



**SAN ANTONIO WATER SYSTEM  
DOS RIOS WRC RE-RATING  
HEADWORKS IMPROVEMENTS AND  
PROCESS ENHANCEMENTS PHASE I  
SAWS Job No. 08-6502  
SAWS Solicitation No. B-10-057-DD**

**ADDENDUM No. 3  
December 9, 2010**

**To Bidder of Record:**

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

**QUESTIONS AND CLARIFICATIONS**

**Q1. The specifications are calling out C110 fittings on this particular project and I wanted to request approval for C153 MJ and flange fittings.**

A1. Fittings meeting the requirements of AWWA C153 will be acceptable. See modifications made to Section 02616 as part of this addendum.

**Q2. On Sheet E-15, why are the three (3) combo starters feeding the Sample Pumps shown as dashed lines?**

A2. Dashed lines represent the combination starter enclosure. Refer to revisions to Sheet E-15 for changes to Sample Pumps (which will be provided as part of this addendum).

**Q3. On Sheet E-15, the one-line diagram shows a 30A NF safety switch feeding the Plant Influent Distribution Chamber sluice gates. Sheet EA-1 shows the NF safety switch and a combination starter feeding the Plant Influent Distribution Chamber sluice gates. Is the combination starter to be supplied by the electrical contractor?**

A3. The combination starter shown on the sluice gates is internal to the motor operator. It is not necessary to provide an external combination starter for the sluice gates, only the NF safety switch.

**Q4. By symbol, the 54-inch valves on the force main line and bypass line are gate valves, correct? Are they double disc (as per Section 02640, Paragraph 2.03) or resilient**

**seated (as per Section 02640, Paragraph 2.04)? Are they MJ? Do they need to be restrained? If so, how?**

A4. The 54-inch valves on the force main and bypass line are gate valves. They are the double disc type, are MJ and do need to be restrained. Megalugs are acceptable for restraint.

**Q5. Refer to Section 02616, Paragraph 3.04. Are restrained joints required? Are Megalugs (or equal) acceptable as a means of restraint for MJ fittings?**

A5. Restrained joints are required and Megalugs (or equal) are acceptable as a means of restraint.

**Q6. Section 02616 references standard ASTM C153 DIP compact fittings (3" – 16"). Section 02616, Paragraph 2.01.B. says that DI fittings shall conform to AWWA C110 (Full Body Fittings). SAWS specification and industry standard is C153 compact fittings for all sizes of MJ underground fittings and C110 full body fittings for above ground flange fittings. What type of underground fitting do you want (C153 3" – 16" or C153 for all sizes)?**

A6. Fittings meeting the requirements of AWWA C153 will be acceptable. See modifications made to Section 02616 as part of this addendum.

**Q7. Section 02616, Paragraph 1.05.C. says that all pipe and fittings shall be manufactured in the United States. SAWS is not a domestic only. Do fittings need to be domestic only?**

A7. As part of this addendum, this paragraph has been removed from the specification section.

**Q8. Section 02616 details a variety of pressure classes in relation to size for DIP. SAWS specifications mirror that which is detailed in Section 02616. Section 15072, Paragraph 2.01.A. states that DIP should be Pressure Class 250. Which would you like?**

A8. Follow Section 02616 guidelines for buried piping and follow guidelines in Section 15072 for above ground piping.

**Q9. Sheets CP-6 and CP-7 (in Plan view) show the 54" bypass piping as HDPE. Sheets C-2, CP-6 (in Profile view), CP-8 and CP-9 show the 54" bypass piping as DI. Which type of pipe would you like for the 54-inch bypass piping?**

A9. The 54" bypass piping should be DI. Sheets CP-6 and CP-7 have been updated as part of this addendum.

**Q10. For the 54" FM-DI/P, should this be push-on or restraint system?**

A10. Restrained piping should be used.

**Q11. There are four (4) 1-1/2" hose bibs shown on Sheet CP-4. The symbol is not listed on any table but appears to be a Siamese Style (2-headed). There is no mention of hose racks or NPW signs on Sheet CP-4 but details are found in the Mechanical details sheets. Do you want single 1-1/2" hose bibs at four (4) locations on Sheet CP-4 as drawn?**

A11. The symbol for a 'YARD HOSE STATION' is given on Sheet M-1 (under 'VALVE SYMBOLS'). Single 1-1/2" hose bibs, along with hose racks and NPW signs, are required at the four (4) locations shown on Sheet CP-4. Sheet CP-4 will be updated (as part of this addendum) to reflect this.

**Q12. On Sheet EY-4, for DB-01, DB-05 and DB-14, where is cable "MCCSG1-FB01C" type found?**

A12. Refer to Sheet EY-6 for callout of fiber optic cable (which will be revised as part of this addendum).

**Q13. Can you clarify which pipe supports to use for the 54" FM and 12" FM lines: Details AH/MZ-1 (as shown on Sheet MA-2), DA/CZ-4 and DG/CZ-4 or Details CE/CZ-3 and CF/CZ-3 as shown on Sheet CP-4?**

A13. The 54" FM will use Details CF/CZ-3, CG/CZ-3 and DA/CZ-4. The 12" FM (from Southside ISD) will use Details DG/CZ-4 and DA/MZ-4. All other pipe supports will follow Detail AH/MZ-1.

**Q14. What kind of PVC pipe do you want for the PW and NPW lines? I did not see a specification for buried pressure PVC piping.**

A14. Section 02623, Polyvinyl Chloride (PVC) Pressure Pipe, has been added to the Contract Documents as part of this addendum.

**Q15. Are the hose bibs shown on Sheet CP-4 to be per Detail BF/MZ-2? There is no reference and no specification.**

A15. Yes, the hose bibs shown on Sheet CP-4 shall be as per Detail BF/MZ-2. Sheet CP-4 will be updated (as part of this addendum) to reflect this.

**Q16. Can you be more specific on which nozzle you want as per Detail BG/MZ-2? I can't find a nozzle in Seal Fast's catalogue that will work with a 1" yard hydrant (as per Detail BF/MZ-2).**

- A16. As part of this addendum, more detailed information has been added to Detail BG/MZ-2.
- Q17. Note 13 on Sheet E-2 calls for ductbank to be demolished. Can drawings of existing ductbank be provided so that the size and type of cables in this ductbank are known?**
- A17. Electrical Record Drawings will be added to the SAWS website as **Supplemental Information**. Note that additional work done internally (by SAWS) may not be reflected on these sheets. Also, some of the drawings provided are construction drawings (and not as-built drawings). Contractor shall still field verify prior to commencing work (as per Note 3 under 'COORDINATION' on Sheet G-3).
- Q18. Bid Item No. 6 requires the Contractor to vacuum excavate to locate underground electrical and/or fiber optic cables. Can drawings of existing 15Kv underground feeder and fiber optic cables be provided so that the number and location of the vacuum excavation can be determined?**
- A18. Electrical Record Drawings will be added to the SAWS website as **Supplemental Information**. Note that additional work done internally (by SAWS) may not be reflected on these sheets. Also, some of the drawings provided are construction drawings (and not as-built drawings). Contractor shall still field verify prior to commencing work (as per Note 3 under 'COORDINATION' on Sheet G-3). Fiber optic drawings are not available.
- Q19. Reference Section 01015 Paragraph 3.05. Is the temporary pipe and valves referenced here the same as the 54" Bypass shown on Sheets CP-8 and CP-9? If not, what size is the temporary pipe and how would it connect to the Flow Equalization Basins? Are there any drawings or details?**
- A19. The piping referenced in Section 01015 is the 54" Bypass line. Section 01015 has been modified (as part of this addendum) to clarify this.
- Q20. Section 17000, Paragraph 1.05.E. lists two (2) companies as Process Control System Suppliers (PCSSs). These two (2) companies should only be listed for the scope of work related to the Emerson Ovation programming. One of these companies should "sub-contract" with the PCSS (and not "be" the PCSS). Prime Controls is currently performing work at the Dos Rios facility as the PCSS, is in good standing with SAWS, and should not be excluded from the PCSS scope of work because of this wording. Please clarify.**
- A20. Section 17000, Paragraph 1.05.E. is not intended to exclude companies such as Prime Controls from serving as the I&C subcontractor, but the programming of the Emerson Ovation system (DCS) must be performed by one of the two (2) approved Process Control System Suppliers (PCSSs) listed in Section 17000, Paragraph 1.05.E. Section 17000, Paragraph 1.05.E. shall remain unchanged.

**Q21. Sheets E-12 and EF-1 show a “Drain Pump Control Panel”. Is this control panel to be provided by the electrical contractor or vendor? If it is to be supplied by the electrical contractor, provide a schematic diagram.**

A21. Drain Pump Control Panel shall be vendor provided.

**Q22. We would like to request that you approve J & S Gate Valves for the project. J&S manufactures a complete range of gate valves in sizes 2” through 72” including both resilient wedge and solid wedge designs. All J & S valves are manufactured with thick wall ductile iron bodies and bonnets. Thus, they conform to both C-509 and C-515 standards for resilient wedge valves as well as C-500 metal seated valves. All have 304 SS shafts and 12 mil fusion bond epoxy coating inside and out on resilient wedge valves and 2-part epoxy on metal seated valves. All wedges are ductile iron with EPDM coating as standard on resilient seated valves. These are very robust high quality valves. J&S Valves are approved for service at many major utilities in the United States and Canada. All J & S Gate Valves are manufactured and tested in Huffman, TX.**

A22. J & S Valve is not listed on the SAWS list of pre-approved manufacturers for gate valves (see Material Specifications under Business Center, Construction and Materials Specs on the SAWS website). To be listed on the SAWS list of pre-approved manufacturers, J & S Valve needs to follow the instructions in the Product Submittal Application on the SAWS website (see Product Submittal Application under Business Center, Construction and Materials). It is too late to be approved for this project.

**Q23. Existing MCCs are of the Westinghouse design. Square D by Schneider Electric can provide new buckets for Westinghouse Type “W” MCCs. Would a bucket with Square D components be suitable for these MCC replacement buckets?**

A23. Yes, refer to Note by Symbol No. 3 on Sheets E-8 and E-9 (which has been updated as part of this addendum).

**Q24. What is the quantity of concrete repair? We would like to know the surface area and depth of the repairs. Deep repairs will impact the existing rebar.**

A24. The estimated quantity of concrete repair is 2,500 cubic feet and the estimated quantity of coating repair is 2,000 square feet. See Note C-14 on Sheet S-1. Depth of concrete repair is an unknown variable. As a rough maximum estimate, consider half of the thickness of the concrete wall or slab (which will include the rebars in it). Note C-14 on Sheet S-1 calls for an engineer inspection. As part of this addendum, this note will be modified to reflect inspection by a SAWS representative.

**Q25. What is the quantity of hydro excavation required? The documents provide little or no indication of scope of supply. We would like to request an hourly unit price item**

**on the bid form. The Owner's representative could then use the hydro excavation as needed.**

A25. This will be furnished as a lump sum bid item. Electrical Record Drawings will be added to the SAWS website as **Supplemental Information**. Note that additional work done internally (by SAWS) may not be reflected on these sheets. Also, some of the drawings provided are construction drawings (and not as-built drawings). Contractor shall still field verify prior to commencing work (as per Note 3 under 'COORDINATION' on Sheet G-3).

**Q26. The documents reference 3500 cy of grit in the existing structures. How will this be adjusted for excess quantities and how will this quantity be measured?**

A26. This is a lump sum bid item. It is now based on a total of 5,000 cubic yards of grit/sludge/debris across all basins (based on recent field measurements of materials accumulated within the Pre-Aeration Tanks). Bid Item No. 10 will be updated to reflect this quantity change (as part of this addendum).

**Q27. There is a guardrail called for at the new grit dumpsters. Where is the detail of this guardrail?**

A27. A photograph of the existing handrail has been added to Sheet MB-3 (as part of this addendum). The new handrail will need to match the existing (in terms of material of construction, overall height, etc.).

**Q28. Our suppliers need to know more about the 78" pipe to be tapped. What is the class? Who was the original manufacturer? When was the pipe installed?**

A28. Based on the Record Drawings, the 78" pipe is labeled as PCCP. The legend for the Record Drawings does not have this abbreviation. The manufacturer is unknown and the pipe was installed in 1988. The method of connection will need to be submitted and approved. The only requirement is that it be water tight.

**Q29. The stop logs in the plan views show surface mount while the details show embedded frames. Which is correct?**

A29. As given in Addendum No. 1, reference to gate details was removed and a note was added to Sheet MA-1 stating that guides shall be face mounted.

**Q30. Sheet G-3 calls for the Contractor to design pipe supports. Will a PE stamp on these designs be required?**

A30. A PE seal is not required for design of pipe support systems.

**Q31. The structural steel specification requires a special certification that eliminates most suppliers who follow the water and wastewater miscellaneous metals market. SAWS has not typically required this certification. Can this CDM requirement be eliminated?**

A31. No, there are at least two (2) local companies that are AISC certified.

**Q32. Please provide details for connecting the 54" bypass line to the existing 78" pre-aeration effluent line. Also, can you provide additional information on the existing 78" pipe?**

A32. Based on the Record Drawings, the 78" pipe is labeled as PCCP. The legend for the Record Drawings does not have this abbreviation. The manufacturer is unknown and the pipe was installed in 1988. The method of connection will need to be submitted and approved. The only requirement is that it be water tight.

**Q33. Please provide details on the scope of work included in Bid Item No. 8 - Deteriorated Concrete Restoration. What is the depth of restoration? Do we chip back concrete and repair rebar, etc.?**

A33. See Note C-14 on Sheet S-1. Measurement should be in cubic feet. Also, Section 03740 is applicable here.

**Q34. Please provide a square foot quantity on which to base our bid for Bid Item No. 8 (Concrete Repairs) and Bid Item No. 9 (Concrete Repair Coating). We have no way to figure a quantity without this information as all structures are in operation and cannot be inspected. An allowance for Bid Items No. 8 and 9 may also be an option.**

A34. The estimated quantity of concrete repair is 2,500 cubic feet and the estimated quantity of coating repair is 2,000 square feet. See Note C-14 on Sheet S-1.

**Q35. In which structures are the concrete repairs and coating under Bid Items No. 8 and 9 required? Costs will vary greatly depending on the structure given the requirements of handling flow for certain structures.**

A35. The repairs can occur in any (or all) of the structure components to be reused (e.g., Plant Influent Chamber, Plant Influent Distribution Chamber, Screen Channels, Aerated Grit Tanks, Pre-Aeration Tanks).

**Q36. Please consider making Bid Item No. 10 a unit price bid item for removal/disposal of solids. This will allow easy adjustments for under/over runs in quantity (with savings for an under run going to SAWS).**

A36. This is a lump sum bid item. It is now based on a total of 5,000 cubic yards of grit/sludge/debris across all basins (based on recent field measurements of materials

accumulated within the Pre-Aeration Tanks). Bid Item No. 10 will be updated to reflect this quantity change (as part of this addendum).

**Q37. How will the volume of solids under Bid Item No. 10 be measured? Will it be dewatered? Or will it be measured wet in the basin? Whether it is measured dewatered or not makes a substantial difference in the price per cubic yard.**

A37. This is a lump sum bid item. It is now based on a total of 5,000 cubic yards of grit/sludge/debris across all basins (based on recent field measurements of materials accumulated within the Pre-Aeration Tanks). Bid Item No. 10 will be updated to reflect this quantity change (as part of this addendum).

**Q38. Are the drying beds on-site available for use by the Contractor to dewater solids removed under Bid Item No. 10? Projects with similar work at the Leon Creek WRC were allowed to use the drying beds for this purpose as long as drying beds were returned to their pre-existing condition (or better).**

A38. The on-site drying beds will not be available for the Contractor's use.

**Q39. Are the stop logs that will be required to isolate sections of the Aerated Grit Tanks Effluent Channels and Pre-Aeration Tanks Effluent Channels available for the Contractor's use?**

A39. No on-site stop logs will be available for the Contractor's use.

