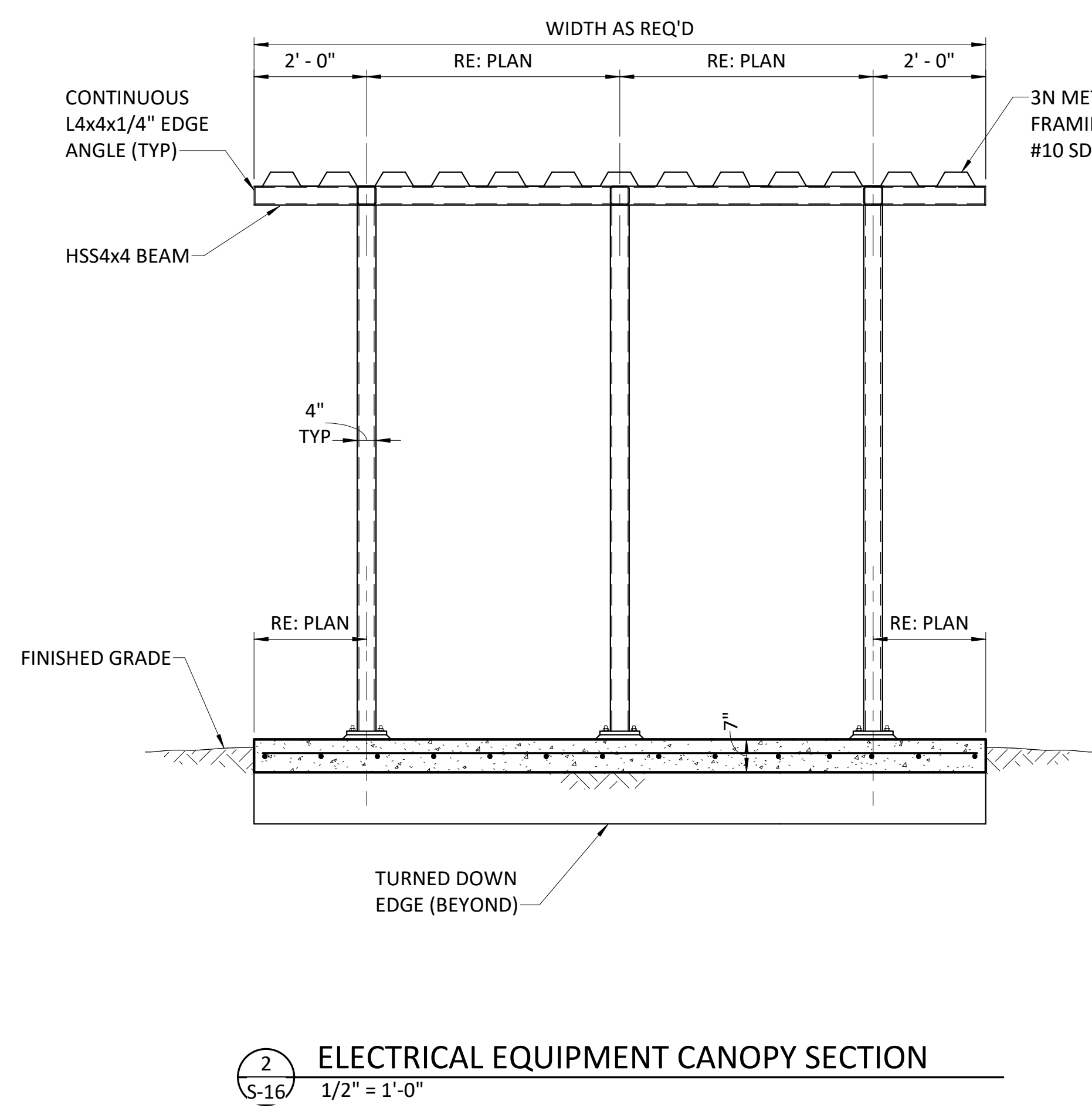
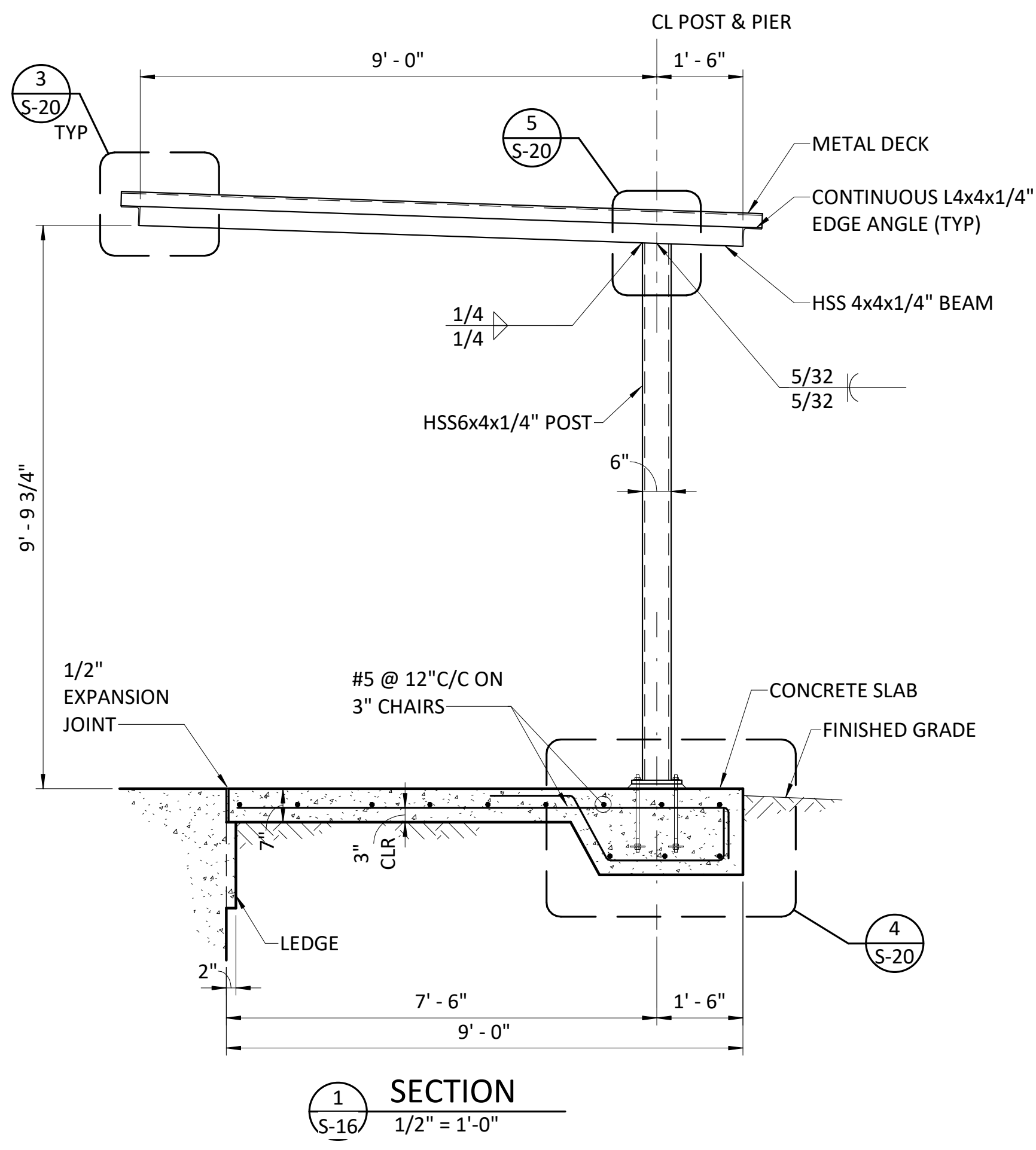
PROCESS MECHANICAL

SODIUM HYPOCHLORITE GENERATION SECTIONS

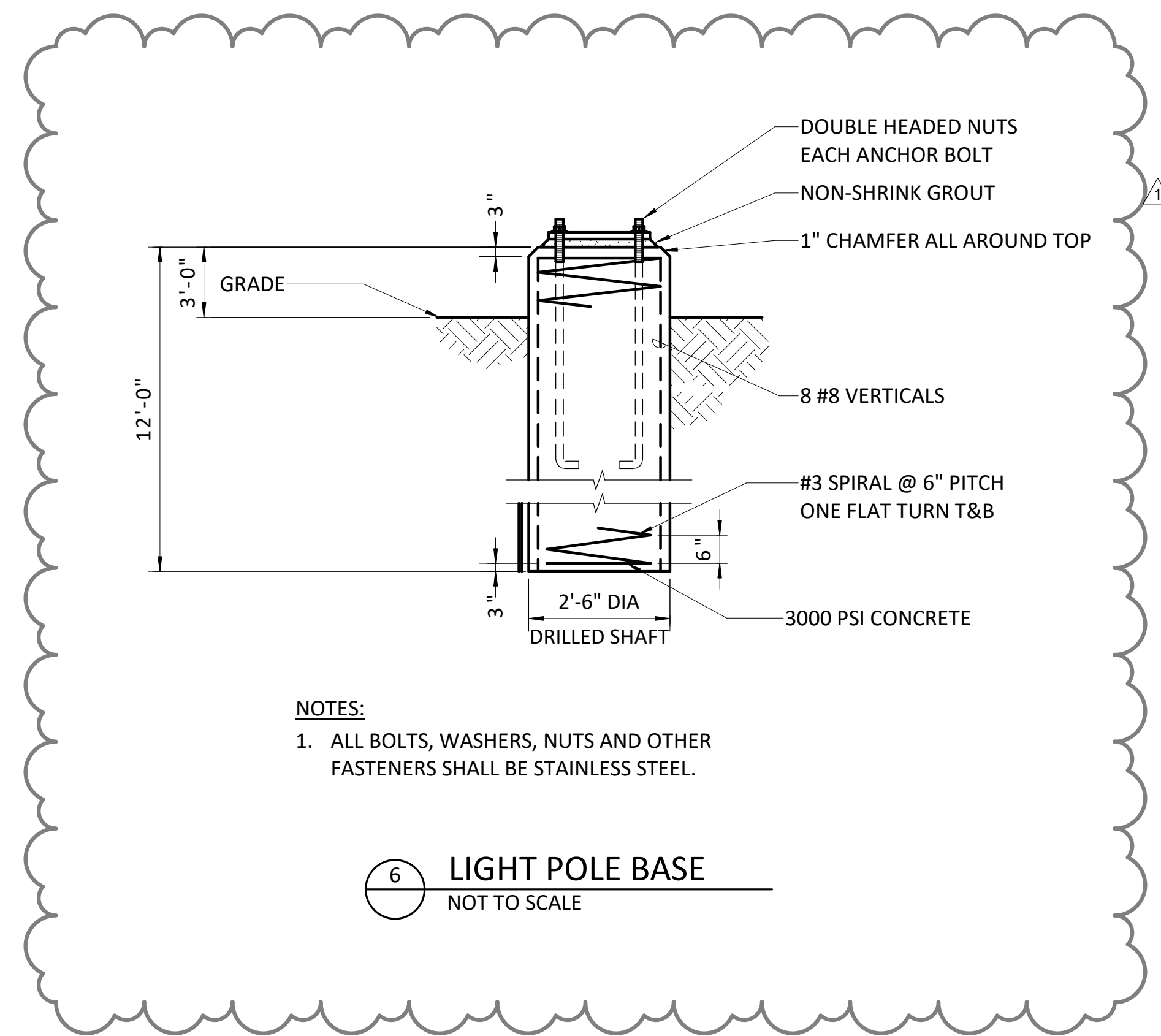
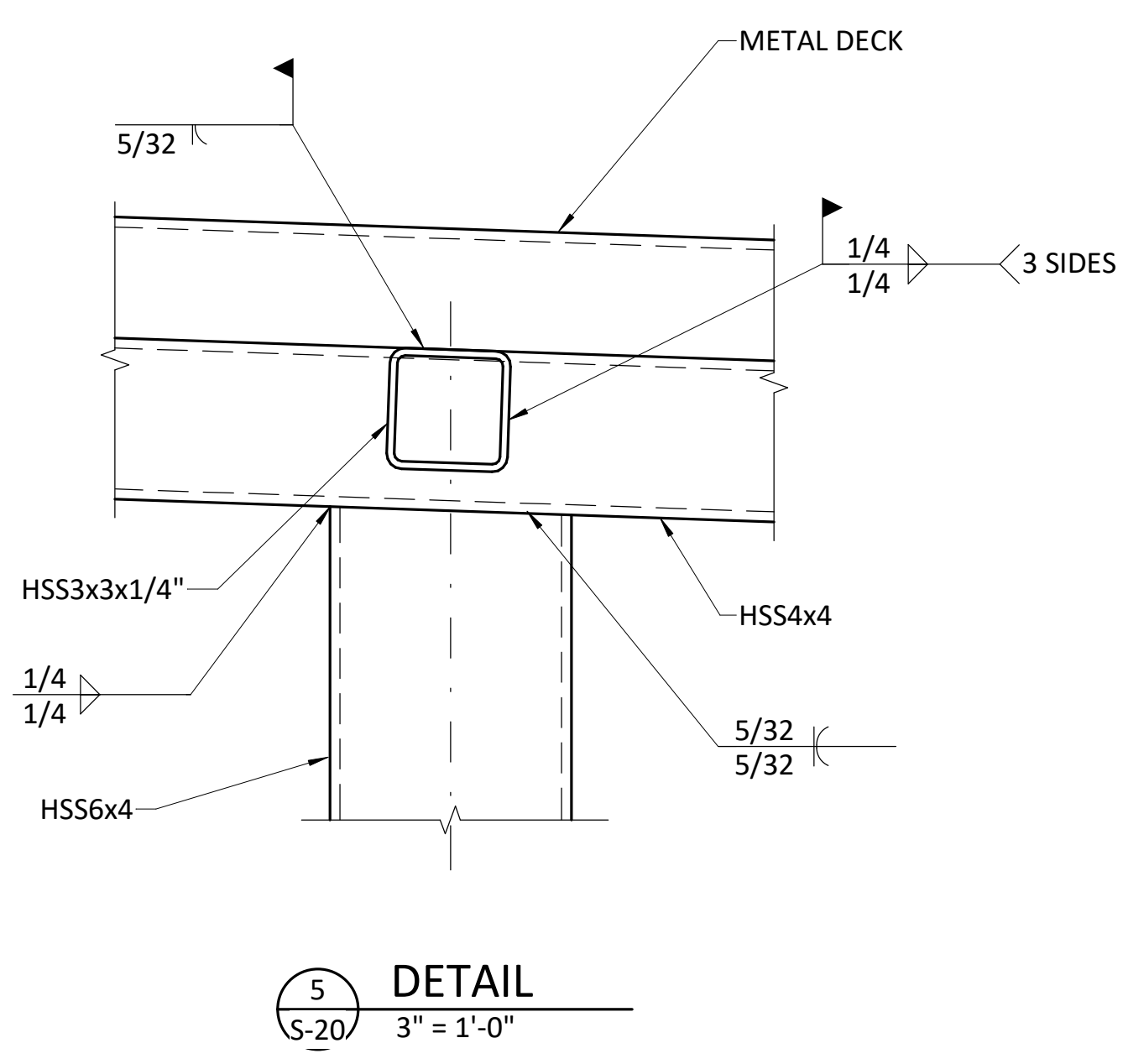
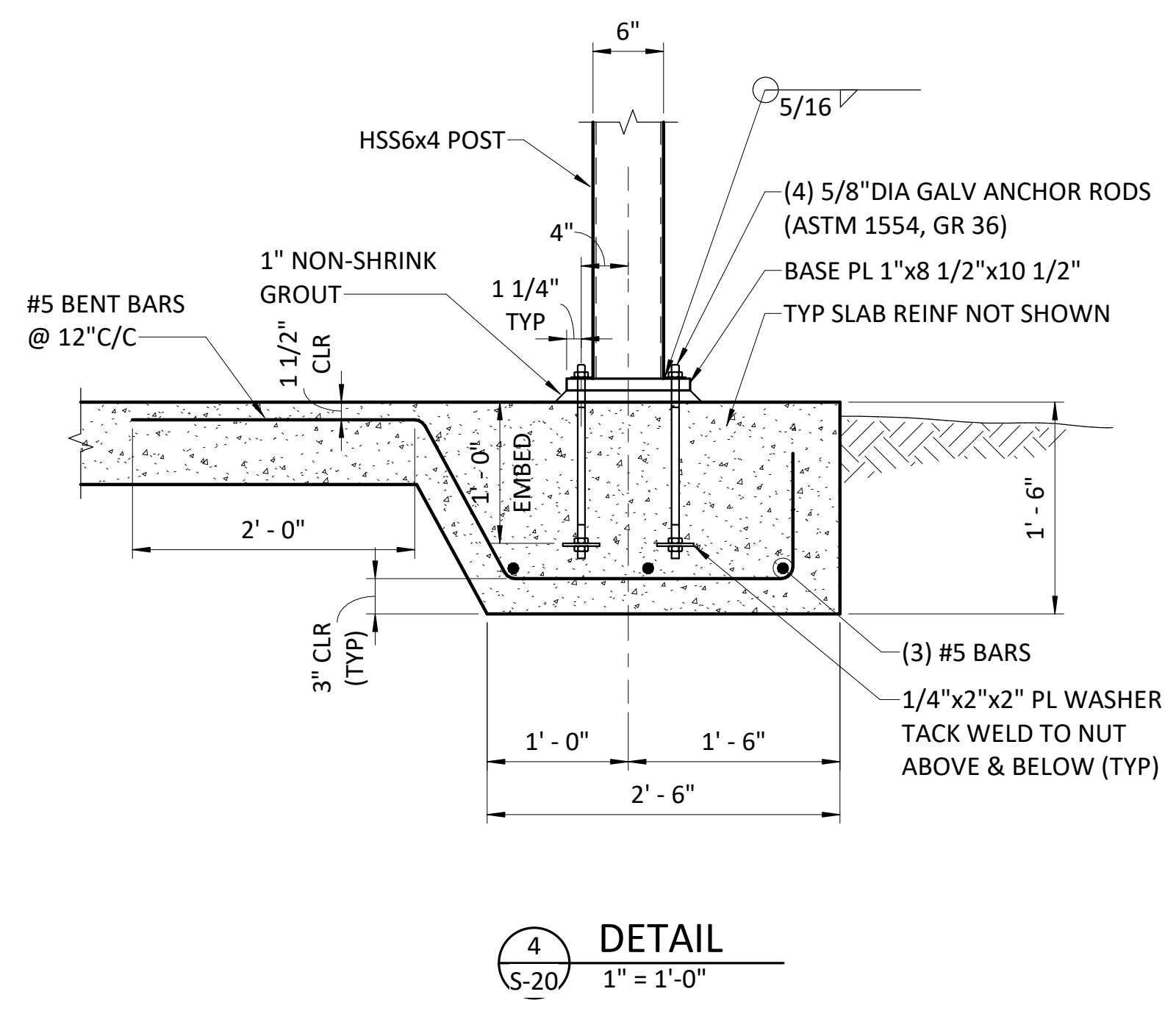
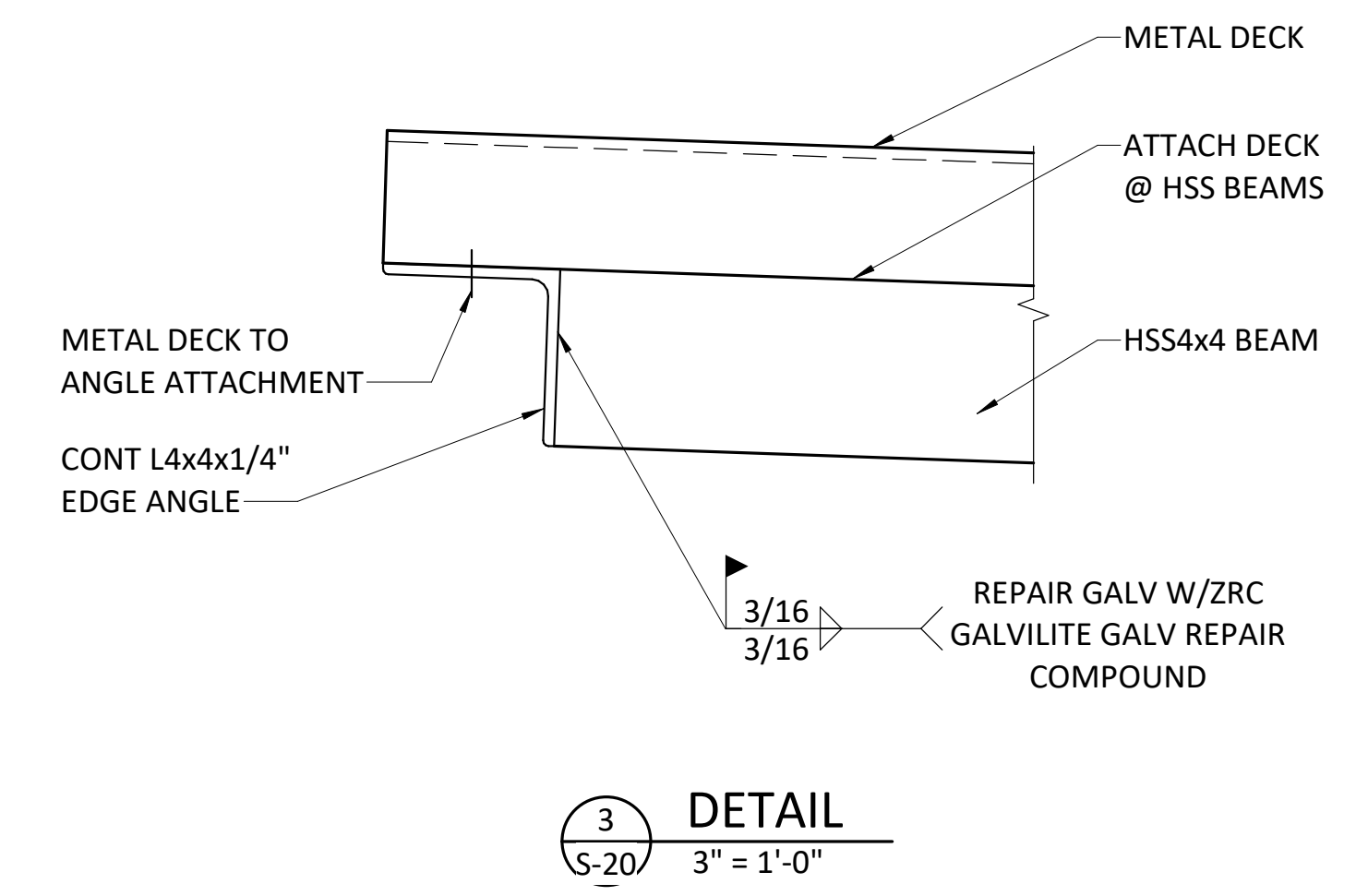
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|---|----------|----------------|-----------|----------|-----|-------|-----------|-----------|----------------------|
| F&N JOB NO.   | SWB19118 | DATE           | 1/30/2020 | DESIGNED | CCG | DRAWN | ZAS       | CHECKED   | DTB                  |
| ISSUE   | NO.      | ADDITIONAL NO. | 5         | BY       | CCG | DATE  | 9/17/2021 | FILE NAME | WTU-SWB19118-CHF-R19 |
| Bar is one inch on original drawing. If not one inch on this sheet, adjust scale. |          |                |           |          |     |       |           |           |                      |
| SHEET   | CH-4     |                |           |          |     |       |           |           |                      |
| SEQ   |          |                |           |          |     |       |           |           |                      |