**Q40. Once one half of the Pre-Aeration Tanks Effluent Channel is dewatered, will the treatment train on the downstream side of the 78" pre-aeration effluent piping remain in operation? I'm trying to determine if the 78" line needs to be temporarily plugged to keep flow from backing up into the Pre-Aeration Tanks Effluent Channel.**

A40. When the south side of the treatment facilities is under construction and out of service, provisions should be made to prevent backflow into the existing Pre-Aeration Tanks Effluent Channel.

**Q41. Is there a limitation on the downtime for each half of the common Pre-Aeration Tanks Effluent Channel, or will we be allowed to keep up to half of the channel down until modifications to the related headworks/grit removal train (north or south) are completed?**

A41. There is no limitation on downtime. One half of the Pre-Aeration Tanks Effluent Channel can be taken out of service at one time.

**Q42. What is the duration of the demonstration period required to achieve substantial completion?**



- A42. The Demonstration Period coincides with the period of time required to complete all testing. As part of this addendum, Section 01650 has been modified to clarify this.
- Q43. Please provide as-builts that are available for electrical ductbanks in the area of work, specifically ductbank that will be crossed by the new buried piping at the influent structure and the 54" bypass line.**
- A43. Electrical Record Drawings will be added to the SAWS website as **Supplemental Information**. Note that additional work done internally (by SAWS) may not be reflected on these sheets. Also, some of the drawings provided are construction drawings (and not as-built drawings). Contractor shall still field verify prior to commencing work (as per Note 3 under 'COORDINATION' on Sheet G-3). Fiber optic drawings are not available.
- Q44. Can flow to the Plant Influent Chamber be diverted to the wet weather facility (during times of normal or low flow) for a short period to allow installation of bulkheads for work in the Plant Influent Chamber? If so, for how long?**
- A44. Flows in the 90" wastewater line (Plant Influent Line No. 1 from Rilling Road) can be diverted to the Dos Rios WRC Flow Equalization Basins (FEBs) by closing the FEB Diversion Gate (which is located upstream of the Plant Influent Chamber). Stop logs in the Plant Influent Chamber can be used on the 90" wastewater line (Plant Influent Line No. 2 from Salado Creek WRC) to back flows in this line to the Salado Creek WRC FEBs. Contractor should plan to do this work during a low flow period since this will increase the storage capabilities at the Salado Creek WRC FEBs (which have a total storage capacity of 12 MG).
- Q45. Please confirm the office trailer located south of the Plant Influent Distribution Chamber will be relocated prior to beginning this project. The trailer is in the way of work in this area.**
- A45. This office trailer will be relocated prior to the start of construction activities.
- Q46. Can the foundation for the new portion of the Plant Influent Distribution Chamber be constructed similar to the attached detail? This will reduce the risk of undermining the slab of the existing structure.**
- A46. No, subgrade under the existing structure should be protected/reinforced with lean concrete. Refer to the subgrade note in Section 1 on Sheet SA-5 and Section 02220, Paragraph 3.01.
- Q47. Are we required to restore the landscaping and irrigation systems around the headworks influent channel that will be removed for extension of the headworks channel? Is so, please provide details for restoration.**

A47. Reference Sheet G-3, Coordination Note No. 8 along with Environmental Notes No. 2, 6.D. and 6.E. Section 02490 (Loaming and Hydroseeding) should also be referenced.

**Q48. Section 1.01 references painting (where scheduled) and includes numerous paint systems, but there does not appear to be a schedule of work in Section 09902. Can a schedule of work for painting be provided? Do the galvanized steel structures get paint (grit removal canopies and electrical racks)? Does the underside of aluminum checkerplate (and associated support beams) get painted?**

A48. Galvanized structures shall be galvanized painted at all field welds and cut edges. Checker plates and joists are made of aluminum; no paint is required.

**Q49. On Sheet MC-4, the influent channel elevation to the Pista grit unit is shown as 484.4 ft and discharge channel elevation is shown as 482.9 ft. Is this correct? Typical design of vortex grit units has influent channel and discharge channel at same elevation unless other circumstances prevail. The same elevation is shown on the Structural drawings.**

A49. Discharge channel elevation will be revised to 484.4 ft. This update to Sheet MC-4 will be included in Addendum No. 4 (which will be issued on or before December 14, 2010).

**Q50. From the “Vortex Grit Collection Equipment” specification, the question is whether a confirmation of the warranty is required? Is the intent of this to require the successful manufacturer to provide five (5) years of warranty in total?**

A50. Yes, the manufacturer is to provide five (5) years of warranty in total.

**Q51. On Sheet MA-1 (from Addendum No. 1), we see “DRIINEF03” exhaust fan shown but there is no scheduled information (e.g., CFM, static pressure, etc.) that we have seen.**

A51. Fan schedule is included on Sheet HA-2. As part of this addendum, the fan tag number on Sheet HA-2 has been updated to match that shown on Sheet MA-1.

**Q52. I assume that the existing concrete that already has an existing liner is included in Bid Item No. 9. Is this correct? Does this include the full extent of every structure? What is the condition of the existing lining? Will the entire lining need to be completely removed prior to re-application? Does the same 150 mil thickness apply?**

A52. Yes. Include the walls and underside of elevated slabs to be reused. The condition of the existing lining is mostly unknown. Inspection during the Pre-Bid Meeting showed peeled off lining hanging from the walls in some areas. The entire lining may not necessarily need to be removed (see Note C-14 on Sheet S-1). The 150 mil thickness does apply (reference Section 09981).

**Q53. Where does the cost for the existing concrete that will become an interior surface belong?**

A53. The cost for the existing concrete without lining that will become an interior surface belongs in Bid Items No. 2, 3 and 4.

**Q54. For Sheets MA-1 and MA-2 (revised as per Addendum No. 1), are you sure you want push on joints for above ground ductile iron pipe?**

A54. Above ground ductile iron pipe needs to be flanged.

**Q55. For Sheet CP-4 (revised as per Addendum No. 1), the 3” NPW line is “clouded” but I don’t see anything that has changed other than the extension to the north side of the Influent Sampling Facility. Is this correct?**

A55. The 54” FM-DI, 12” FM-DI and 3” FM were adjusted to the north to discharge into the existing Plant Influent Chamber. These changes required the Influent Sampling Facility and 3” NPW-PVC to be adjusted accordingly.

**Q56. Refer to Sheet MB-1. There are notes saying “Relocated Modified Conveyors”. What modifications are to be done to the existing conveyors?**

A56. All necessary modifications shall be made to coordinate location of the conveyor discharge chute with the compactor inlet. Also, controls for the compactors shall be modified.

**Q57. Golden Harvest, a quality manufacturer of fabricated water control gates, requests to be listed in the specifications as an acceptable supplier under Sections 11203 and 11280.**

A57. There are three (3) slide and sluice gate manufacturers listed for this project that provided information during the design phase and met SAWS approval. There is not sufficient time to do the research necessary to add another manufacturer to the list for this project. However, Bidders can list Golden Harvest as a deductive alternate (as outlined in the Schedule of Manufacturers of the Bid Proposal).

**Q58. I am requesting that Carboline Plasite 4500 be added to the approved list in Section 09981 following the guidelines laid out in that section. Plasite 4500 meets or exceeds the specifications in Section 09981, Paragraph 2.03.**

A58. Carboline’s request for approval as an “Or Equal” manufacturer has been reviewed and accepted. The Plasite 4500 Series has been deemed acceptable as well. See revisions made to Section 09981 as part of this addendum.

**Q59. Please see the attached letters previously issued to Pump Solutions, Inc. Our company successfully completed the product approval process with SAWS, for the inclusion of KSB Pumps as an acceptable manufacturer for Submersible Sewage Pumps, for SAWS Projects.**

A59. Since KSB Pumps has completed the product approval process with SAWS, they will be added as a “Base Bid” manufacturer. The Bid Proposal and Section 11215 will be updated (as part of this addendum) to reflect this addition.

**REVISIONS TO CONTRACT DOCUMENTS AND TECHNICAL SPECIFICATIONS**

**BID PROPOSAL**

- a) Page BP-3, Proposal Certification, for page number, delete “BP-3” and replace with “BP-8”. Renumber all subsequent page numbers in this section.
- b) Page BP-4, Bid Item No. 10, under ‘Item Description’, delete “3500 cubic yards” and replace with “5000 cubic yards”.
- c) Page BP-9, Schedule of Manufacturers and Suppliers, add the following to the schedule:

“

11215	Submersible Drain Pumps	d. KSB Pumps
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**SECTION 01015 – SEQUENCE OF CONSTRUCTION**

- a) Page 01015-5, Paragraph 3.05., change paragraph header from “TEMPORARY FLOW MANAGEMENT” to “FLOW MANAGEMENT (DURING CONSTRUCTION)”.
- b) Page 01015-5, Paragraph 3.05.A., in the last sentence, delete “temporary” and replace with “54-inch”.

**SECTION 01650 – FACILITY STARTUP**

- a) Page 01650-2, Paragraph 1.03.B., in the first sentence, delete “specified”.

**SECTION 02616 – BURIED DUCTILE IRON PIPE AND FITTINGS**

- a) Page 02616-2, Paragraph 1.05.C., delete this paragraph in its entirety.
- b) Page 02616-3, Paragraph 2.01.B., delete this paragraph in its entirety and replace with:

“Fittings shall meet the requirements of AWWA C110 or AWWA C153 as applicable. Fittings shall have the same pressure rating, at a minimum, as the connecting pipe. Fittings shall have the same restraint joint system as connecting pipe.”

SECTION 02623 – POLYVINYL CHLORIDE (PVC) PRESSURE PIPE

- a) Add the attached Section 02623 to the Contract Documents.

SECTION 09981 – CORROSION PROTECTION FOR CONCRETE STRUCTURES

- a) Page 09981-3, Paragraph 2.02.A., delete this paragraph in its entirety and replace with:

“A. Raven Lining Systems, Inc. (405 Epoxy Coating System)”

- b) Page 09981-3, Paragraph 2.02.B., delete “Chesterton.” and replace with “Carboline Company (Plasite 4500).”

- c) Page 09981-4, Paragraph 2.03.A., in the first sentence, delete “Raven Lining Systems’ Raven 405 epoxy coating system –”, and replace with “The epoxy coating system will consist of”.

- d) Page 09981-4, Paragraph 2.03.A., revise the product specifications as follows:

“Color:	Blue
Mix Ratio:	3:1 (or 4:1)
Compressive Strength (minimum), psi:	14,800
Tensile Elongation (minimum), %:	1.50
Hardness, Type D:	80”

SECTION 11215 – SUBMERSIBLE DRAIN PUMPS

- a) Page 11215-3, Paragraph 1.05.E., delete this paragraph in its entirety and replace with:

“The equipment shall be Model CE as manufactured by Wemco Pump, ABS Pump, ITT Flygt, KSB Pumps, or Engineer-approved equal.”

SECTION 11280 – SLUICE GATES

- a) Page 11280-2, Paragraph 1.05.C., delete this paragraph in its entirety and replace with:

“The sluice gates and all related equipment shall be designed, constructed and installed with the best practices and methods and shall be as manufactured by Fontaine Industries, Ltd.; Waterman Industries; Hydro Gate Corporation; or Engineer-approved equal.”

**SECTION 11320 – VORTEX GRIT COLLECTION EQUIPMENT**

- a) Page 11320-4, Paragraph 1.05.B.2., delete existing “Table of Manufacturer’s Representatives’ Duties” and replace with:

“

<b>TABLE OF MANUFACTURER’S REPRESENTATIVES’ DUTIES</b>		
<b>Services Provided by Factory Representative</b>	<b>Minimum No. of Trips <sup>(1)</sup></b>	<b>Minimum Time <sup>(1)</sup> On Site Per Trip (8 hr working days)</b>
1. Supervise Installation	2	1 day
2. Inspect and Approve Installation <sup>(2)</sup>	2	1 day
3. Supervise Initial Adjustment <sup>(3)</sup>	4	2 days
4. Supervise and Assist in Testing <sup>(4)</sup>	4	4 days
5. Instruct Owner and Engineer in proper start-up and O&M <sup>(5)</sup>	1	1 day
<sup>(1)</sup> The manufacturer’s factory representative shall be present at frequent enough intervals to ensure proper installation, testing and initial operation of the equipment. <sup>(2)</sup> The manufacturer’s factory representative shall provide to the Engineer a written certification that the system has been installed in accordance with the manufacturer’s recommendations. <sup>(3)</sup> May be done upon completion of Item 2 if acceptable to the Engineer. <sup>(4)</sup> May be done upon completion of Items 2 and 3 if acceptable to the Engineer. <sup>(5)</sup> Instruction may be given upon completion of Item 4, provided that the test is successful and the O&M manuals have been submitted to and accepted by the Engineer.		

“

- b) Page 11320-13, Paragraph 2.07.A.11., delete existing information and replace with:

“11. Impeller:

- a) Type: 5-Vane
- b) Material: Ni-Hard – high nickel iron”

- c) Page 11320-14, Paragraph 2.07.C.4., delete “4-inch” and replace with “3-inch”.
- d) Page 11320-15, Paragraph 2.07.D.10., delete first sentence and replace with “The impeller will have five (5) vanes and be semi-open and non-clog made from high nickel iron.”
- e) Page 11320-16, Paragraph 2.08.E., delete “Division 17” and replace with “Division 16”.
- f) Page 11320-20, Paragraph 2.09.A.3., delete “SCADA” and replace with “DCS”.

## SECTION 11321 – GRIT WASHING AND CLASSIFICATION EQUIPMENT

- a) Page 11321-1, Paragraph 1.02.E., delete “Division 13” and replace with “Division 17”.
- b) Page 11321-1, Paragraph 1.02.G., add the following to the end of the paragraph:  
“H. Control Panels are included in Division 16700.”

## SECTION 11355 – INFLUENT SAMPLER

- a) Page 11355-6, Paragraph 2.02.A., delete “NEMA 4X” and replace with “NEMA 7”.

## SECTION 13125 – PRECAST CONCRETE BUILDING

- a) Page 13125-6, Paragraph 2.05., delete Paragraphs 2.05 through 2.09 and renumber subsequent paragraphs.

## SECTION 14650 – JIB CRANES

- a) Page 14650-3, Paragraph 1.06.A.3., delete this paragraph in its entirety.
- b) Page 14650-5, Paragraph 2.02.A., delete the following sentence from this paragraph:  
“Mast swivel shall be manually operated.”
- c) Page 14650-6, Paragraph 2.03.C., in the second sentence, delete “star” and replace with “start”.
- d) Page 14650-6, Paragraph 2.04.A., add the following sentence to the end of the paragraph:  
“All controls shall be rated NEMA 4X.”
- e) Page 14650-7, Paragraph 2.06.A., delete the third sentence in its entirety.

## SECTION 15120 – PIPING SPECIALTIES

- a) Page 15120-1, Paragraph 1.01.B., add the following to the end of the paragraph:  
“14. Expansion Joints
  - a. Single- and Multiple-Arch Type
  - b. Bellows Style
  - c. Flexible Metal Hose”
- b) Page 15120-13, Paragraph 2.14., add this paragraph immediately following:

“2.15 EXPANSION JOINTS

A. Bellows Style

1. Bellows style expansion joints shall be installed for the stainless steel air piping system as shown on the Drawings and as scheduled at the end of this Section.
2. Expansion joints shall be hydraulically formed (with dies on the outside only) and having only longitudinal seam welds. These seams shall have the same strength, physical properties and thickness as the parent metal without grinding. Expansion joints, bellow, and internal sleeves shall be made of Type 304L stainless steel with plate flanges at each end. The entire inside length of the expansion joint shall be straight. Manufacturer to provide lifting lugs at each flange for ease in handling and removal sheet metal coverage for any expansion joint.
3. Expansion joints shall be designed to prevent rotational movement and vibration from being transmitted to the piping and equipment and shall be suitable for operating pressures up to 15 psig unless otherwise specified. Joints shall accommodate the axial compression and extension and lateral movement specified in the expansion joint table at the end of this Section.
4. Expansion joints shall be suitable for continuous operating temperature range of +20 to +300 degrees F.
5. Hinged or Gimbal expansion joints shall be used at horizontal and vertical bends where shown on the Drawings and as scheduled herein, in strict accordance with the standards of the EJMA, Inc.
6. Expansion joints shall be provided with flanged ends or plain ends with end rings suitable for restrained split couplings.
  - a. Flanged ends shall be AWWA Class B (83 psig) flanges as specified in Section 15066 and shall be drilled to match the connecting piping. Flange gaskets shall be as specified in Section 15066.
  - b. End ring prepared expansion joints shall be suitable for use with Victaulic Depend-O-Lok F x F couplings as specified in Section 15066.
7. Limit rods, where called for in the Schedule at the end of this Section, shall be provided to protect the joint against excessive expansion and contraction forces and shall be installed in accordance with the manufacturer's recommendations. Expansion joints that require limit rods shall be provided with no less than two (2) rods. Limit rods and associated hardware shall be constructed of Type 304L stainless steel.
8. Manufacturer shall warrant this product to be suitable for the proposed conditions and shall furnish drawings for approval giving materials of construction, including gauge of corrugated element, maximum test pressure force to compress



joint, bellows spring rate, shear force and end moment due to calculated traverse only. Manufacturer shall also furnish evidence of completing cycle life testing for the maximum diameter to be installed and shall indicate such assured cycle life test results on material submitted for approval.