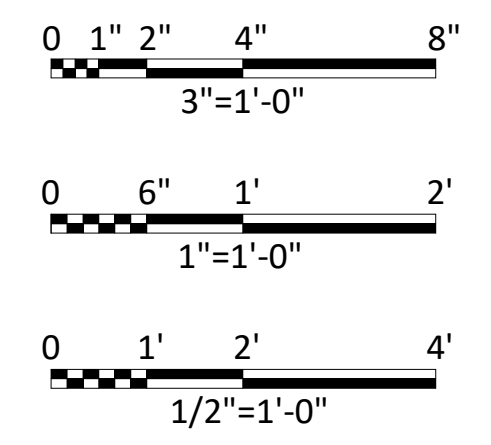




- GENERAL NOTES:**
- CANOPY SHALL BE GROUNDED PER THE NATIONAL ELECTRICAL CODE.
  - ALL STEEL SHALL BE HOT-DIP GALVANIZED PER ASTM A123, A153.
  - METAL DECK SHALL HAVE G90 GALVANIZED COATING. PREPARE GALVANIZED SURFACES AND SHOP PRIME. FIELD PAINT. SEAL JOINTS WITH CONTINUOUS BEAD OF SILICONE BEFORE LAPPING DECK SHEETS TOGETHER.
  - #12 SDS FASTENERS SHALL BE 18-8 STAINLESS STEEL WITH NEOPRENE WASHERS.

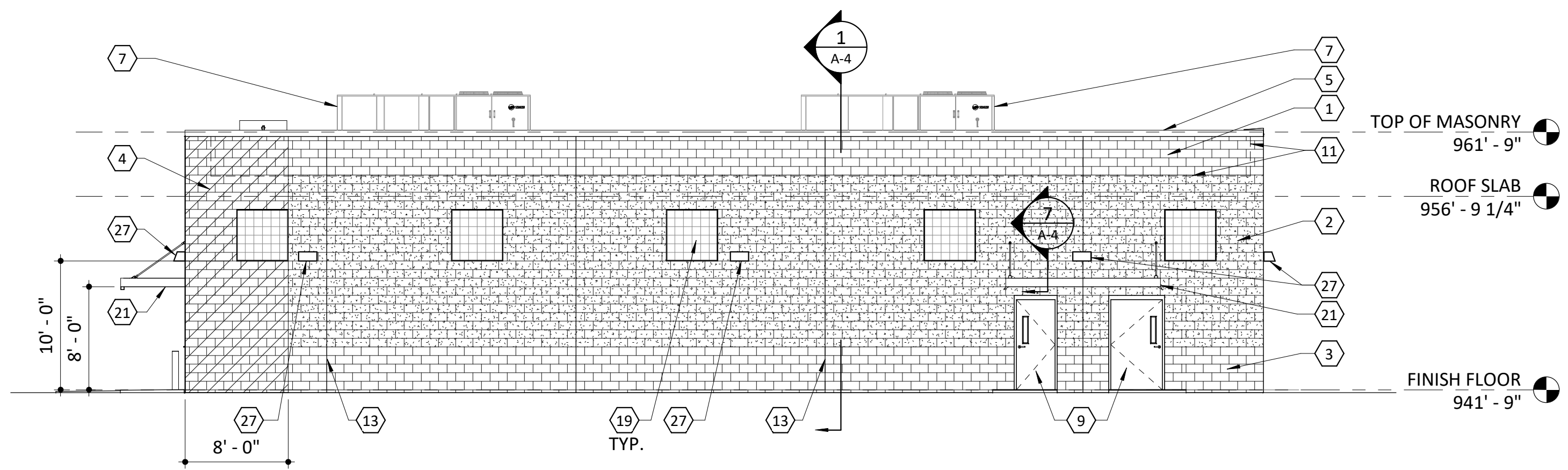


- NOTES:**
- ALL BOLTS, WASHERS, NUTS AND OTHER FASTENERS SHALL BE STAINLESS STEEL.