9. Metal bellows expansion joints shall be Depend-O-Lok Omni-Flex joints as manufactured by Victaulic, Inc; equal unit as manufactured American Boa; or approved equal.”

#### SECTION 16010 – ELECTRICAL GENERAL PROVISIONS

- a) Page 16010-3, Paragraph 1.03.B., delete this paragraph in its entirety and renumber subsequent paragraphs.
- b) Page 16010-6, Paragraph 1.04.A., delete this paragraph in its entirety and renumber subsequent paragraphs.
- c) Page 16010-8, Paragraph 1.08.E., delete “...writing in advance, Control centers and special control cabinets wired to terminal blocks shall include the manufacturer’s standard quality, unless specifically mentioned to the contrary on the drawings or in the specifications.” and replace with “writing prior to bid.”
- d) Page 16010-10, Paragraph 3.02.C.1., delete “foundation” and replace with “housekeeping”.
- e) Page 16010-10, Paragraph 3.02.C., add the following at the end of this paragraph:
  - “9. Pad for rack mounted equipment shall be provided with a pad extending 4 ft in the front of the rack and one ft all around the rack. If rack is back accessible, extend the pad 4 ft in the back.
  10. Rack and concrete pad dimensions shall be determined by equipment selection and submittal provided under Section 16073.”

#### SECTION 16012 – IDENTIFICATIONS

- a) Page 16012-1, Paragraph 1.02.B., delete this paragraph in its entirety and replace with:
  - “B. Submit cut sheet clearly marked showing only items provided and option selected. Cross out items that are not provided.”
- b) Page 16012-1, Paragraph 1.02, add the following:
  - “C. Submit nameplate legend.
  - D. Submit panelboards schedule.”

- c) Page 16012-1, Paragraph 1.02., renumber subsequent paragraphs.

#### SECTION 16040 – ELECTRICAL MOTOR 150HP AND LESS

- a) Page 16040-1, Paragraph 1.01.C., delete this paragraph in its entirety.

#### SECTION 16060 – ACCEPTANCE TESTING AND CALIBRATION

- a) Page 16060-5, Paragraph 1.05.F.1.a.2., delete “200 horsepower and less:” and replace with “50 horsepower to 200 horsepower:”.
- b) Page 16060-6, Paragraph 1.05.F.1.1.2., delete “200 horsepower” and replace with “50 horsepower to 200 horsepower”.

#### SECTION 16073 – HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

- a) Page 16073-1, Paragraph 1.03.A., after “Product Data” add the following:

“Provide cut sheets that clearly identify equipment and option selected.”

- b) Page 16073-2, Paragraph 1.03., add the following:

“E. Provide a rack scaled layout showing all electrical and control enclosures including switches, lights and receptacles for rack RK<sup>0</sup>1, RK<sup>0</sup>2, RK<sup>0</sup>3, and RK<sup>0</sup>4.”

- c) Page 16073-2, Paragraph 2.01.G., delete “clam” and replace with “clamp”.

- d) Page 16073-4, Paragraph 2.02.C., delete this paragraph in its entirety.

- e) Page 16073-5, Paragraph 3.02.E., delete “expansion”.

- f) Page 16073-5, Paragraph 3.04.B., delete “4000-psi” and replace with “5000-psi”.

- g) Page 16073-6, Paragraph 3.06.A., delete “as shown on the Drawings”.

#### SECTION 16110 – RACEWAYS

- a) Page 16110-4, Paragraph 3.01.E., delete “indicated” and replace with “required to allow for condensate to drain”.

- b) Page 16110-4, Paragraph 3.01.E., delete “specified”.

- c) Page 16110-5, Paragraph 3.01.L., add the following:

“6. Protect conduit and fittings against galvanic corrosion.”

- d) Page 16110-7, Paragraph 3.01.P.8., delete this paragraph in its entirety and renumber subsequent paragraphs.
- e) Page 16110-7, Paragraph 3.01.P.10., delete “or Engineer-approved equal”.

#### SECTION 16120 – CONDUCTORS – 600V AND BELOW

- a) Page 16120-3, Paragraph 3.02.A.7.e., delete “Equipment Grounding Conductors:”.
- b) Page 16120-3, Paragraph 3.02.A.7.f, delete this paragraph in its entirety and add the following:

“f. Equipment Grounding Conductors

- i) Provide stranded copper conductors, as indicated or as required by NEC, for equipment grounding. All grounding conductor shall be stranded copper.
- ii) Provide conductors with green Type XHHW insulation with a minimum thickness of 1/32-inch.”

- c) Page 16120-4, Paragraph 3.02.A.7.g, delete this paragraph in its entirety.
- d) Page 16120-5, Paragraph 3.03.A., delete this paragraph in its entirety and replace with the following:

“A. Splices are not allowed for this project.”

- e) Page 16120-7, Paragraph 3.04.D., delete “or equal”.

#### SECTION 16130 – BOXES

- a) Page 16130-4, Paragraph 3.04.B., add the following:

“4. Provide traffic rated box and cover for all boxes located in the roadway.”

#### SECTION 16140 – WIRING DEVICES

- a) Page 16140-4, Paragraph 3.02.E., after “Section 16030” add the following “and 16450”.
- b) Page 16140-3, Paragraph 2.01.C.10., at the end of sentence, delete “11 Fuses 0-600V”.
- c) Page 16140-3, Paragraph 2.01.C., add the following:

“11. Switch shall be provided with grounding kit.”

### SECTION 16191 – MISCELLANEOUS EQUIPMENT

- a) Page 16191-2, Paragraph 2.01.D., delete this paragraph in its entirety.

### SECTION 16289 – SURGE PROTECTIVE DEVICES

- a) Page 16289-3, Paragraph 2.01.B., add the following and renumber subsequent paragraphs:

“1. Eaton”

- b) Page 16289-5, Paragraph 2.03.C.1., add the following:

“and 400V for 120V/208.”

- c) Page 16289-5, Paragraph 2.03.C.2., add the following:

“and 400V for 120V/208.”

- d) Page 16289-5, Paragraph 2.03.C.3., add the following:

“and 400V for 120V/208.”

- e) Page 16289-5, Paragraph 2.04.A., delete “480V”.

### SECTION 16362 – ELECTRICAL MANHOLES

- a) Page 16362-1, Paragraph 1.03., add the following and renumber subsequent paragraphs:

“C. Submit cut sheets for all item listed in 2.01.”

- b) Page 16362-2, Paragraph 2.03.A., delete “The following items will be REQUIRED AS SHOWN ON THE PLANS:”

- c) Page 16362-3, Paragraph 3.02.B., delete this paragraph in its entirety and replace with the following:

“B. Subgrade at bottom of excavation shall be scarified to depth of 8-inch and recompact to a minimum of 95% of its maximum standard Proctor Density at (-) 2% to (+) 3% of its optimum moisture content as determined by ASTM D-698. Modification shall extend to one ft beyond edge of concrete base.”

### SECTION 16445 – PANELBOARDS – DISTRIBUTION AND BRANCH CIRCUIT

- a) Page 16445-5, Paragraph 2.04.B.1., after “480V” add the following:

“120/208V”

SECTION 16700 – COMMON CONTROL PANEL REQUIREMENTS FOR EQUIPMENT

- a) Page 16700-1, Paragraph 1.01.E., after “This section includes”, add “all”.

SECTION 17300 – PROGRAMMABLE LOGIC CONTROLLER (PLC) REQUIREMENTS

- a) Page 17300-5, Paragraph 2.02.C.2., delete this paragraph in its entirety and replace with:

“Shall have open field IO bus communication capability, such as DeviceNet or Profibus.”

SECTION 17910 – INPUT/OUTPUT LIST

- a) Page 17910-4, Paragraph 2.01, delete PLC-200 IO LIST in its entirety and replace with the following:

“

PLC-200 IO LIST				
NUM	TAG NAME	TYPE	DESCRIPTION	LOOP
1	PLC-200.TEMP	AI	Grit Removal Facility PLC Panel Temperature	
2	SPARE.	AI	Spare AI1	
3	SPARE.	AI	Spare AI2	
4	SPARE.	AI	Spare AI3	
5	SPARE.	AI	Spare AI4	
6	SPARE.	AI	Spare AI5	
7	SPARE.	AI	Spare AI6	
8	SPARE.	AI	Spare AI7	
1	PLC-200.PWR_FAIL	DI	Grit Removal Facility PLC Power Supply Fail	
2	PLC-200.UPS_FAIL	DI	Grit Removal Facility PLC UPS Fail	
3	PLC-200.UPS_BATT_FAIL	DI	Grit Removal Facility PLC UPS Battery Fail	
4	DRHGSG01.REMOTE	DI	Grit Influent Channel 1 Gate Remote	201
5	DRHGSG01.OPEN	DI	Grit Influent Channel 1 Gate Open	201
6	DRHGSG01.CLOSED	DI	Grit Influent Channel 1 Gate Closed	201
7	DRHGSG01.FAIL	DI	Grit Influent Channel 1 Gate Fail	201
8	DRHGSG02.REMOTE	DI	Grit Influent Channel 2 Gate Remote	201
9	DRHGSG02.OPEN	DI	Grit Influent Channel 2 Gate Open	201
10	DRHGSG02.CLOSED	DI	Grit Influent Channel 2 Gate Closed	201
11	DRHGSG02.FAIL	DI	Grit Influent Channel 2 Gate Fail	201
12	DRHGSG03.REMOTE	DI	Grit Influent Channel 3 Gate Remote	201
13	DRHGSG03.OPEN	DI	Grit Influent Channel 3 Gate Open	201
14	DRHGSG03.CLOSED	DI	Grit Influent Channel 3 Gate Closed	201
15	DRHGSG03.FAIL	DI	Grit Influent Channel 3 Gate Fail	201
16	DRHGSG04.REMOTE	DI	Grit Influent Channel 4 Gate Remote	201
17	DRHGSG04.OPEN	DI	Grit Influent Channel 4 Gate Open	201
18	DRHGSG04.CLOSED	DI	Grit Influent Channel 4 Gate Closed	201
19	DRHGSG04.FAIL	DI	Grit Influent Channel 4 Gate Fail	201
20	DRHGSG05.REMOTE	DI	Grit Influent Channel 5 Gate Remote	201
21	DRHGSG05.OPEN	DI	Grit Influent Channel 5 Gate Open	201
22	DRHGSG05.CLOSED	DI	Grit Influent Channel 5 Gate Closed	201

23	DRHGSG05.FAIL	DI	Grit Influent Channel 5 Gate Fail	201
24	DRHGSG06.REMOTE	DI	Grit Influent Channel 6 Gate Remote	201
25	DRHGSG06.OPEN	DI	Grit Influent Channel 6 Gate Open	201
26	DRHGSG06.CLOSED	DI	Grit Influent Channel 6 Gate Closed	201
27	DRHGSG06.FAIL	DI	Grit Influent Channel 6 Gate Fail	201
28	DRHGSG07.REMOTE	DI	Grit Influent Channel 7 Gate Remote	201
29	DRHGSG07.OPEN	DI	Grit Influent Channel 7 Gate Open	201
30	DRHGSG07.CLOSED	DI	Grit Influent Channel 7 Gate Closed	201
31	DRHGSG07.FAIL	DI	Grit Influent Channel 7 Gate Fail	201
32	DRHGSG08.REMOTE	DI	Grit Influent Channel 8 Gate Remote	201
33	DRHGSG08.OPEN	DI	Grit Influent Channel 8 Gate Open	201
34	DRHGSG08.CLOSED	DI	Grit Influent Channel 8 Gate Closed	201
35	DRHGSG08.FAIL	DI	Grit Influent Channel 8 Gate Fail	201
36	DRHGSG09.REMOTE	DI	Grit Effluent Channel 1 Gate Remote	201
37	DRHGSG09.OPEN	DI	Grit Effluent Channel 1 Gate Open	201
38	DRHGSG09.CLOSED	DI	Grit Effluent Channel 1 Gate Closed	201
39	DRHGSG09.FAIL	DI	Grit Effluent Channel 1 Gate Fail	201
40	DRHGSG10.REMOTE	DI	Grit Effluent Channel 2 Gate Remote	201
41	DRHGSG10.OPEN	DI	Grit Effluent Channel 2 Gate Open	201
42	DRHGSG10.CLOSED	DI	Grit Effluent Channel 2 Gate Closed	201
43	DRHGSG10.FAIL	DI	Grit Effluent Channel 2 Gate Fail	201
44	DRHGSG11.REMOTE	DI	Grit Effluent Channel 3 Gate Remote	201
45	DRHGSG11.OPEN	DI	Grit Effluent Channel 3 Gate Open	201
46	DRHGSG11.CLOSED	DI	Grit Effluent Channel 3 Gate Closed	201
47	DRHGSG11.FAIL	DI	Grit Effluent Channel 3 Gate Fail	201
48	DRHGSG12.REMOTE	DI	Grit Effluent Channel 4 Gate Remote	201
49	DRHGSG12.OPEN	DI	Grit Effluent Channel 4 Gate Open	201
50	DRHGSG12.CLOSED	DI	Grit Effluent Channel 4 Gate Closed	201
51	DRHGSG12.FAIL	DI	Grit Effluent Channel 4 Gate Fail	201
52	DRHGSG13.REMOTE	DI	Grit Effluent Channel 5 Gate Remote	201
53	DRHGSG13.OPEN	DI	Grit Effluent Channel 5 Gate Open	201
54	DRHGSG13.CLOSED	DI	Grit Effluent Channel 5 Gate Closed	201
55	DRHGSG13.FAIL	DI	Grit Effluent Channel 5 Gate Fail	201
56	DRHGSG14.REMOTE	DI	Grit Effluent Channel 6 Gate Remote	201
57	DRHGSG14.OPEN	DI	Grit Effluent Channel 6 Gate Open	201
58	DRHGSG14.CLOSED	DI	Grit Effluent Channel 6 Gate Closed	201
59	DRHGSG14.FAIL	DI	Grit Effluent Channel 6 Gate Fail	201
60	DRHGSG15.REMOTE	DI	Grit Effluent Channel 7 Gate Remote	201
61	DRHGSG15.OPEN	DI	Grit Effluent Channel 7 Gate Open	201
62	DRHGSG15.CLOSED	DI	Grit Effluent Channel 7 Gate Closed	201
63	DRHGSG15.FAIL	DI	Grit Effluent Channel 7 Gate Fail	201
64	DRHGSG16.REMOTE	DI	Grit Effluent Channel 8 Gate Remote	201
65	DRHGSG16.OPEN	DI	Grit Effluent Channel 8 Gate Open	201
66	DRHGSG16.CLOSED	DI	Grit Effluent Channel 8 Gate Closed	201
67	DRHGSG16.FAIL	DI	Grit Effluent Channel 8 Gate Fail	201
68	DRHGSP05.AUTO	DI	Drain Pump No. 1 Auto Mode	203
69	DRHGSP05.RUNNING	DI	Drain Pump No. 1 Running	203
70	DRHGSP05.FAIL	DI	Drain Pump No. 1 Fail	203
71	DRHGSP06.AUTO	DI	Drain Pump No. 2 Auto Mode	203
72	DRHGSP06.RUNNING	DI	Drain Pump No. 2 Running	203
73	DRHGSP06.FAIL	DI	Drain Pump No. 2 Fail	203
74	DRHGLS01.ON	DI	Drain Level Switch HighHigh	203
75	DRHGLS02.ON	DI	Drain Level Switch Low	203

76	DRHGSG17.OPEN	DI	Drain Slide Gate 1 Open	204
77	DRHGSG17.CLOSED	DI	Drain Slide Gate 1 Closed	204
78	DRHGSG17.FAIL	DI	Drain Slide Gate 1 Failed	204
79	DRHGSG18.OPEN	DI	Drain Slide Gate 2 Open	204
80	DRHGSG18.CLOSED	DI	Drain Slide Gate 2 Closed	204
81	DRHGSG18.FAIL	DI	Drain Slide Gate 2 Failed	204
82	DRHGSG19.OPEN	DI	Drain Slide Gate 3 Open	204
83	DRHGSG19.CLOSED	DI	Drain Slide Gate 3 Closed	204
84	DRHGSG19.FAIL	DI	Drain Slide Gate 3 Failed	204
85	DRHGSG20.OPEN	DI	Drain Slide Gate 4 Open	204
86	DRHGSG20.CLOSED	DI	Drain Slide Gate 4 Closed	204
87	DRHGSG20.FAIL	DI	Drain Slide Gate 4 Failed	204
88	SPARE.	DI	Spare DI 1	
89	SPARE.	DI	Spare DI 2	
90	SPARE.	DI	Spare DI 3	
91	SPARE.	DI	Spare DI 4	
92	SPARE.	DI	Spare DI 5	
93	SPARE.	DI	Spare DI 6	
94	SPARE.	DI	Spare DI 7	
95	SPARE.	DI	Spare DI 8	
96	SPARE.	DI	Spare DI 9	
97	SPARE.	DI	Spare DI 10	
98	SPARE.	DI	Spare DI 11	
99	SPARE.	DI	Spare DI 12	
100	SPARE.	DI	Spare DI 13	
101	SPARE.	DI	Spare DI 14	
102	SPARE.	DI	Spare DI 15	
103	SPARE.	DI	Spare DI 16	
104	SPARE.	DI	Spare DI 17	
105	SPARE.	DI	Spare DI 18	
106	SPARE.	DI	Spare DI 19	
107	SPARE.	DI	Spare DI 20	
108	SPARE.	DI	Spare DI 21	
109	SPARE.	DI	Spare DI 22	
110	SPARE.	DI	Spare DI 23	
111	SPARE.	DI	Spare DI 24	
112	SPARE.	DI	Spare DI 25	
113	SPARE.	DI	Spare DI 26	
114	SPARE.	DI	Spare DI 27	
115	SPARE.	DI	Spare DI 28	
116	SPARE.	DI	Spare DI 29	
117	SPARE.	DI	Spare DI 30	
118	SPARE.	DI	Spare DI 31	
119	SPARE.	DI	Spare DI 32	
120	SPARE.	DI	Spare DI 33	
121	SPARE.	DI	Spare DI 34	
122	SPARE.	DI	Spare DI 35	
123	SPARE.	DI	Spare DI 36	
124	SPARE.	DI	Spare DI 37	
125	SPARE.	DI	Spare DI 38	
126	SPARE.	DI	Spare DI 39	
127	SPARE.	DI	Spare DI 40	
128	SPARE.	DI	Spare DI 41	

1	DRHGSG01.OPEN_CMD	DO	Grit Influent Channel 1 Gate Open Command	201
2	DRHGSG01.CLOSE_CMD	DO	Grit Influent Channel 1 Gate Close Command	201
3	DRHGSG02.OPEN_CMD	DO	Grit Influent Channel 2 Gate Open Command	201
4	DRHGSG02.CLOSE_CMD	DO	Grit Influent Channel 2 Gate Close Command	201
5	DRHGSG03.OPEN_CMD	DO	Grit Influent Channel 3 Gate Open Command	201
6	DRHGSG03.CLOSE_CMD	DO	Grit Influent Channel 3 Gate Close Command	201
7	DRHGSG04.OPEN_CMD	DO	Grit Influent Channel 4 Gate Open Command	201
8	DRHGSG04.CLOSE_CMD	DO	Grit Influent Channel 4 Gate Close Command	201
9	DRHGSG05.OPEN_CMD	DO	Grit Influent Channel 5 Gate Open Command	201
10	DRHGSG05.CLOSE_CMD	DO	Grit Influent Channel 5 Gate Close Command	201
11	DRHGSG06.OPEN_CMD	DO	Grit Influent Channel 6 Gate Open Command	201
12	DRHGSG06.CLOSE_CMD	DO	Grit Influent Channel 6 Gate Close Command	201
13	DRHGSG07.OPEN_CMD	DO	Grit Influent Channel 7 Gate Open Command	201
14	DRHGSG07.CLOSE_CMD	DO	Grit Influent Channel 7 Gate Close Command	201
15	DRHGSG08.OPEN_CMD	DO	Grit Influent Channel 8 Gate Open Command	201
16	DRHGSG08.CLOSE_CMD	DO	Grit Influent Channel 8 Gate Close Command	201
17	DRHGSG09.OPEN_CMD	DO	Grit Effluent Channel 1 Gate Open Command	201
18	DRHGSG09.CLOSE_CMD	DO	Grit Effluent Channel 1 Gate Close Command	201
19	DRHGSG10.OPEN_CMD	DO	Grit Effluent Channel 2 Gate Open Command	201
20	DRHGSG10.CLOSE_CMD	DO	Grit Effluent Channel 2 Gate Close Command	201
21	DRHGSG11.OPEN_CMD	DO	Grit Effluent Channel 3 Gate Open Command	201
22	DRHGSG11.CLOSE_CMD	DO	Grit Effluent Channel 3 Gate Close Command	201
23	DRHGSG12.OPEN_CMD	DO	Grit Effluent Channel 4 Gate Open Command	201
24	DRHGSG12.CLOSE_CMD	DO	Grit Effluent Channel 4 Gate Close Command	201
25	DRHGSG13.OPEN_CMD	DO	Grit Effluent Channel 5 Gate Open Command	201
26	DRHGSG13.CLOSE_CMD	DO	Grit Effluent Channel 5 Gate Close Command	201
27	DRHGSG14.OPEN_CMD	DO	Grit Effluent Channel 6 Gate Open Command	201
28	DRHGSG14.CLOSE_CMD	DO	Grit Effluent Channel 6 Gate Close Command	201
29	DRHGSG15.OPEN_CMD	DO	Grit Effluent Channel 7 Gate Open Command	201
30	DRHGSG15.CLOSE_CMD	DO	Grit Effluent Channel 7 Gate Close Command	201
31	DRHGSG16.OPEN_CMD	DO	Grit Effluent Channel 8 Gate Open Command	201
32	DRHGSG16.CLOSE_CMD	DO	Grit Effluent Channel 8 Gate Close Command	201
33	SPARE.	DO	Spare DO 1	
34	SPARE.	DO	Spare DO 2	
35	SPARE.	DO	Spare DO 3	
36	SPARE.	DO	Spare DO 4	
37	SPARE.	DO	Spare DO 5	
38	SPARE.	DO	Spare DO 6	
39	SPARE.	DO	Spare DO 7	
40	SPARE.	DO	Spare DO 8	
41	SPARE.	DO	Spare DO 9	
42	SPARE.	DO	Spare DO 10	
43	SPARE.	DO	Spare DO 11	
44	SPARE.	DO	Spare DO 12	
45	SPARE.	DO	Spare DO 13	
46	SPARE.	DO	Spare DO 14	
47	SPARE.	DO	Spare DO 15	
48	SPARE.	DO	Spare DO 16	

“



## SECTION 17920- CONTROL NARRATIVE

- a) Page 17920-6, Paragraph 3.01.F., delete “ Slide ” and replace with “Sluice”.
- b) Page 17920-8, Paragraph 3.01.H., delete “ Tank and Pre-aeration Effluent ” and replace with “Influent and Effluent Channel Gates”.
- c) Page 17920-16, Paragraph 3.01.L.15.d., add the following:

“M. Loop 204: Drain Slide Gate Monitor

- 1. Description: Monitor gate status
- 2. Controller Programming and Configuration
  - a. Current operating and alarm indications.
- 3. DCS HMI Required Programming and Configuration
  - a. Current OPEN/CLOSE and Alarm Indications.
  - b. Fail event log.”

- d) Page 17920-16, Paragraph 3.01.L.15.d., add the following:

“N. FEB Diversion Gate Local Flow Display Modification

- 1. Modify the FEB Diversion Gate local flow display Ovation DCS program to provide total influent flow rates of flow meter DRIINF01 and DRIINF02 to the FEB Diversion Gate local flow display unit.
- 2. Modify the Sluice Gate Control Panel (Phoenix Contact I/O ) flow rate scale software configuration for the flow display unit.
- 3. Modify the flow rate display unit flow rate scale configuration.”

## REVISIONS TO DRAWINGS

### SHEET CP-1 – EXISTING YARD PIPING PLAN I

- a) Under Note 2, delete “ELECTRICAL &”.
- b) For the CONTROL PANEL FOR FLOW METER No 1, delete “(TO BE RELOCATED)” and replace with “(TO BE REMOVED)”.
- c) For the TRANSFORMER, delete “(TO BE REMOVED) SEE NOTE 2”.

SHEET CP-4 – PROPOSED PROJECT YARD PIPING PLAN I

- a) For each of the four (4) hose bibs shown, make reference to the following details: BH/MZ-2, ED/MZ-5 and EE/MZ-5.

SHEET CP-6 – MEDINA RIVER SEWER OUTFALL CONNECTION PLAN & PROFILE  
10+00 TO END

- a) In the Plan view, delete “54” ABP-HDPE” pipe designation and replace with “54” BYPASS-DI”.

SHEET CP-7 – MEDINA RIVER SEWER OUTFALL CONNECTION PLAN & PROFILE  
0+00 TO END

- a) In the Plan view, delete “54” ABP-HDPE” pipe designation and replace with “54” BYPASS-DI”.

SHEET S-1 – STRUCTURAL NOTES

- a) Under Note C-14, delete “ENGINEER” (two instances) and replace with “SAWS REPRESENTATIVE”.

SHEET DA-1 – INFLUENT FLOW METERING FACILITY – DEMOLITION PLAN,  
SECTION, AND PHOTO

- a) Revise sheet as shown in Exhibit DA1-A.

SHEET MA-1 – INFLUENT FLOW METERING FACILITY - PLANS

- a) Revise sheet as shown in Exhibit MA1-B.

SHEET MB-1 – INFLUENT SCREENING FACILITY TOP PLAN AT EL. 493.00

- a) Revise sheet as shown in Exhibit MB1-A.

SHEET MB-2 – INFLUENT SCREENING FACILITY LOWER PLAN AT EL. 484.00

- a) Revise sheet as shown in Exhibit MB2-A.

SHEET MB-3 – INFLUENT SCREENING FACILITY SECTION

- a) Revise sheet as shown in Exhibit MB3-A.

SHEET MZ-2 – MECHANICAL DETAILS II

- a) Revise sheet as shown in Exhibit MZ2-A.

SHEET HA-1 – INFLUENT SAMPLING FACILITY HVAC PLAN AND SECTION

- a) Replace sheet in its entirety with attached sheet.

SHEET HA-2 – INFLUENT FLOW METERING FACILITY – HVAC PLANS, SECTION AND DETAILS

- a) Replace sheet in its entirety with attached sheet.

SHEET E-2 – ELECTRICAL DEMOLITION SITE PLAN I

- a) Replace sheet in its entirety with attached sheet.

SHEET E-5 – ELECTRICAL DEMOLITION DETAILS II

- a) Replace sheet in its entirety with attached sheet.

SHEET E-6 – ELECTRICAL SITE PLAN I

- a) Replace sheet in its entirety with attached sheet.

SHEET E-8 – MOTOR CONTROL CENTER SG-1 ONE-LINE DIAGRAM

- a) Replace sheet in its entirety with attached sheet.

SHEET E-9 – MOTOR CONTROL CENTER SG-2 ONE-LINE DIAGRAM

- a) Replace sheet in its entirety with attached sheet.

SHEET E-12 – INFLUENT SCREENING POWER DISTRIBUTION ONE-LINE DIAGRAM

- a) Replace sheet in its entirety with attached sheet.

SHEET E-13 – GRIT REMOVAL FACILITY POWER DISTRIBUTION ONE-LINE DIAGRAM

- a) Replace sheet in its entirety with attached sheet.

SHEET E-15 – INFLUENT FLOW METERING FACILITY POWER DISTRIBUTION ONE-LINE DIAGRAM

a) Replace sheet in its entirety with attached sheet.

SHEET EA-1 – INFLUENT FLOW METERING FACILITY POWER AND CONTROL PLAN

a) Replace sheet in its entirety with attached sheet.

SHEET EA-2 – INFLUENT FLOW METERING AND SAMPLING FACILITY ELECTRICAL DETAILS

a) Replace sheet in its entirety with attached sheet.

SHEET EC-1 – GRIT REMOVAL FACILITY CHAMBERS NO.1 AND NO.2 POWER AND CONTROL PLAN

a) Replace sheet in its entirety with attached sheet.

SHEET EC-2 – GRIT REMOVAL FACILITY CHAMBERS NO.3 AND NO.4 POWER AND CONTROL PLAN

a) Replace sheet in its entirety with attached sheet.

SHEET EF-1 – ODOR CONTROL BUILDING AND TANK DRAINAGE PS POWER AND CONTROL PLAN

a) Replace sheet in its entirety with attached sheet.

SHEET EY-1 – CONTROL SCHEMATIC DIAGRAM

a) Replace sheet in its entirety with attached sheet.

SHEET EY-2 – ELECTRICAL SCHEDULES I

a) Replace sheet in its entirety with attached sheet.

SHEET EY-4 – DUCT BANK DETAILS I

a) Replace sheet in its entirety with attached sheet.

SHEET EY-5 – DUCT BANK DETAILS II

a) Replace sheet in its entirety with attached sheet.

SHEET EY-6 – PLC-100 INTERCONNECTION DIAGRAM

- a) Replace sheet in its entirety with attached sheet.

SHEET EY-7 – PLC-200 INTERCONNECTION DIAGRAM

- a) For Loop 202, delete “GRIT TANK EFFLUENT GATE” and replace with “GRIT EFFLUENT CHANNEL SLIDE GATE”.
- b) For Loop 201, delete “GRIT TANK EFFLUENT GATE” and replace with “GRIT EFFLUENT CHANNEL SLIDE GATE”.
- c) For Loop 202, delete “PRE-AERATION TANK EFFLUENT GATE” and replace with “GRIT EFFLUENT CHANNEL SLIDE GATE”.
- d) For Loop 201, delete “PRE-AERATION TANK EFFLUENT GATE” and replace with “GRIT EFFLUENT CHANNEL SLIDE GATE”.

SHEET I-2 – SCADA CONTROL SYSTEM ARCHITECTURE ONE-LINE DIAGRAM

- a) For Detail 1 Screen Channel 4, delete “SW-004” and replace with “SW-104”.
- b) For Grit Removal Local Control Panel LCP-202, delete “SW-203” and replace with “SW-202”.

SHEET I-4 – INSTRUMENT LOOP DIAGRAM 2


- a) For Loop 201, delete “GRIT TANK AND PRE-AERATION TANK SLIDE GATE” and replace with “GRIT INFLUENT AND EFFLUENT CHANNEL SLIDE GATE”.

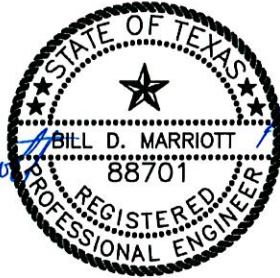
SHEET IZ-2 – INSTRUMENTATION DETAILS II

- a) For Flow Meter Level Sensor Detail 9, delete the sentence next to Note by Symbol 1 and replace with the following:

“COORDINATE WITH FLOW METER MANUFACTURER TO PROVIDE MOUNTING PIPES, PIPE FITTINGS, BALL VALVES, CONNECTORS AND OTHER MOUNTING MATERIALS FOR LEVEL SENSORS.”