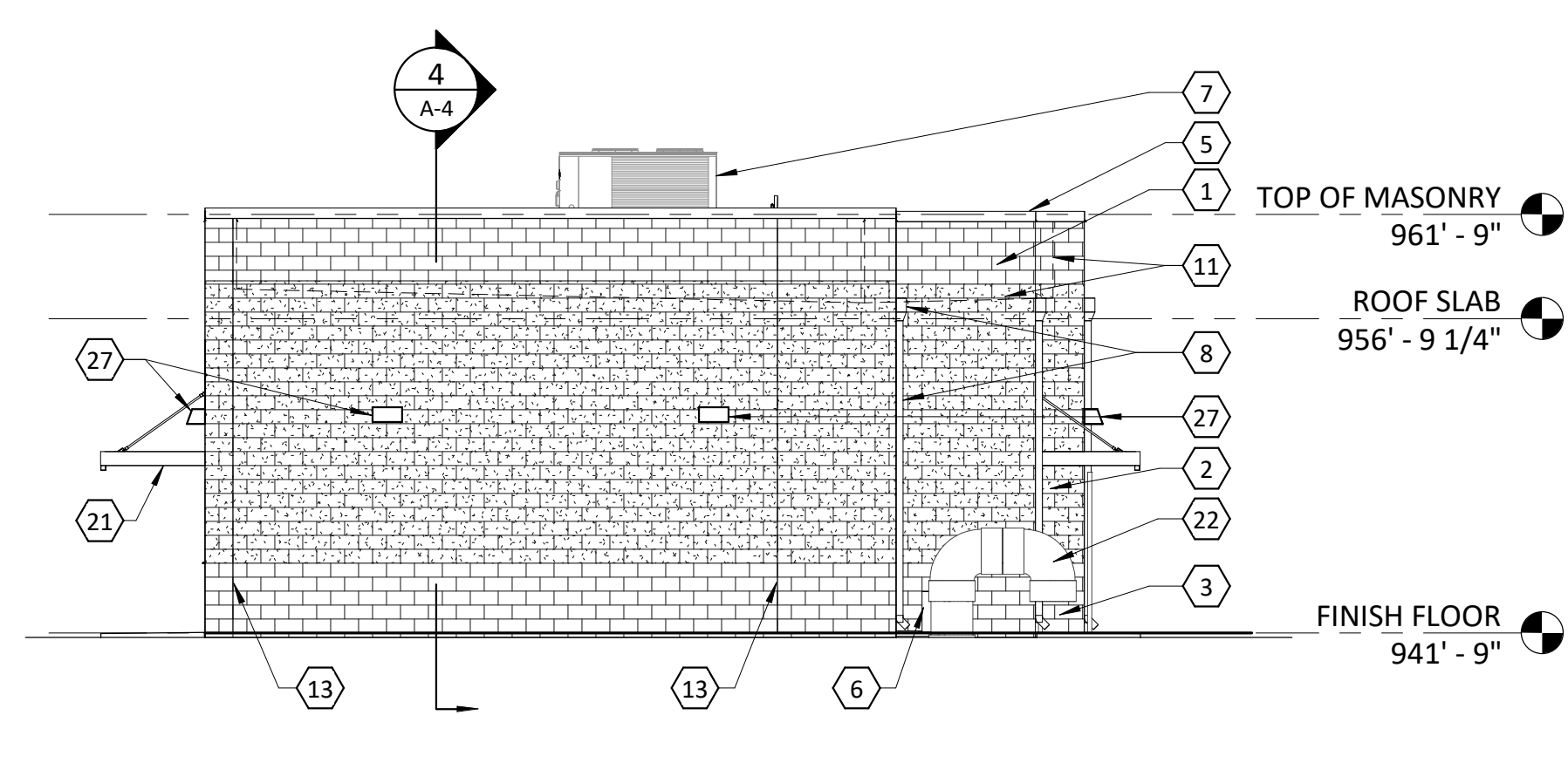


|   |                                |
|---|--------------------------------|
| F&N JOB NO.   | SWB19118                       |
| DATE  | 08/11/21                       |
| DESIGNED  | ACD                            |
| DRAWN   | JLM                            |
| REUSED  |                                |
| CHECKED   |                                |
| FILE NAME   | N:\ARC\ARC-SWB19118-CH-F&N.rvt |
| ISSUE   |                                |
| ADDENDUM NO.  | 3                              |
| NO.   | 0                              |
| VERIFY SCALE  | 1" = 1'-0"                     |
| Bar is one inch on original drawing. If not one inch on this sheet, adjust scale. |                                |
| SHEET   | S-20                           |
| SEQ.  |                                |

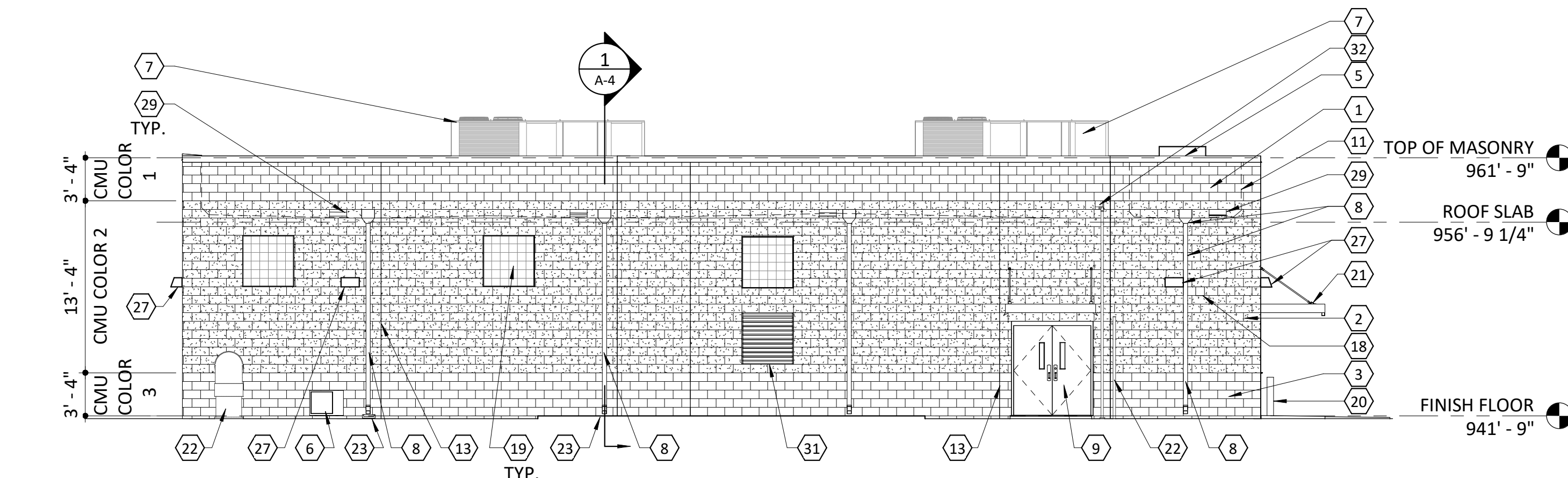




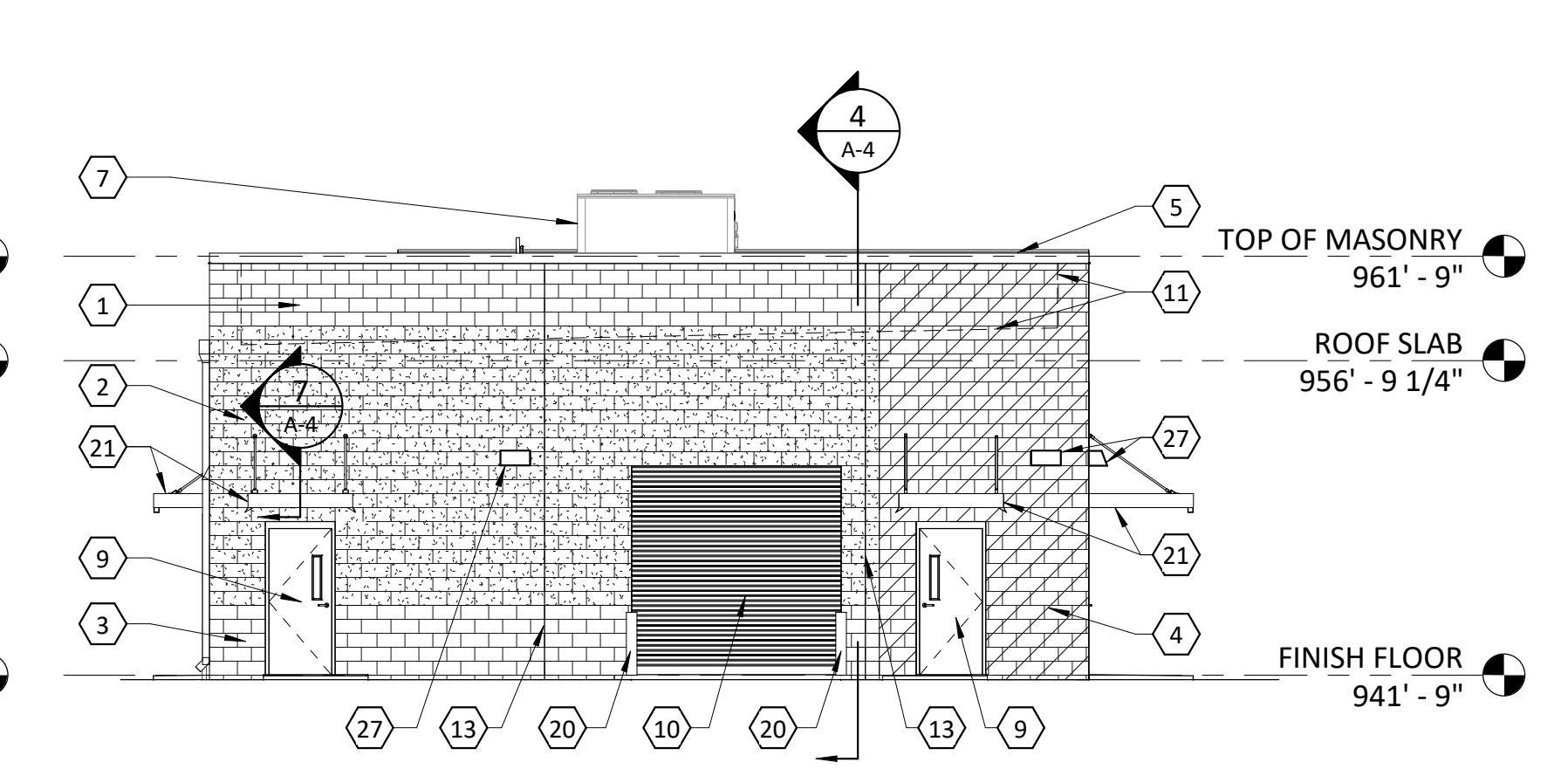
**1 WEST ELEVATION**  
1/8" = 1'-0"