The remainder of the bid documents remains unchanged.

  
\_\_\_\_\_  
**Bill D. Marriott, P.E.**  
Camp Dresser & McKee, Inc.



*12.9.2010*

**ACKNOWLEDGEMENT BY BIDDER**

Each bidder is requested to acknowledge receipt of this Addendum No. 3 on the Bid Proposal and by his/her signature affixed hereto and to file same as an attachment to his/her bid.

The undersigned acknowledges receipt of this Addendum No. 3 and the bid submitted herewith is in accordance with the information and stipulation set forth.

\_\_\_\_\_  
**Signature of Bidder**

\_\_\_\_\_  
**Date**

END OF ADDENDUM No. 3

SECTION 02623

POLYVINYL CHLORIDE (PVC) PRESSURE PIPE

PART 1: GENERAL

1.01 SCOPE OF WORK

- A. Furnish all labor, materials, equipment and incidentals required and install and test buried polyvinyl chloride (PVC) water pipe and fittings, complete as shown on the Drawings and as specified herein.
- B. Pipe or piping refers to all pipe, fittings, material and appurtenances required to construct buried PVC water pipe, complete in place.
- C. Buried PVC chemical piping shall be installed in trench as described herein. Joints and testing for buried PVC chemical piping shall be in accordance with Section 15064.

1.02 RELATED WORK

- A. Testing of pipelines is included in Section 01666.
- B. Trenching, Backfilling and Compacting is included in Section 02221.
- C. Fill Materials are included in Section 02230.
- D. Valves, Hydrants and Appurtenances are included in Section 02640.
- E. Ductile Iron Fittings are included in Section 02616.
- F. Non-Buried Polyvinyl Chloride (PVC) Pressure Pipe is included in Section 15064.

1.03 SUBMITTALS

- A. Submit to the Owner's Representative, in accordance with Section 01300, within 30 days of the Effective Date of the Agreement, the name of the pipe and fitting manufacturers and a list of materials to be furnished by each manufacturer. Also, include information on local representative for each manufacturer, if product is sold through a distributor.
- B. Shop Drawings including piping layouts and schedules shall include dimensioning, fittings, types and locations of valves and appurtenances, joint details, methods and location of supports, anchorage, gasket material, grade of material and all other pertinent technical information for all items to be furnished.
- C. Prior to each shipment of pipe, certified test reports that the pipe for this Contract was manufactured and tested in accordance with the ASTM and AWWA Standards specified herein shall be submitted.

1.04 REFERENCE STANDARDS

A. American Society for Testing and Materials (ASTM)

1. ASTM D1784 - Standard Specification for Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds.
2. ASTM F477 - Standard Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe.
3. ASTM D3139 - Standard Specification for Joints for Plastic Pressure Pipes Using Flexible Elastomeric Seals.
4. ASTM D3034 - Standard Specification for Type PSM Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings.
5. ASTM D2241 - Standard Specification for Poly (Vinyl Chloride) (PVC) Pressure-Rated Pipe (SDR Series).

B. American Water Works Association (AWWA)

1. AWWA C110 - Ductile-Iron and Gray-Iron Fittings, 3-in Through 48-in (75mm Through 1200mm) for Water and Other Liquids.
2. AWWA C111 - Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings.
3. AWWA C600 - Installation of Ductile-Iron Water Mains and Their Appurtenances.
4. AWWA C651 - Disinfecting Water Mains.
5. AWWA C900 - Polyvinyl Chloride (PVC) Pressure Pipe, 4-in Through 12-in for Water Distribution.
6. AWWA C905 - Polyvinyl Chloride (PVC) Water Transmission Pipe, Nominal Diameters 14-in Through 36-in.

C. National Sanitation Foundation (NSF)

1. Standard No. 14 - Plastic Piping Components and Related Materials.
2. Standard No. 61 - Drinking Water System Components - Health Effects.

D. Where reference is made to one of the above standards, the revision in effect at the time of bid opening shall apply.

1.05 QUALITY ASSURANCE

A. All PVC water pipe and fittings shall be from a single manufacturer. The supplier shall be responsible for the provisions of all test requirements specified in ASTM D3034 and NSF Standards as applicable. In addition, all PVC pipe to be installed under this Contract may be



inspected at the plant for compliance with this Section by an independent testing laboratory provided by the Owner. The Contractor shall require the manufacturer's cooperation in these inspections. The cost of plant inspection of all pipe approved for this Contract, plus the cost of inspection of a reasonable amount of disapproved pipe, will be borne by the Owner. Final payment will be reduced by excessive costs of plant inspection of pipe, Contractor shall have no claim thereto. Excessive inspection costs are defined as the costs of inspection of that amount of pipe which exceeds 125 percent of the aggregate length of each type installed.

- B. Inspections of the pipe may also be made by the Owner's Representative after delivery. The pipe shall be subject to rejection at any time on account of failure to meet any of the requirements specified herein, even though sample pipes may have been accepted as satisfactory at the place of manufacture. Pipe rejected after delivery shall be marked for identification and shall be removed from the job at once.

1.06 SYSTEM DESCRIPTION

- A. The equipment and materials specified herein are intended to be of standard types for use in transporting potable water, non-potable water, chlorine gas, and other pumped fluids as designated on the Drawings.
- B. Contractor is responsible for compatibility between pipe materials, fittings and appurtenances.

1.07 DELIVERY, STORAGE AND HANDLING

- A. All items shall be bundled or packaged in such a manner as to provide adequate protection of the ends during transportation to the site. Any pipe damaged in shipment shall be replaced as directed by the Owner's Representative.
- B. PVC items deteriorate in sunlight and are slightly brittle, especially at lower temperatures, so care shall be taken in loading, transporting and unloading items to prevent injury to the items. All items shall be examined before installation and no piece shall be installed which is found to be defective. Handling and installation of pipe and fittings shall be in accordance with the manufacturer's instructions, referenced standards and as specified herein.
- C. Any pipe or fitting showing a crack or which has received a blow that may have caused an incident fracture, even though no such fracture can be seen, shall be marked as rejected and removed at once from the work.
- D. While stored, pipe shall be adequately supported from below at not more than 3-ft intervals to prevent deformation. The pipe shall be stored in stacks no higher than that given in the following table:

Pipe Diameter (inches)	Max. No. of Rows Stacked
8 or less	5
12 to 21	4
24 to 30	3
33 to 48	2
54 and larger	1

- E. Pipe and fittings shall be stored in a manner which will keep them at ambient outdoor temperatures and out of the sunlight or delivered to the site so that no pipe is exposed to sunlight for more than 60 days. Temporary shading as required to meet this requirement shall be provided. Simple covering of the pipe and fittings which allows temperature buildup or direct or indirect sunlight will not be permitted.
- F. If any defective item is discovered after it has been installed, it shall be removed and replaced with an exact replacement item in a satisfactory manner by the Contractor, at the Contractor's own expense. All pipe and fittings shall be thoroughly cleaned before installation and the interior shall be kept clean until testing.
- G. In handling the items, use special devices and methods as required to achieve the results specified herein. No uncushioned devices shall be used in handling the item.

## PART 2: PRODUCTS

### 2.01 POLYVINYL CHLORIDE (PVC) PIPE AND FITTINGS

- A. Potable water (PW) and non-potable water (NPW) PVC pressure pipe sized 4-inches through 12-inches shall conform to the requirements of AWWA C900. Potable water (PW) and non-potable water (NPW) PVC pressure pipe and vacuum chlorine gas pipe sized less than 4-inches shall be Schedule 80 and shall conform to the requirements of ASTM D1784, Class 12454-B in accordance with ASTM D1785, PVC 1120. All other PVC pressure and vacuum pipe sized 4-inches and larger shall conform to the requirements of ASTM D2241. All other fluid PVC pressure pipe sized less than 4-inches shall be Schedule 80 and shall conform to the requirements of ASTM D1785, Class 12454-B in accordance with ASTM D1785, PVC 1120. All NPW pipe shall be provided with integral purple color or be provided with purple tape and markings.
- B. All AWWA C900 pipe shall be Class 150 with a Dimension Ratio of 18. All ASTM D2241 pipe shall be Class 160 with a Dimension Ratio of 26. The pipe shall be PVC 1120 made from PVC compounds Class 12454-A or 12454-B as defined in ASTM D1784. Each pipe length shall be marked with the manufacturer's name or trademark, size, material code, pressure class, AWWA or ASTM designation number and seal of test agency that verified pipe material for potable water service.
- C. AWWA C900, and ASTM D2241 PVC pipe and fittings shall have bell and spigot push-on joints. The bell shall consist of an integral wall section with a solid cross-section elastomeric gasket securely locked in place to prevent displacement during assembly. Installation of elastomeric gasketed joints and performance of the joint shall conform to ASTM F477, ASTM D3139.
- D. Schedule 80 PVC pipe and fittings shall be solvent cemented in accordance with Section 15064.
- E. All fittings and accessories for waterlines and other fittings shall have bell and/or spigot configurations compatible with the pipe.
- F. All fittings for water mains shall be cast or ductile iron conforming to AWWA C153 for pipe sizes 4-inch through 16-inch, and AWWA C110 for pipe sizes larger than 16-inch and mechanical joints. All adaptors, fittings and transition gaskets necessary to connect cast or ductile iron fittings to PVC shall be furnished.

- G. PVC fittings shall meet the requirements of AWWA C900 and be of the same or higher pressure rating as the pipe line.
- H. For restrained joints, restraining glands shall be installed. Restraining glands for PVC pipe shall conform to AWWA C111 and be Megalug 2000PV by EBAA Iron Sales Inc. or equal. Restraints for PVC pipe joints shall be series 1500 or 6500 bell restraint by EBAA Iron Sales Inc. or equal.

### PART 3: EXECUTION

#### 3.01 INSTALLATION OF PVC PIPE AND FITTINGS

- A. No single piece of pipe shall be laid unless it is straight. The centerline of the pipe shall not deviate from a straight line drawn between the centers of the openings at the ends of the pipe by more than 1/16-inch per foot of length. If a piece of pipe fails to meet this requirement check for straightness, it shall be rejected and removed from the site. Laying instructions of the manufacturer shall be explicitly followed.
- B. If any defective pipe is discovered after it has been installed, it shall be removed and replaced with a sound pipe in a satisfactory manner at no additional cost to the Owner. All pipe and fittings shall be thoroughly cleaned before installation, shall be kept clean until they are used in the work and when laid, shall conform to the lines and grades required. PVC pipe and fittings shall be installed in accordance with requirements of the manufacturer, ASTM D2321 and AWWA C600 or as otherwise provided herein.
- C. As soon as the excavation is complete to normal grade of the bottom of the trench, gravel bedding shall be placed, compacted and graded to provide firm, uniform and continuous support for the pipe. Bell holes shall be excavated so that only the barrel of the pipe bears upon the bedding. The pipe shall be laid accurately to the lines and grades indicated on the Drawings. Blocking under the pipe will not be permitted. Gravel bedding shall be placed evenly on each side of the pipe to mid-diameter and hand tools shall be used to force the bedding under the haunches of the pipe and into the bell holes to give firm continuous support for the pipe. Gravel bedding shall then be placed to 12-inch above the top of the pipe. The initial three (3) ft of backfill above the bedding shall be placed in one ft layers and carefully compacted. Generally the compaction shall be done evenly on each side of the pipe and compaction equipment shall not be operated directly over the pipe until sufficient backfill has been placed to ensure that such compaction equipment will not have a damaging effect on the pipe. Equipment used in compacting the initial three (3) ft of backfill shall be approved by the pipe manufacturer's representative prior to use.
- D. All pipe shall be sound and clean before installation. When installation is not in progress, including lunchtime, the open ends of the pipe shall be closed by watertight plug or other approved means. Good alignment shall be preserved during installation. The deflection at joints shall not exceed that recommended by manufacturer. Fittings, in addition to those shown on the Drawings, shall be provided, if required, in crossing utilities which may be encountered upon opening the trench.
- E. When cutting pipe is required, the cutting shall be done by machine, leaving a smooth cut at right angles to the axis of the pipe. Cut ends of pipe to be used with a bell shall be beveled to conform to the manufactured spigot end.

- F. Owner's Representative may examine each bell and spigot end to determine whether any preformed joint has been damaged prior to installation. Any pipe having defective joint surfaces shall be rejected, marked as such and immediately removed from the job site.
- G. Each length of the pipe shall have the assembly mark aligned with the pipe previously laid and held securely until enough backfill has been placed to hold the pipe in place. Joints shall not be "pulled" or "cramped".
- H. Before any joint is made, the pipe shall be checked to assure that a close joint with the next adjoining pipe has been maintained and that the inverts are matched and conform to the required grade. The pipe shall not be driven down to grade by striking it.
- I. Precautions shall be taken to prevent flotation of the pipe in the trench.
- J. When moveable trench bracing such as trench boxes, moveable sheeting, shoring or plates are used to support the sides of the trench, care shall be taken in placing and moving the boxes or supporting bracing to prevent movement of the pipe, or disturbance of the pipe bedding and the backfill. If trench boxes, moveable sheeting, shoring or plates have been installed below the top of pipe, they shall be moved slowly taking care not to disturb pipe, bedding or backfill. As trench boxes, moveable sheeting, shoring or plates are moved, pipe bedding shall be placed to fill any voids created and the backfill shall be recompacted to provide uniform side support for the pipe.
- K. Restrained joints shall be installed as required by the Drawings.

### 3.02 JOINTING PVC PIPE (PUSH-ON TYPE)

- A. Joints shall be made in strict accordance with the manufacturer's instructions. Pipe shall be laid with bell ends looking ahead. A rubber gasket shall be inserted in the groove of the bell end of the pipe and the joint surfaces cleaned and lubricated. The plain end of the pipe to be entered shall then be inserted in alignment with the bell of the pipe to which it is to be joined and pushed home with a come-along or by other means. Check that the reference mark on the spigot end is flush with the end of the bell.

### 3.03 JOINTING MECHANICAL JOINT FITTINGS

- A. Mechanical joints at valves, fittings and where designated shall be in accordance with the AWWA C111 and the instructions of the manufacturer. Suitable PVC to cast iron adaptors shall be installed prior to installing fittings. PVC beveled spigot shall be cut flush prior to insertion in mechanical joint pipe. To assemble the joints in the field, thoroughly clean the joint surfaces and rubber gasket with soapy water before tightening the bolts. Bolts shall be tight to the specified torques. Under no circumstances shall extension wrenches or pipe over handle of ordinary ratchet wrench be used to secure greater leverage.

### 3.04 JOINTING PVC PIPE (SOLVENT CEMENTED)

- A. Joints shall be in accordance with Section 15064 and in accordance with the manufacturer's instructions.

3.05 TESTING (PRESSURE PIPELINE)

- A. Testing shall be in accordance with Section 01666.