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



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



**4 NORTH ELEVATION**  
1/8" = 1'-0"

**GENERAL NOTES**

- REFER TO SHEET A-3 FOR EXTERIOR FINISH SCHEDULE.

**NOTES BY SYMBOL " X "**

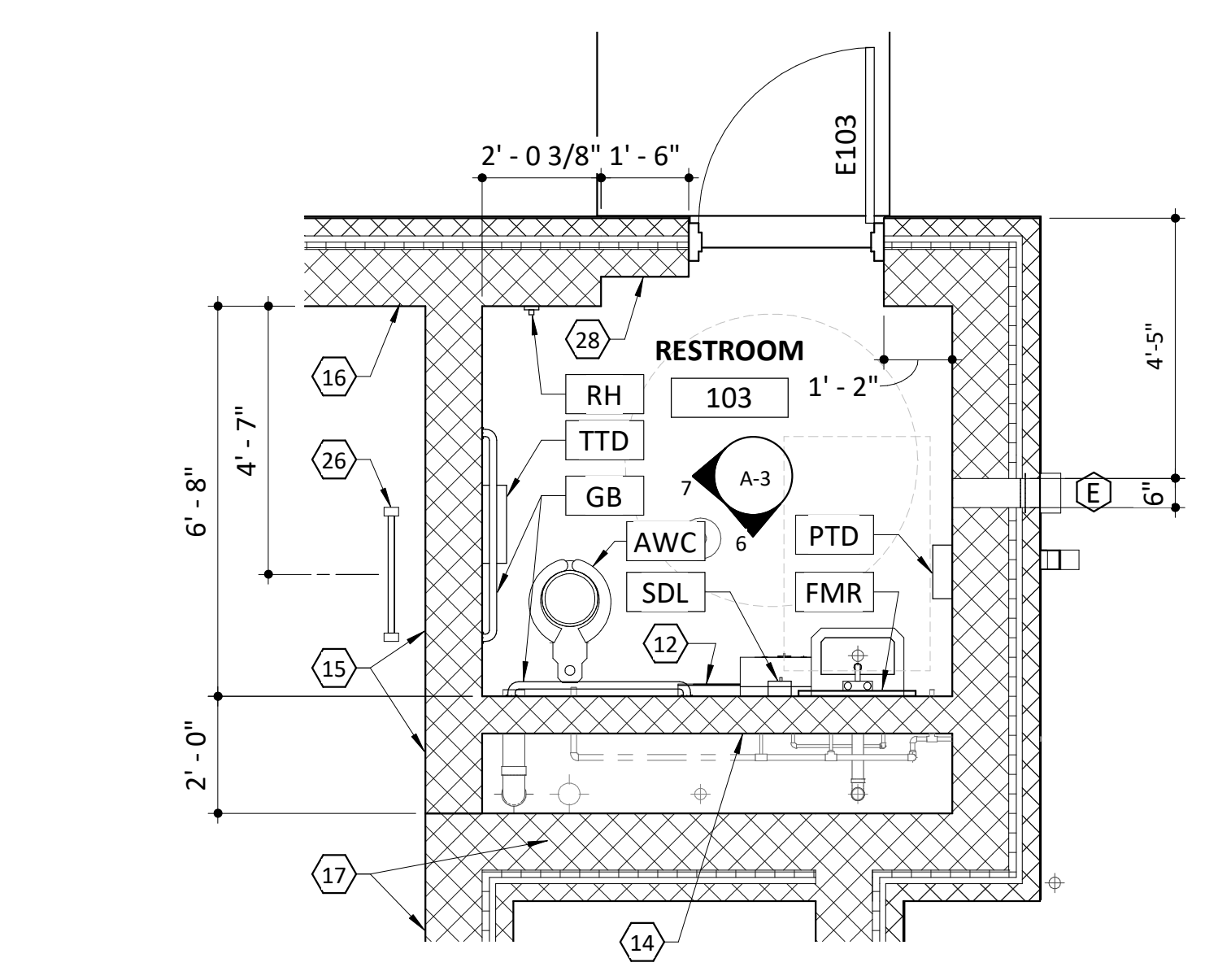
- SMOOTH FACE SCORED CMU - COLOR 1. SEE FINISH SCHEDULE.
- SPLIT FACE CMU - COLOR 2.
- SPLIT FACE CMU - COLOR 3.
- GLAZED FACE CMU - COLOR 4.
- PREFINISHED METAL COPING.
- MECHANICAL EQUIPMENT, RE: MECHANICAL.
- ROOFTOP UNIT, RE: MECHANICAL.
- METAL ROOF SCUPPER AND DOWNSPOUT. REFER TO DETAIL 8/A-3 FOR ADDITIONAL INFORMATION.
- DOOR(S) AND FRAME AS SCHEDULED.
- OVERHEAD COILING DOOR.
- ROOF AND PARAPET BEYOND.
- HEATER BELOW LAVATORY, RE: MECHANICAL.
- CONTROL JOINT, TYPICAL.
- 8" CMU PLUMBING CHASE WALL UP TO 8" (ABOVE CEILING).
- 12" CMU PARTITION UP TO CONCRETE DECK.
- 12" CMU.
- 12" CMU, 1 1/2" RIGID INSULATION, AIR SPACE AND 4" CMU, UP TO CONCRETE DECK.
- MECHANICAL VENT CAP, RE: MECHANICAL.
- 4'-0"x4'-0" HURRICANE RESISTANT GLASS BLOCK WINDOW.
- BOLLARD, RE: 5/A-10.
- ALUMINUM CANOPY, RE: 6/A-4.
- MECHANICAL PIPING, RE: MECHANICAL.
- CONCRETE SPLASHBLOCK, TYPICAL.
- PT-1 WALL FINISH AS SCHEDULED.
- TANKLESS - WATER HEATER, RE: PLUMBING.
- METAL ACCESS LADDER. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
- EXTERIOR LIGHT FIXTURE, RE: ELECTRICAL.
- 8" CMU.
- OVERFLOW SCUPPER, TYPICAL.
- CONCRETE CURB, RE: STRUCTURAL.
- LOUVER, RE: MECHANICAL.
- CONDENSATE DRAIN LINE OPENING, 8" X 8", REFER TO DETAIL 5/A-6 FOR ADDITIONAL INFORMATION.

**ELECTRICAL BUILDING INTERIOR FINISH SCHEDULE**

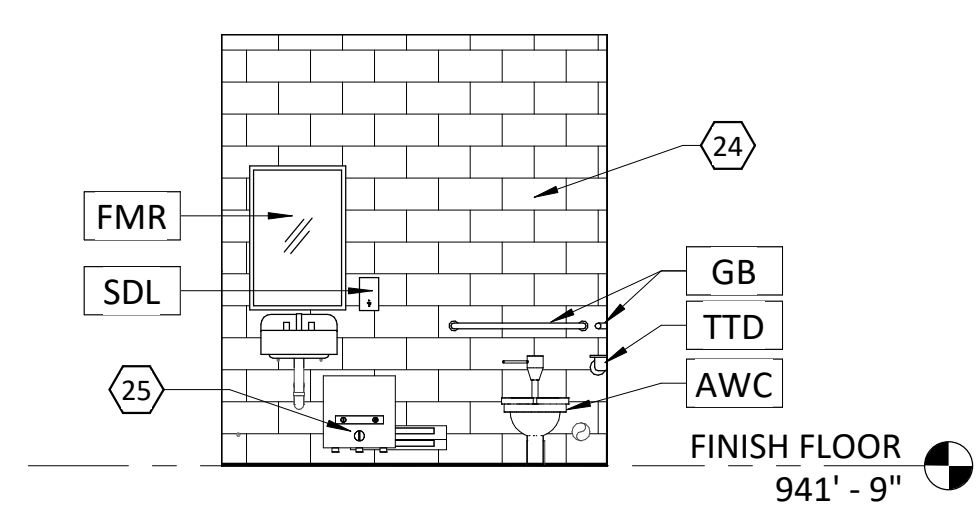
| ROOM NO. | ROOM NAME       | FLOOR | WALL FINISH |      |       |      | CEILING        |
|----------|-----------------|-------|-------------|------|-------|------|----------------|
|          |                 |       | NORTH       | EAST | SOUTH | WEST |                |
| 101      | ELECTRICAL ROOM | S.C.  | PT-1        | PT-1 | PT-1  | PT-1 | EXPOSED STRUCT |
| 102      | CONTROL ROOM    | S.C.  | PT-1        | PT-1 | PT-1  | PT-1 | EXPOSED STRUCT |
| 103      | RESTROOM        | S.C.  | PT-1        | PT-1 | PT-1  | PT-1 | FPC            |
| 104      | STAIR           | S.C.  | PT-1        | PT-1 | PT-1  | PT-1 | EXPOSED STRUCT |