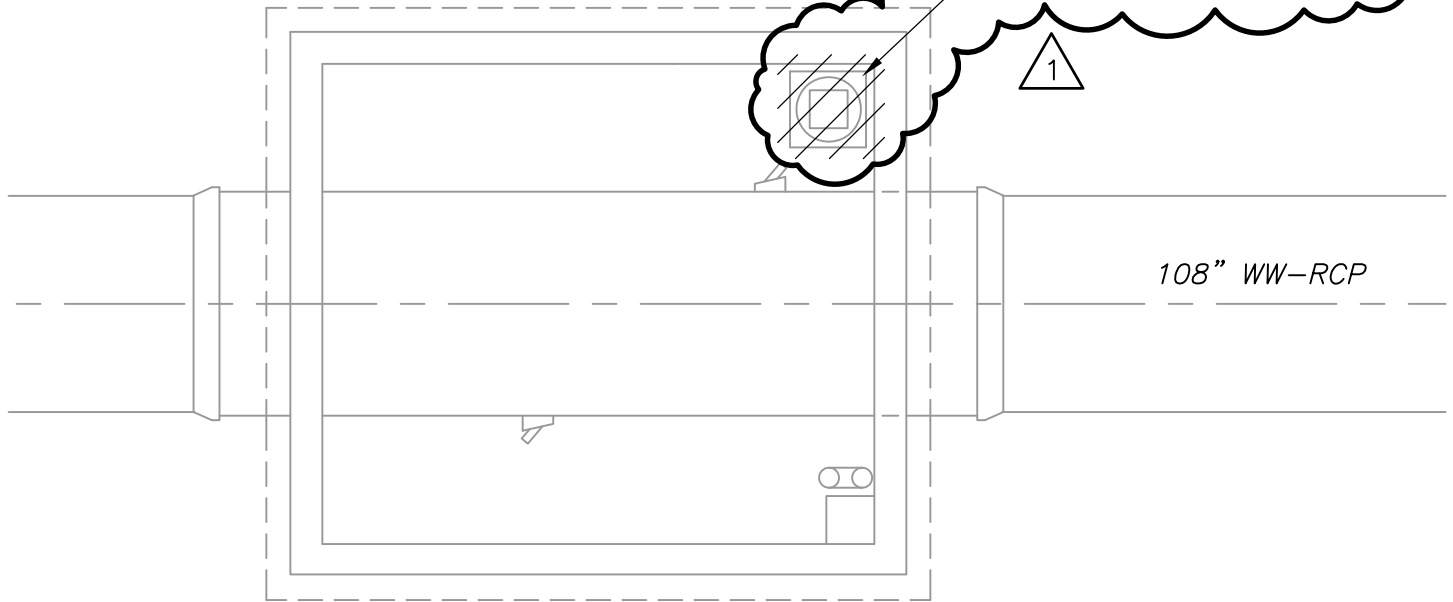
END OF SECTION

FLOW METER BOX No. 1

REMOVE AND REPLACE  
EXISTING EXHAUST FAN



108" WW-RCP



SAN ANTONIO WATER SYSTEM  
DOS RIOS WRC RE-RATING HEADWORKS  
IMPROVEMENTS AND PROCESS ENHANCEMENTS PHASE I

ADDENDUM  
No

EXHIBIT  
No

REF SHEET No

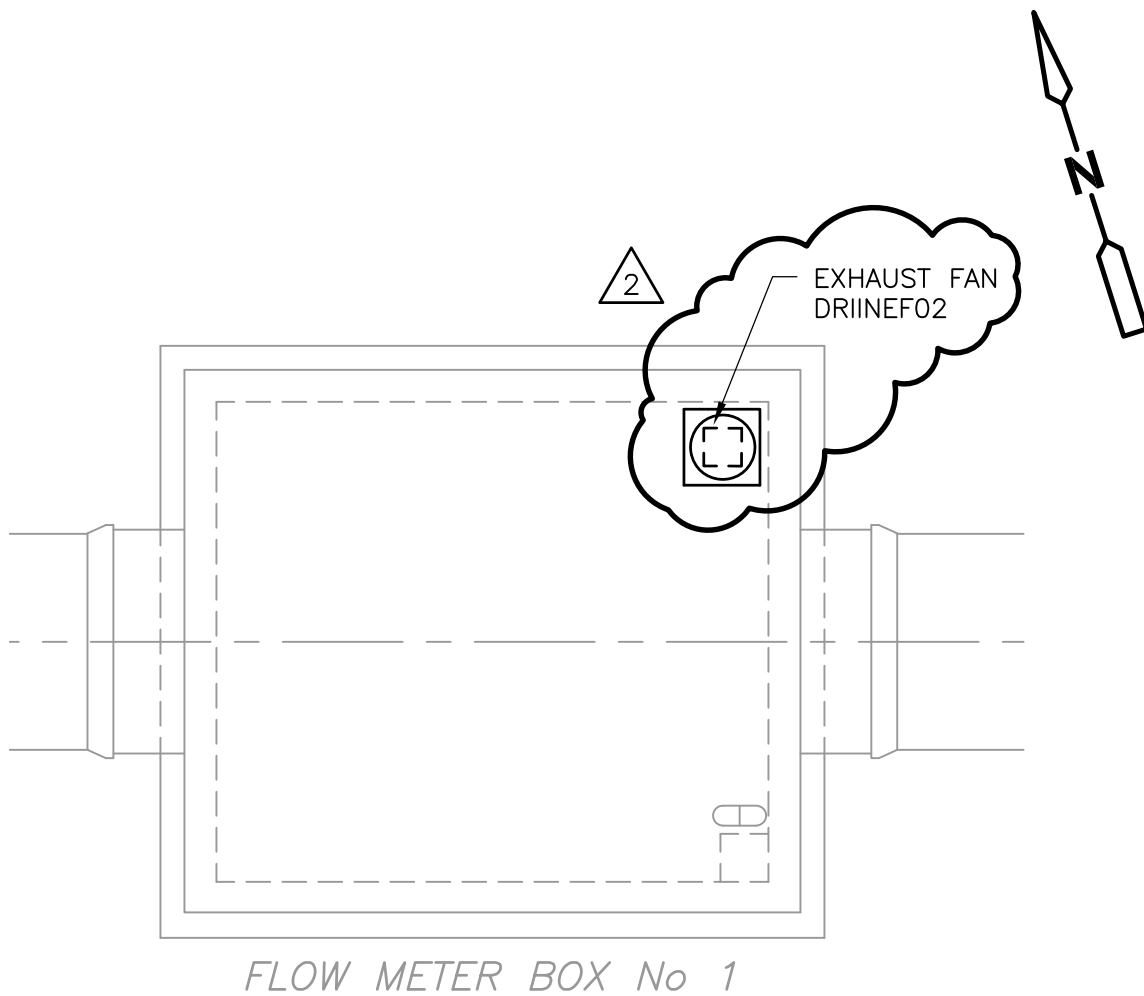
LOCATION

DATE 12-8-10

DA-1

3

DA-1-A



SAN ANTONIO WATER SYSTEM  
DOS RIOS WRC RE-RATING HEADWORKS  
IMPROVEMENTS AND PROCESS ENHANCEMENTS PHASE I

ADDENDUM  
No

EXHIBIT  
No

REF SHEET No

LOCATION



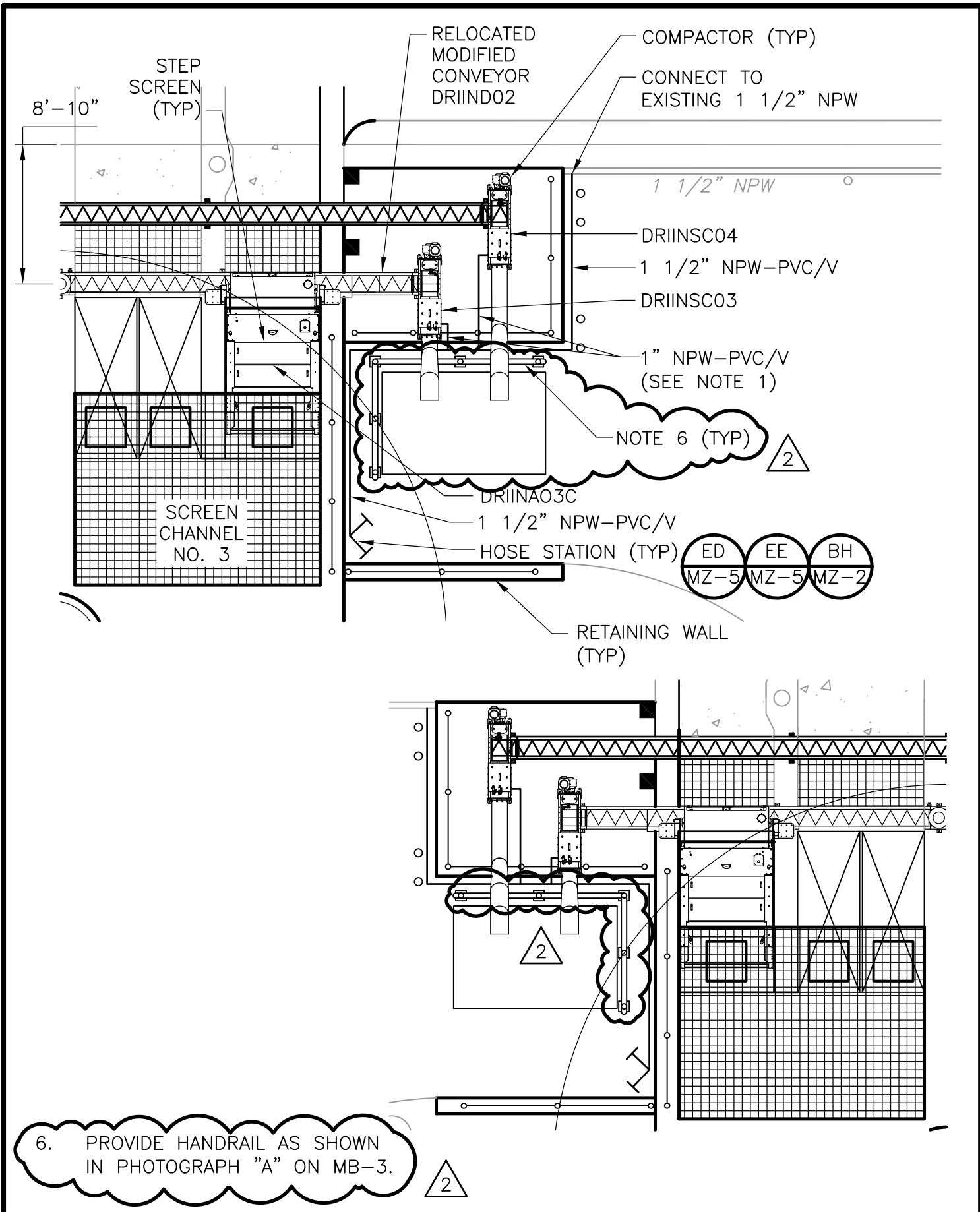
Texas Registration Number F-3043

DATE 12-8-10

MA-1

3

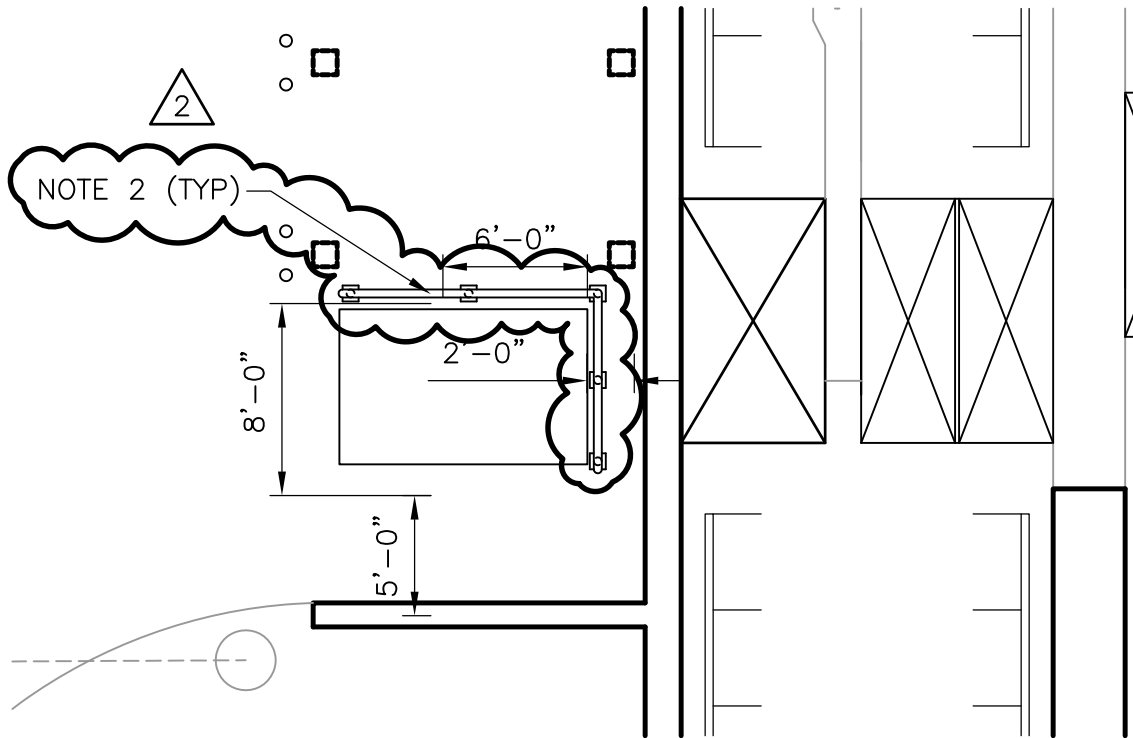
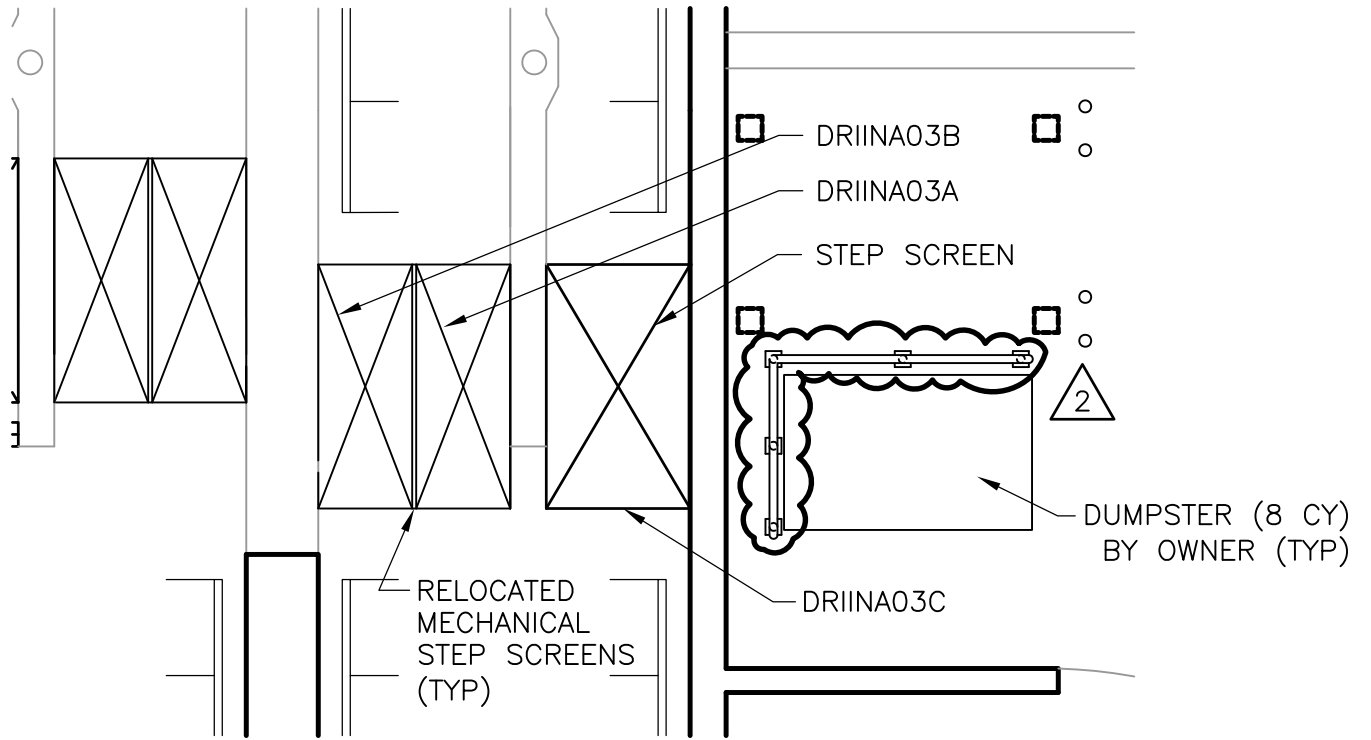
MA-1-B



6. PROVIDE HANDRAIL AS SHOWN IN PHOTOGRAPH "A" ON MB-3.


SAN ANTONIO WATER SYSTEM DOS RIOS WRC RE-RATING HEADWORKS IMPROVEMENTS AND PROCESS ENHANCEMENTS PHASE I		ADDENDUM No 3	EXHIBIT No MB-1-A