**ELECTRICAL BUILDING EXTERIOR FINISH SCHEDULE**

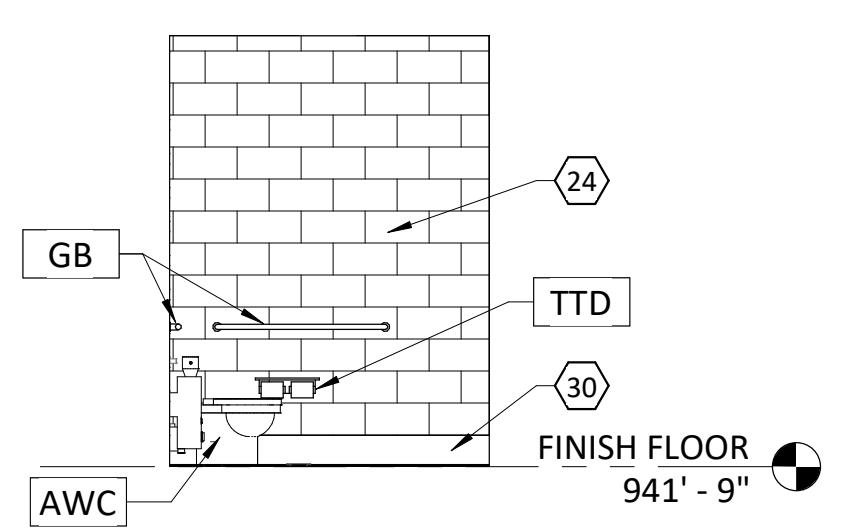
- | MATERIAL   | COLOR TO MATCH                               |
|--|--|
| 1. CMU SMOOTH FACE, TOP BAND. COLOR 1  | *4" CMU SMOOTH FACE COLOR: 707 - AZTEC       |
| 2. CMU SPLIT FACE, MIDDLE BAND. COLOR 2  | *4" CMU SPLIT FACE COLOR: 707 - GOLD CANYON  |
| 3. CMU SPLIT FACE, BASE BAND. COLOR 3  | *4" CMU SPLIT FACE COLOR: 707 - APACHE BROWN |
| 4. METAL COPING @ CMU. ALL METAL LOUVERS. ALL EXTERIOR HOLLOW METAL DOORS. ALL METAL THRU WALL FLASHING ALL METAL FASCIA. ALL METAL LADDERS. | *MEDIUM BRONZE KYNAR 500                     |
| 5. STEEL BOLLARDS  | *SHERWIN WILLIAMS SW 6910 DAISY              |
| 6. SITE RAILING  | *BERRIDGE METAL PANEL COLOR SIERRA TAN       |
| 7. PT-1 - INTERIOR WALLS SURFACES  | *SW 7005 PURE WHITE                          |
| 8. S.C. SEALED CONCRETE  | *REFER TO SPECS                              |
| 9. FRP - FIBERGLASS REINFORCED PANEL CEILING.  | *REFER TO SPECS                              |
| 10. GLAZED CMU, COLOR 4  | *4" CMU GLZED FINISH COLOR: RED              |



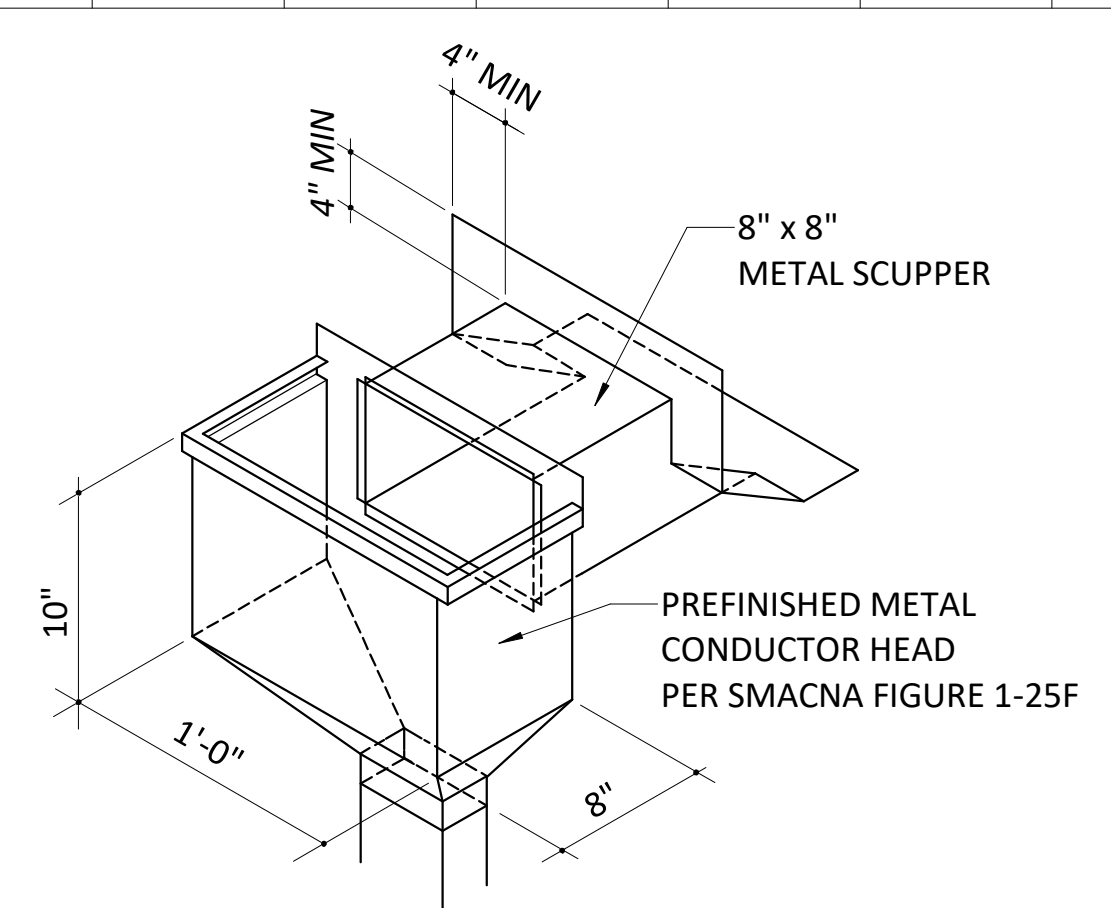
**5 ENLARGED PARTIAL FLOOR PLAN**  
3/8" = 1'-0"



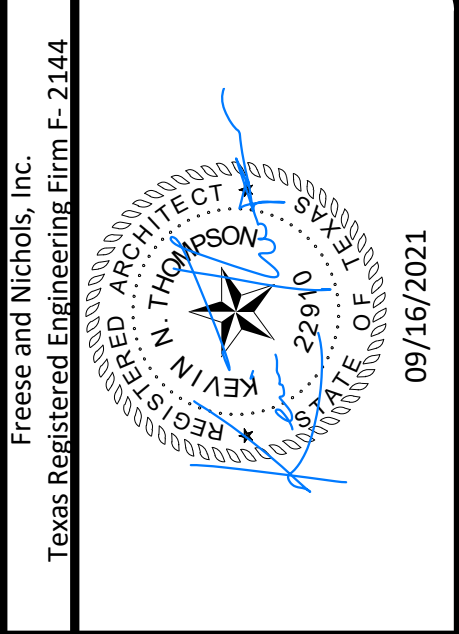
**6 RESTROOM 122 SOUTH**  
1/4" = 1'-0"