2. PROVIDE HANDRAIL AS SHOWN IN PHOTOGRAPH "A" ON MB-3.



 Texas Registration Number F-3043	DATE <u>12-8-10</u>	SAN ANTONIO WATER SYSTEM DOS RIOS WRC RE-RATING HEADWORKS IMPROVEMENTS AND PROCESS ENHANCEMENTS PHASE I		ADDENDUM No 3	EXHIBIT No MB-2-A
		REF SHEET No	LOCATION		
		MB-2			



**PHOTOGRAPH**

**A**

NTS

-

SAN ANTONIO WATER SYSTEM  
DOS RIOS WRC RE-RATING HEADWORKS  
IMPROVEMENTS AND PROCESS ENHANCEMENTS PHASE I

ADDENDUM  
No

EXHIBIT  
No

REF SHEET No

LOCATION

MB-3

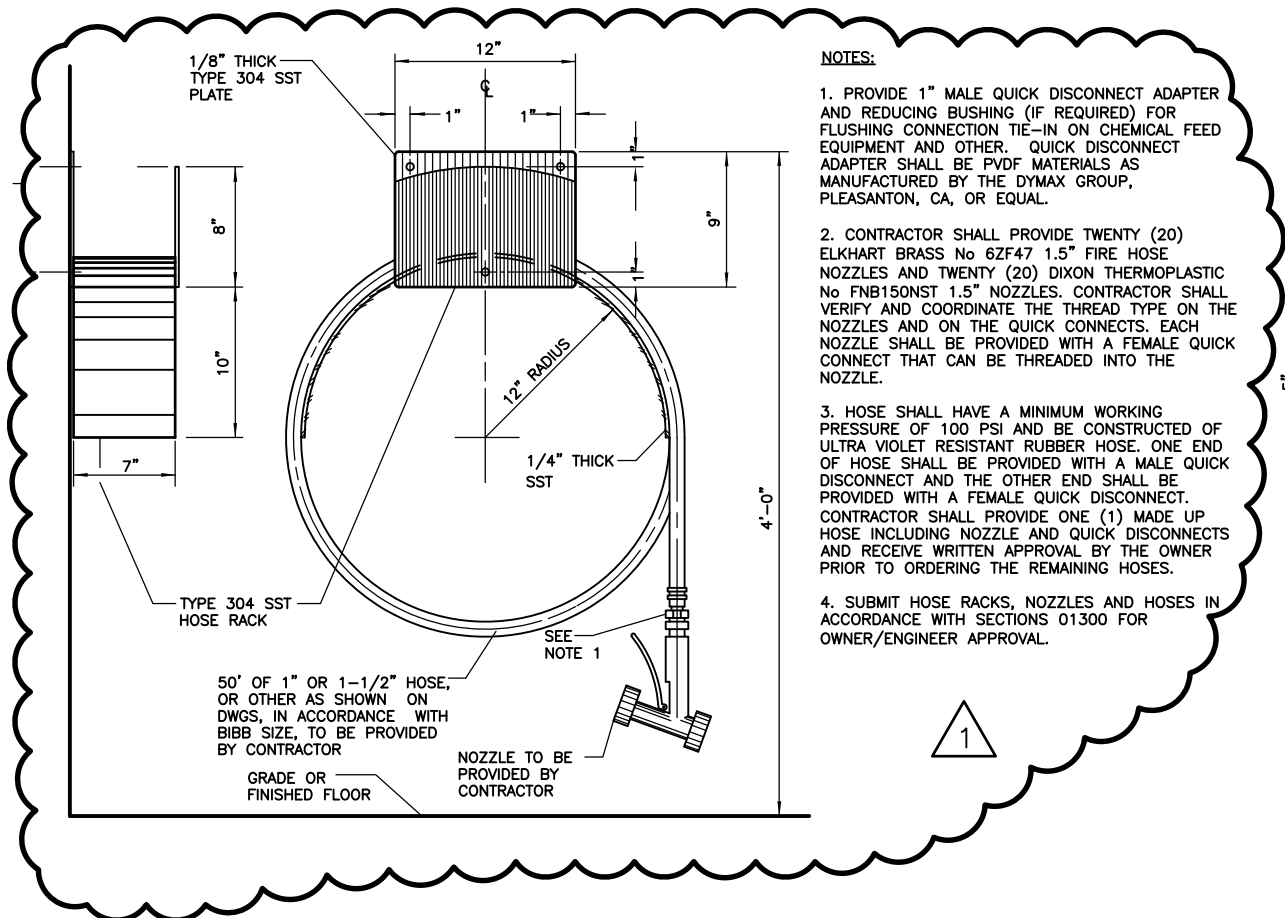
3

MB-3-A

**CDM**

Texas Registration Number F-3043

DATE 12-8-10



- NOTES:**
1. PROVIDE 1" MALE QUICK DISCONNECT ADAPTER AND REDUCING BUSHING (IF REQUIRED) FOR FLUSHING CONNECTION TIE-IN ON CHEMICAL FEED EQUIPMENT AND OTHER. QUICK DISCONNECT ADAPTER SHALL BE PVDF MATERIALS AS MANUFACTURED BY THE DYMAX GROUP, PLEASANTON, CA, OR EQUAL.
  2. CONTRACTOR SHALL PROVIDE TWENTY (20) ELKHART BRASS No 6ZF47 1.5" FIRE HOSE NOZZLES AND TWENTY (20) DIXON THERMOPLASTIC No FNB150NST 1.5" NOZZLES. CONTRACTOR SHALL VERIFY AND COORDINATE THE THREAD TYPE ON THE NOZZLES AND ON THE QUICK CONNECTS. EACH NOZZLE SHALL BE PROVIDED WITH A FEMALE QUICK CONNECT THAT CAN BE THREADED INTO THE NOZZLE.
  3. HOSE SHALL HAVE A MINIMUM WORKING PRESSURE OF 100 PSI AND BE CONSTRUCTED OF ULTRA VIOLET RESISTANT RUBBER HOSE. ONE END OF HOSE SHALL BE PROVIDED WITH A MALE QUICK DISCONNECT AND THE OTHER END SHALL BE PROVIDED WITH A FEMALE QUICK DISCONNECT. CONTRACTOR SHALL PROVIDE ONE (1) MADE UP HOSE INCLUDING NOZZLE AND QUICK DISCONNECTS AND RECEIVE WRITTEN APPROVAL BY THE OWNER PRIOR TO ORDERING THE REMAINING HOSES.
  4. SUBMIT HOSE RACKS, NOZZLES AND HOSES IN ACCORDANCE WITH SECTIONS 01300 FOR OWNER/ENGINEER APPROVAL.

50' OF 1" OR 1-1/2" HOSE, OR OTHER AS SHOWN ON DWGS, IN ACCORDANCE WITH BIBB SIZE, TO BE PROVIDED BY CONTRACTOR

GRADE OR FINISHED FLOOR

NOZZLE TO BE PROVIDED BY CONTRACTOR

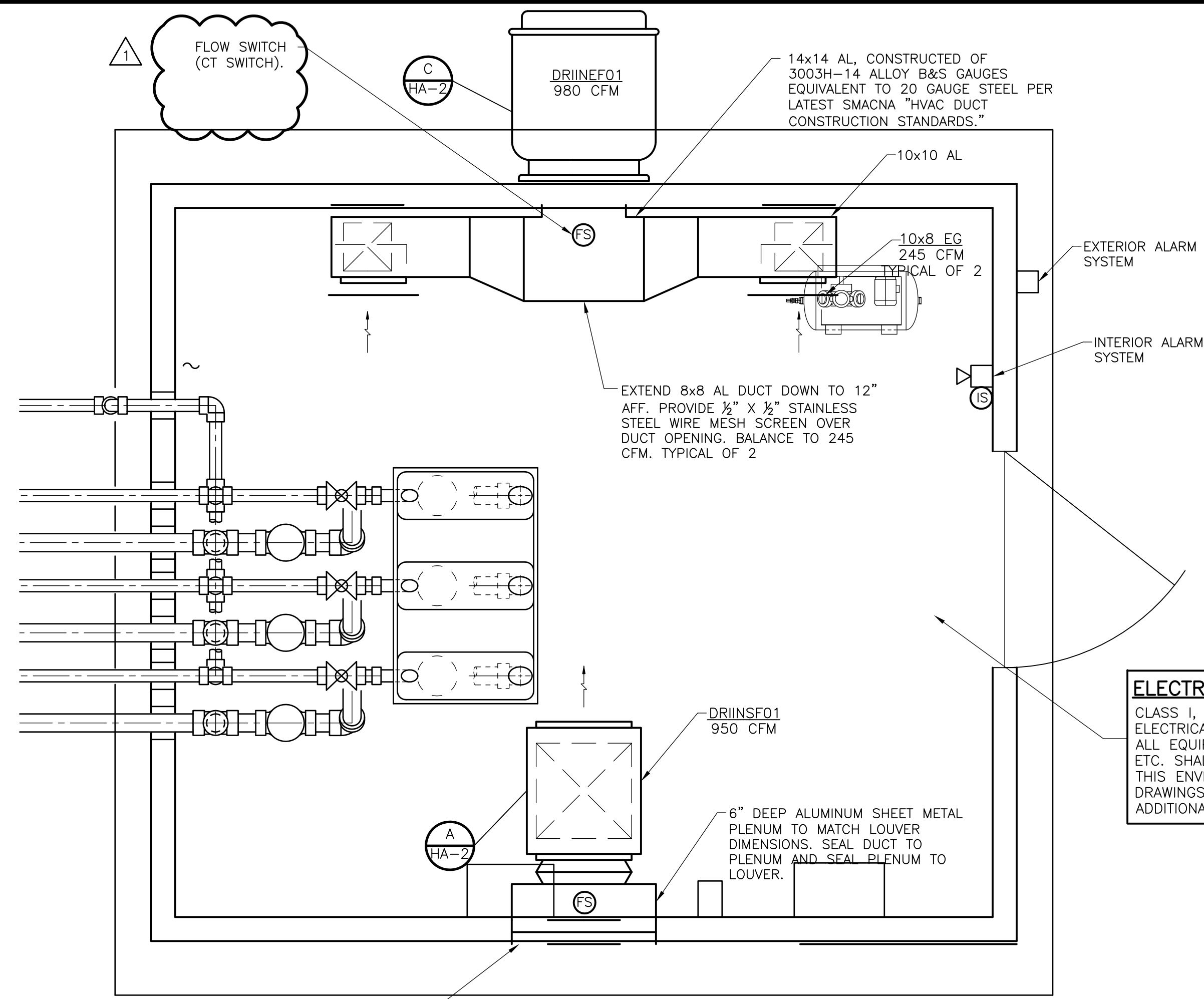
SEE NOTE 1

**WASH HOSE STATION**

**DETAIL** **BG**

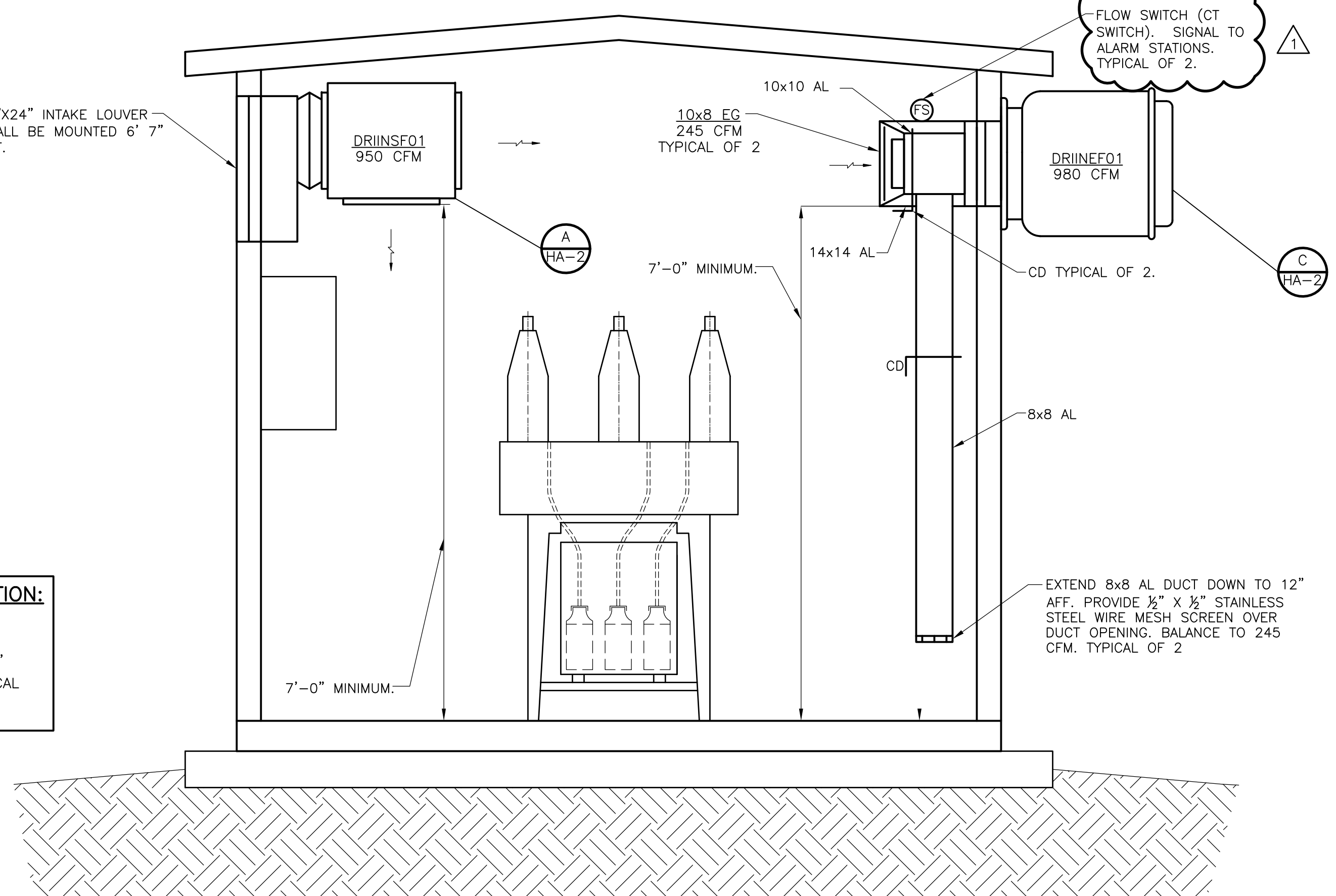
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SAN ANTONIO WATER SYSTEM DOS RIOS WRC RE-RATING HEADWORKS IMPROVEMENTS AND PROCESS ENHANCEMENTS PHASE I		ADDENDUM No	EXHIBIT No
REF SHEET No	LOCATION		
MZ-2		3	MZ-2-A



**ELECTRICAL HAZARD CLASSIFICATION:**  
 CLASS 1, DIVISION 2 GROUP D NEC-AREA  
 ELECTRICAL CLASSIFICATION PER NFPA 820.  
 ALL EQUIPMENT, MOTORS, CONTROL DEVICES,  
 ETC. SHALL BE UL LISTED FOR USE WITHIN  
 THIS ENVIRONMENT. REFER TO THE ELECTRICAL  
 DRAWINGS AND THE SPECIFICATIONS FOR  
 ADDITIONAL DETAILS.