**7 RESTROOM 122 WEST**  
1/4" = 1'-0"



**8 SCUPPER ISOMETRIC**  
1 1/2" = 1'-0"



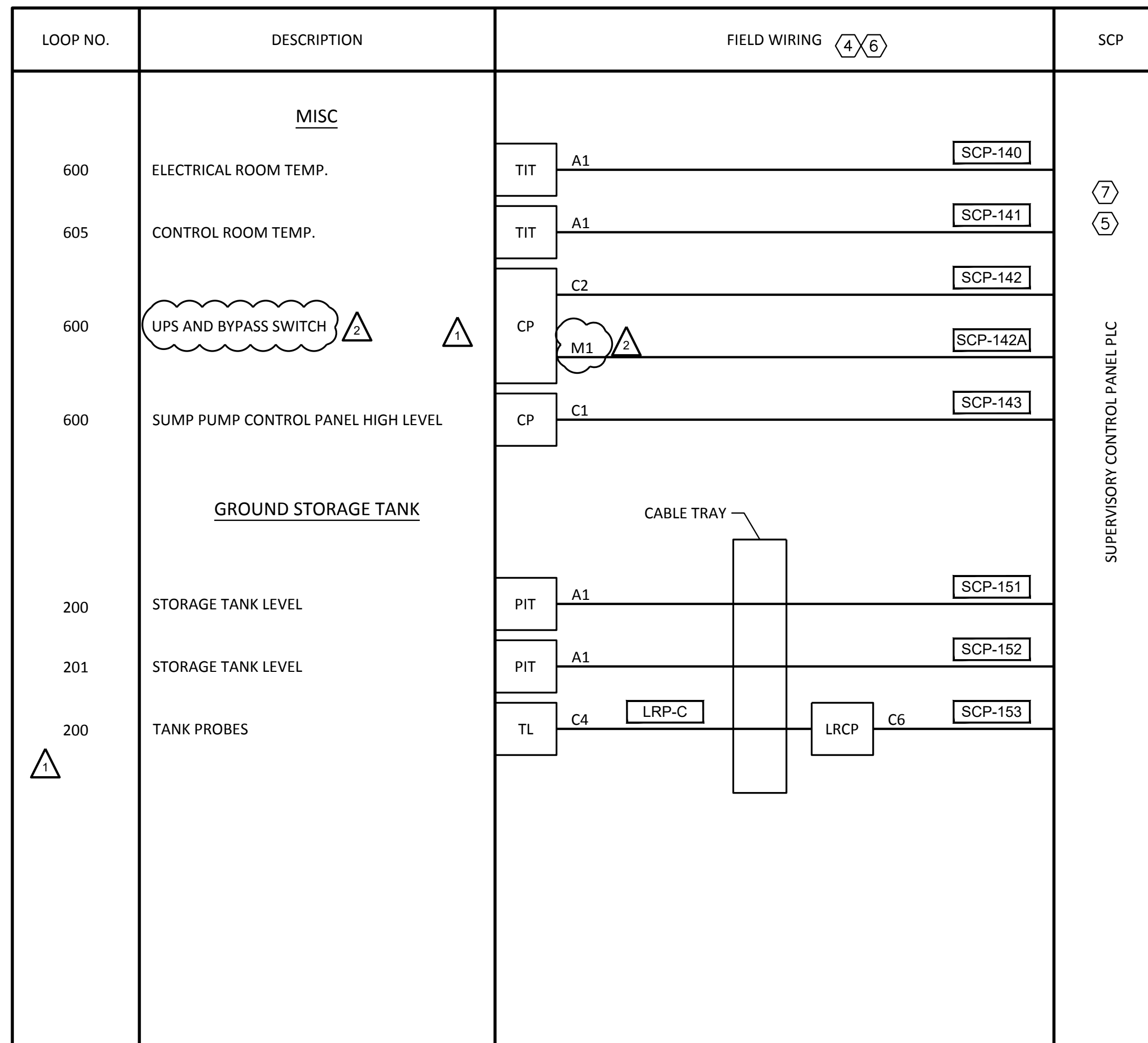
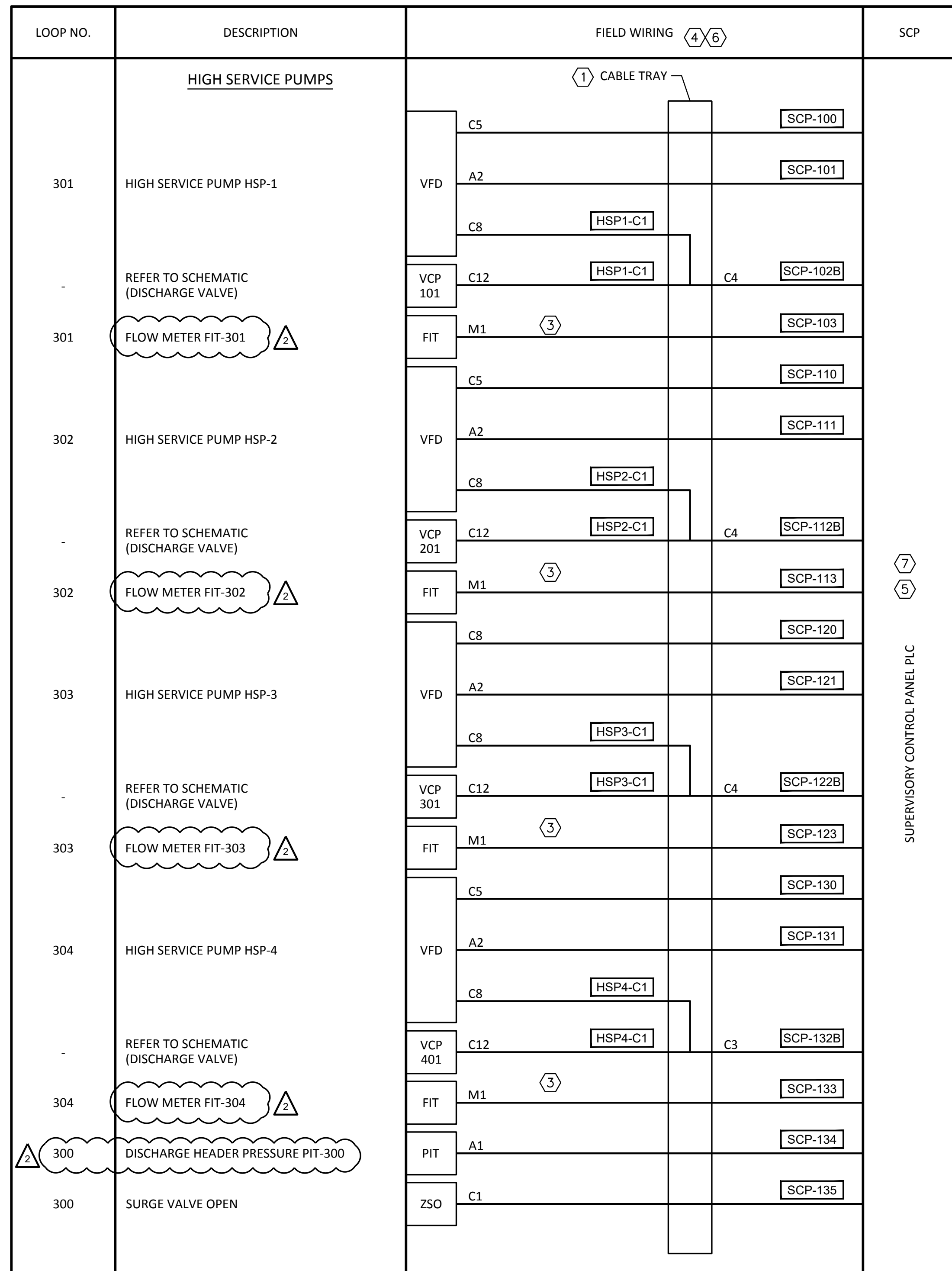
**FREES & NICHOLS**  
9601 McAllister Freeway, Suite 1008  
San Antonio, TX 78216  
Phone - (210) 298-3800  
Web - www.freese.com

SAN ANTONIO WATER SYSTEM  
**TURTLE CREEK NO. 3 PRIMARY PUMP STATION**  
ARCHITECTURE  
**ELECTRICAL BUILDING EXTERIOR ELEVATIONS**

| DESIGNED   | DRAWN      | REVISION | CHECKED | PKI |
|------------|------------|----------|---------|-----|
| 08/11/2021 | 09/16/2021 |          |         |     |

FILE NAME: I:\ARC\ARC-SWB19118-CH-FR-15.rvt  
VERIFY SCALE: Bar is one inch on original drawing. If not one inch on this sheet, adjust scale.





**NOTES BY SYMBOL "②"**

- TC: TRAY CABLE (TYPICAL ALL SHEETS).
- CONTAINS SPARE WIRES.
- RUN CAT-6 CABLE TO EACH FLOW METER.
- FOR UNDERGROUND PORTIONS OF CIRCUITS, USE CONDUIT SIZES IN DUCTBANK SCHEDULES.
- REFER TO I&C DRAWINGS FOR DETAILS.
- ALL WIRES SHOWN ON THE INTERFACE, DIAGRAM SHALL BE INSTALLED WHETHER SHOWN ON THE FLOOR PLAN OR NOT.
- ALL WIRES SHALL BE TERMINATED IN THE ENCLOSURE.

| CONTROL & INSTRUMENTATION WIRE/CONDUIT SCHEDULE |                |     |                       |
|---|----------------|-----|-----------------------|
| C1  | 2#14, 3/4"C    | A1  | 1Pr#16 TSP, 3/4"C     |
| C2  | 4#14, 3/4"C    | A2  | 2-1Pr#16 TSP, 3/4"C   |
| C3  | 6#14, 1"C      | A3  | 3-1Pr#16 TSP, 3/4"C   |
| C4  | 8#14, 1"C      | A4  | 4-1Pr#16 TSP, 1"C     |
| C5  | 10#14, 1"C     | A5  | 5-1Pr#16 TSP, 1"C     |
| C6  | 12#14, 1-1/4"C | A6  | 6-1Pr#16 TSP, 1-1/4"C |
| C7  | 14#14, 1-1/4"C | A7  | 7-1Pr#16 TSP, 2"C     |
| C8  | 16#14, 1-1/4"C | A8  | 8-1Pr#16 TSP, 2"C     |
| C9  | 18#14, 1-1/4"C | A9  | 9-1Pr#16 TSP, 2"C     |
| C10   | 20#14, 1-1/4"C | A10 | 10-1Pr#16 TSP, 2"C    |
| C11   | 22#14, 1-1/2"C | A11 | 11-1Pr#16 TSP, 2"C    |
| C30   | 60#14, 3-1/2"C | M1  | CAT-6, 1"C            |
| C37   | 74#14, 4"C     | M2  | 2-CAT-6, 1-1/2"C      |
|   |                | M3  | 3-CAT-6, 2"C          |
|   |                | M4  | 4-CAT-6, 2"C          |

**CONTROL & INSTRUMENTATION WIRE/CONDUIT TABLE NOTES:**

1) NOT ALL POSSIBLE COMBINATIONS ARE LISTED. INCLUDE A SEPARATE GROUND WIRE IN EACH CONDUIT RUN.

# REPRESENTS PAIR OF WIRE  
 EXAMPLE C10 = 20#14 WIRES  
 EXAMPLE C20 = 40#14 WIRES

CH  
 C = CONTROL

2) ANALOG CABLES ARE INTENDED TO BE INDIVIDUALLY INSULATED TWISTED SHIELDED PAIRS UNLESS OTHERWISE NOTED ON THE DRAWING.

**GAI**

Gupta & Associates, Inc.  
 CONSULTING ENGINEERING  
 Registration No. F-2583

13717 Neuman Road  
 San Antonio, Texas 78226  
 Tel: 972-986-7661  
 Fax: 972-986-7125  
 www.gaiinc.com

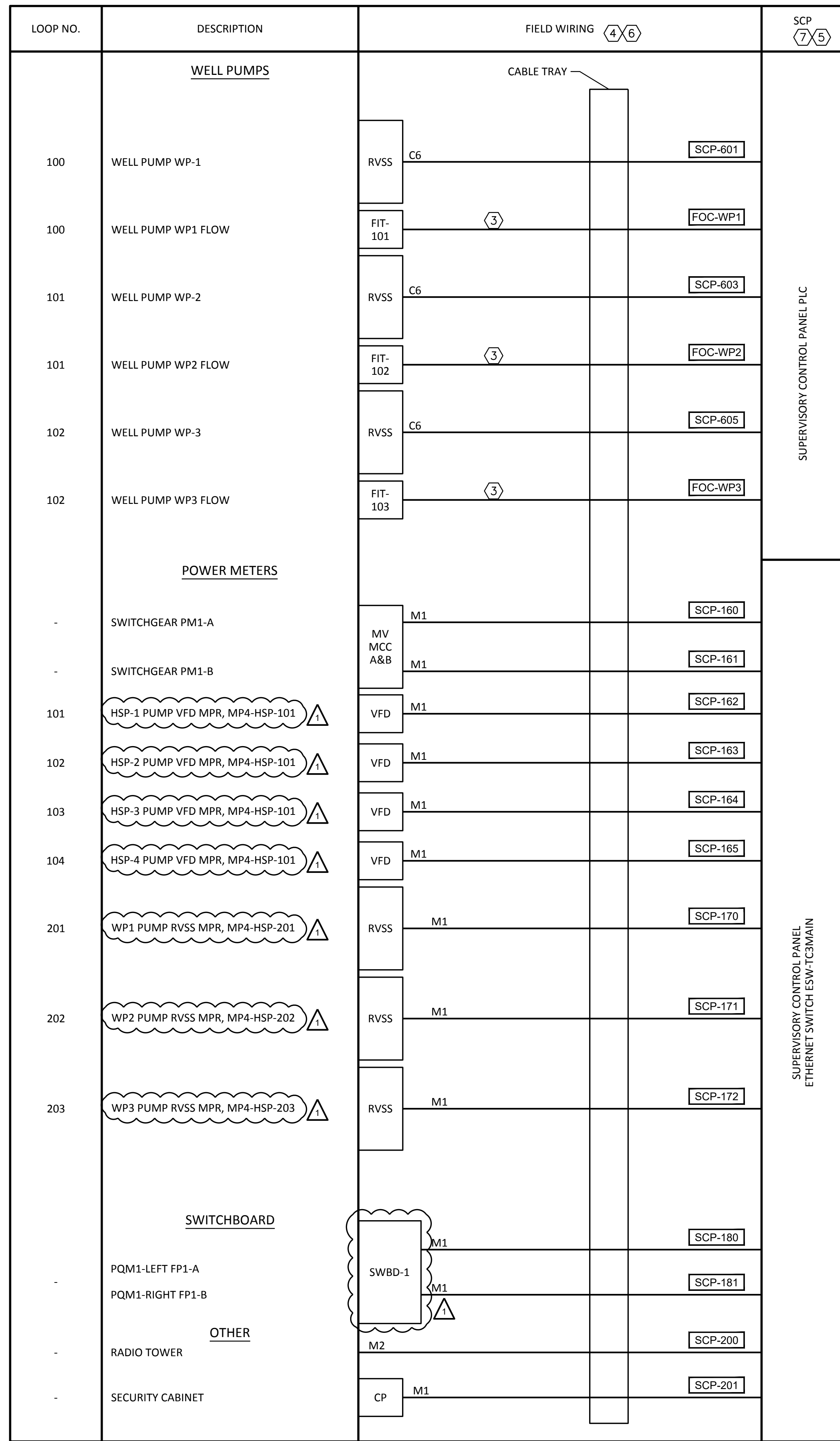


**FREES NICHOLS**  
 9601 McAllister Freeway, Suite 1008  
 San Antonio, Texas 78216  
 Phone - (210) 298-3800  
 Web - www.frees.com

**TURTLE CREEK NO. 3 PRIMARY PUMP STATION**

|       |       |            |    |                 |
|-------|-------|------------|----|-----------------|
| NO. 1 | ISSUE | DATE       | BY | DESCRIPTION     |
| 1     | AS    | 09/10/2021 | AS | SWB191118       |
| 2     | AS    | 09/16/2021 | AS | DATE 08/11/2021 |
|       |       |            |    | DESIGNED LP     |
|       |       |            |    | DRAWN SAH       |
|       |       |            |    | REVISIONS       |
|       |       |            |    | CHECKED ER      |
|       |       |            |    | VERIFIED VKG    |
|       |       |            |    | FILE NAME       |
|       |       |            |    | 1968_EB-07.dwg  |

ACAD Ref: 23.1s (LMS Tech)  
 Filename: Z:\1968\_SAWS Turtle Creek #3 Primary Pump Station\5 Drawings\Electrical\Working\1968\_EB-08.dwg  
 Last Saved: 9/15/2021 2:15 PM. Saved By: jho



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Freeze and Nichols, Inc.  
 Texas Registered Engineering Firm F-2144

**NOTES BY SYMBOL "④"**

1. TC: TRAY CABLE (TYPICAL ALL SHEETS).
2. CONTAINS SPARE WIRES.
3. FIBER TO EACH FLOWMETER.
4. FOR UNDERGROUND PORTIONS OF CIRCUITS, USE CONDUIT SIZES IN DUCTBANK SCHEDULES.
5. REFER TO I&C DRAWINGS FOR DETAILS.
6. ALL WIRES SHOWN ON THE INTERFACE, DIAGRAM SHALL BE INSTALLED WHETHER SHOWN ON THE FLOOR PLAN OR NOT.
7. ALL WIRES SHALL BE TERMINATED IN THE ENCLOSURE.

| Cable | Wire           | Cable | Wire                  |
|-------|----------------|-------|-----------------------|
| C1    | 2#14, 3/4"C    | A1    | 1Pr#16 TSP, 3/4"C     |
| C2    | 4#14, 3/4"C    | A2    | 2-1Pr#16 TSP, 3/4"C   |
| C3    | 6#14, 1"C      | A3    | 3-1Pr#16 TSP, 3/4"C   |
| C4    | 8#14, 1"C      | A4    | 4-1Pr#16 TSP, 1"C     |
| C5    | 10#14, 1"C     | A5    | 5-1Pr#16 TSP, 1"C     |
| C6    | 12#14, 1-1/4"C | A6    | 6-1Pr#16 TSP, 1-1/4"C |
| C7    | 14#14, 1-1/4"C | A7    | 7-1Pr#16 TSP, 2"C     |
| C8    | 16#14, 1-1/4"C | A8    | 8-1Pr#16 TSP, 2"C     |
| C9    | 18#14, 1-1/4"C | A9    | 9-1Pr#16 TSP, 2"C     |
| C10   | 20#14, 1-1/4"C | A10   | 10-1Pr#16 TSP, 2"C    |
| C11   | 22#14, 1-1/2"C | A11   | 11-1Pr#16 TSP, 2"C    |
| C30   | 60#14, 3-1/2"C | M1    | CAT-6, 1"C            |
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**TURTLE CREEK NO. 3 PRIMARY PUMP STATION**

ELECTRICAL  
**SCP & PLC**  
**INTERFACE DIAGRAM - II**

SAN ANTONIO WATER SYSTEM

|     |               |            |    |            |          |       |          |         |                |
|-----|---------------|------------|----|------------|----------|-------|----------|---------|----------------|
| NO. | ISSUE         | DATE       | BY | DATE       | DESIGNED | DRAWN | REVISION | CHECKED | FILE NAME      |
| 0   | ADDENDUM NO 5 | 09/16/2021 | AS | 08/11/2021 | LP       | SAH   |          |         | 1968_EB-08.dwg |

Bar is one inch on original drawing. If not one inch on this sheet, adjust scale.

VERIFY SCALE 1

SHEET **EB-8**

SEQ.