**INFLUENT SAMPLING FACILITY  
 HVAC PLAN**  
 3/4" = 1'-0"



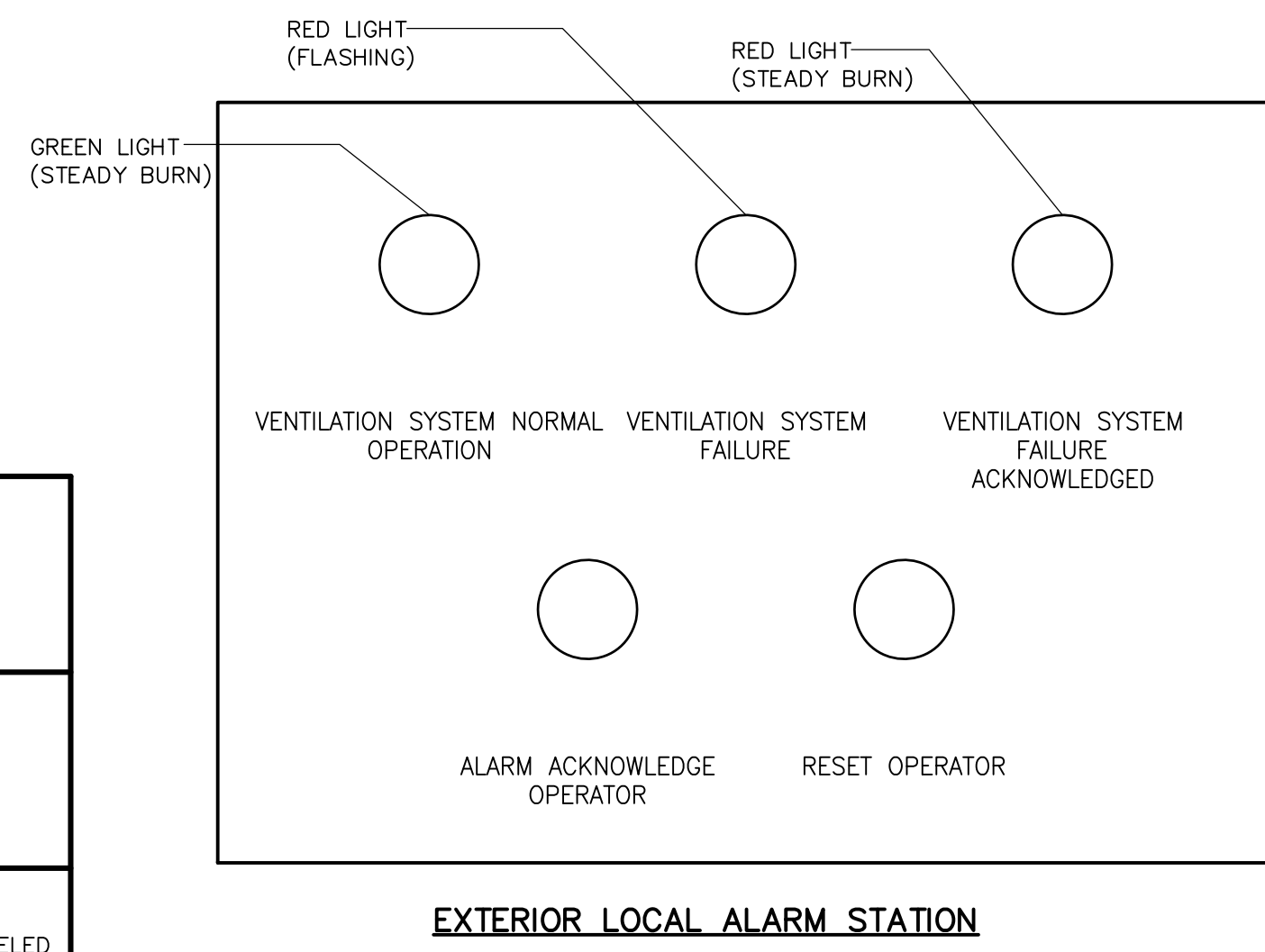
**INFLUENT SAMPLING FACILITY  
 HVAC SECTION 1**  
 3/4" = 1'-0"

OUTDOOR AIR CALCULATIONS										
BUILDING	AREA (SQ. FT.)	VOLUME (CU. FT.)	ASHRAE 62 REQ'D VENTILATION RATE	ASHRAE 62 REQ'D VENTILATION	NFPA 820 REQ'D VENTILATION RATE	NFPA 820 REQ'D VENTILATION	PROVIDED VENTILATION RATE	PROVIDED VENTILATION	VENTILATION PROVIDED BY	OUTDOOR AIR PROVIDED BY
INFLUENT SAMPLING FACILITY	112.4	1,028.8	0.05 CFM PER SQ. FT.	5.62 CFM	12 AC/HR	204.1 CFM	55.4 AC/HR	950 CFM (CONTINUOUS)	DRINEF01	DRIINSF01
INFLUENT FLOW METERING FACILITY	580	12,180	0.05 CFM PER SQ. FT.	29 CFM	6 AC/HR	1218 CFM	7.5 AC/HR	1515 CFM (CONTINUOUS)	DRINEF02	GOOSENECK VENT

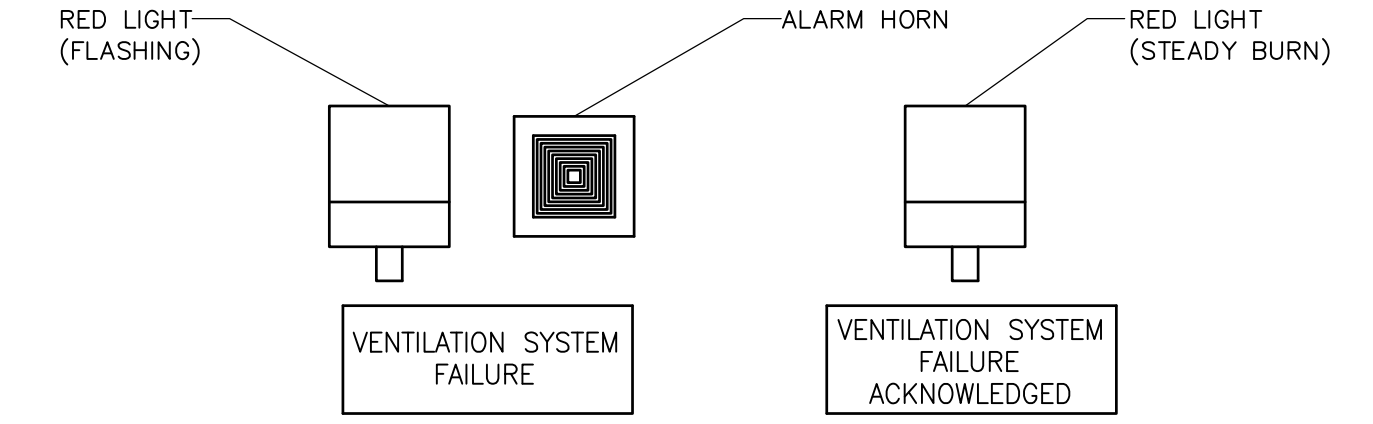
1. OUTDOOR AIR CALCULATIONS PROVIDED PER ASHRAE STANDARD 62 AND NFPA 820 ARE PROVIDED FOR INFORMATIONAL AND CODE REVIEW PURPOSES ONLY. THE CALCULATIONS DO NOT CHANGE THE CONTRACT DOCUMENTS.  
 2. OUTDOOR AIR CALCULATIONS PROVIDED PER NFPA 820 ARE PROVIDED FOR AREAS IN WHICH THE VENTILATION SYSTEM IS PROVIDED TO LOWER THE ELECTRICAL HAZARD CLASSIFICATION OF THE SPACE.  
 3. THE SUPPLY FAN DRINEF01 AND EXHAUST FAN DRINEF01 SERVING THE INFLUENT SAMPLING FACILITY SHALL OPERATE CONTINUOUSLY. IF THE AIR FLOW DROPS BELOW 205 CFM, THE FLOW ALARM IS ACTIVATED.  
 4. THE EXHAUST FAN DRINEF02 SERVING THE INFLUENT FLOW METERING FACILITY SHALL OPERATE CONTINUOUSLY. IF THE AIR FLOW DROPS BELOW 1210 CFM, THE FLOW ALARM IS ACTIVATED.

N/A - NOT APPLICABLE  
 AC/HR - AIR CHANGES PER HOUR

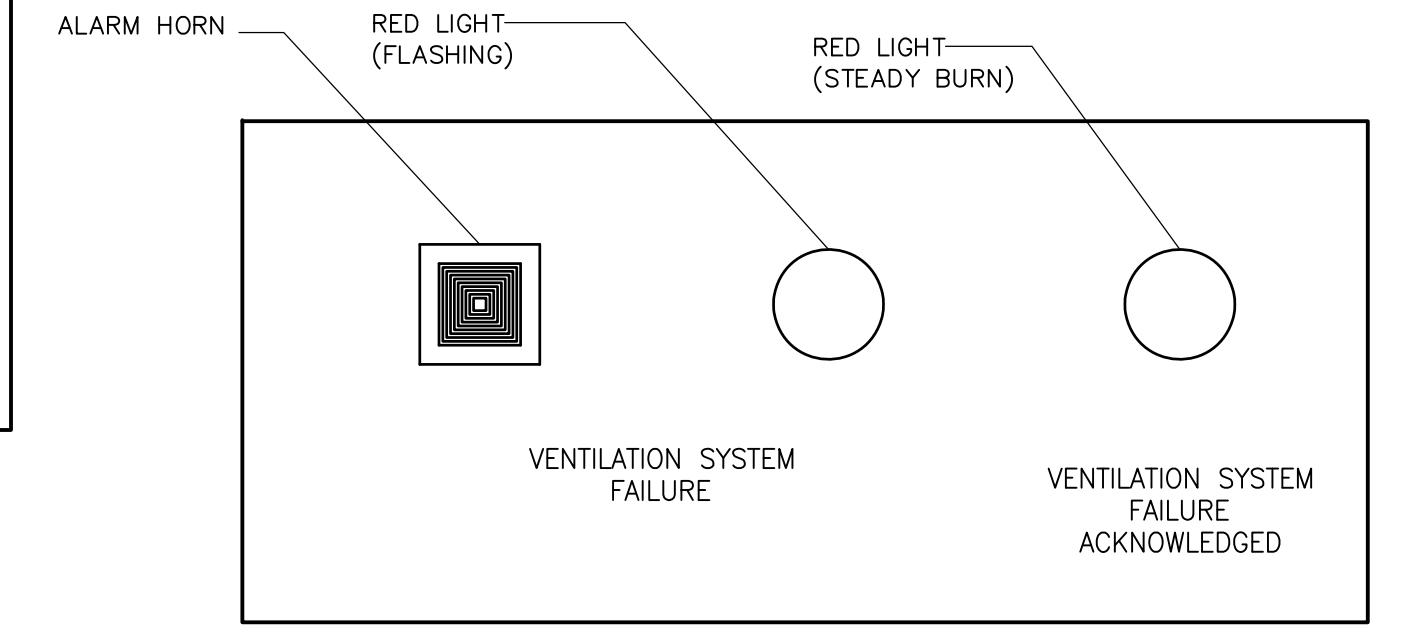
IS	INFLUENT SAMPLING FACILITY INTERIOR LOCAL VISIBLE AND AUDIBLE ALARM STATION. LABEL "VENTILATION SYSTEM FAILURE." PROVIDE FEDERAL SIGNAL CORPORATION (OR EQUAL) MODEL 191XL ALARM LIGHT, FLASHING (ALARM ONLY) WITH RED DOME, DOME GUARD, AND WALL MOUNT. PROVIDE FEDERAL SIGNAL CORPORATION (OR EQUAL) MODEL 350WBX VIBRATING HORN. PROVIDE AN ADDITIONAL FEDERAL SIGNAL CORPORATION (OR EQUAL) MODEL 191XL ALARM LIGHT, STEADY BURN (ALARM ACKNOWLEDGED LIGHT) WITH RED DOME, DOME GUARD, AND WALL MOUNT. ALARM STATION SHALL BE FIELD WIRED TO CHANGE FROM FLASHING LIGHT TO STEADY BURN LIGHT WHEN ALARM IS SILENCED/ACKNOWLEDGED AT THE EXTERIOR ALARM STATION. STEADY BURN LIGHT SHALL REMAIN ON UNTIL RESET AT THE EXTERIOR ALARM STATION.
IM	INFLUENT FLOW METERING FACILITY INTERIOR LOCAL VISIBLE AND AUDIBLE ALARM STATION. PROVIDE A 316 STAINLESS STEEL NEMA 4X ENCLOSURE WITH TWO PILOT LIGHTS AND AN ALARM HORN. FIRST PILOT LIGHT SHALL BE LABELED "VENTILATION SYSTEM FAILURE" AND SHALL BE A RED FLASHING NEMA 4X 30 MM STANDARD PILOT LIGHT, SQUARE D OR EQUAL. SECOND PILOT LIGHT SHALL BE LABELED "VENTILATION SYSTEM FAILURE, ACKNOWLEDGED" AND SHALL BE A RED STEADY BURN NEMA 4X 30 MM STANDARD PILOT LIGHT, SQUARE D OR EQUAL. HORN SHALL BE FEDERAL SIGNAL CORPORATION (OR EQUAL) MODEL 350WBX VIBRATING HORN. ALARM STATION SHALL BE FIELD WIRED TO CHANGE FROM FLASHING PILOT LIGHT TO STEADY BURN PILOT LIGHT WHEN ALARM IS SILENCED/ACKNOWLEDGED AT THE EXTERIOR ALARM STATION. STEADY BURN ALARM LIGHT SHALL REMAIN ON UNTIL RESET AT THE EXTERIOR ALARM STATION.
	EXTERIOR LOCAL VISIBLE GREEN LIGHT/RED LIGHT (GO/NO GO) ALARM STATION. PROVIDE A 316 STAINLESS STEEL NEMA 4X ENCLOSURE WITH THREE PILOT LIGHTS. FIRST PILOT LIGHT SHALL BE LABELED "VENTILATION SYSTEM NORMAL OPERATION" AND SHALL BE A GREEN STEADY BURN NEMA 4X 30 MM STANDARD PILOT LIGHT, SQUARE D OR EQUAL. SECOND PILOT LIGHT SHALL BE LABELED "VENTILATION SYSTEM FAILURE" AND SHALL BE A RED FLASHING NEMA 4X 30 MM STANDARD PILOT LIGHT, SQUARE D OR EQUAL. THIRD PILOT LIGHT SHALL BE LABELED "VENTILATION SYSTEM FAILURE, ACKNOWLEDGED" AND SHALL BE A RED STEADY BURN NEMA 4X 30 MM STANDARD PILOT LIGHT. ALARM STATION SHALL BE FIELD WIRED TO CHANGE FROM FLASHING PILOT LIGHT TO STEADY BURN PILOT LIGHT WHEN ALARM IS SILENCED/ACKNOWLEDGED AT THE EXTERIOR ALARM STATION. STEADY BURN ALARM LIGHT SHALL REMAIN ON UNTIL RESET AT THE EXTERIOR ALARM STATION. OPERATIONS SHALL BE IN ACCORDANCE WITH THE FOLLOWING: PROVIDE CONTROLS AND ACCESSORIES FOR THE EXHAUST FAN IN THE SAME ENCLOSURE. PROVIDE A MAIN CIRCUIT BREAKER FOR INCOMING POWER DISCONNECTION. PROVIDE BREAKER, STARTER, INCOMING POWER SURGE PROTECTIVE DEVICES, CONTROL TRANSFORMERS, FUSES, CT SWITCH FOR MONITORING RUN STATUS, AND OTHER CONTROLS REQUIRED FOR THE EXHAUST FAN AND/OR SUPPLY FAN. DEVICES REQUIRED SHALL BE PROVIDED AS SPECIFIED UNDER SECTION 16700. CONTROL PNAEL SHALL PROVIDE EACH FAN WITH ON, OFF, AND FAIL SIGNAL TO THE PLANT DCS FOR FAN RUNNING STATUS MONITORING. TYPICAL OF 3 EXTERIOR CONTROL/ALARM STATIONS.



**EXTERIOR LOCAL ALARM STATION**



**INFLUENT SAMPLING FACILITY INTERIOR LOCAL ALARM STATION**

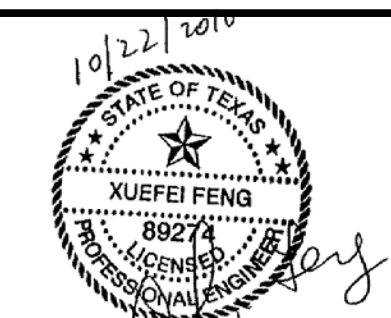


**INFLUENT FLOW METERING FACILITY INTERIOR LOCAL ALARM STATION**

ISSUE No	DATE	CHKD	REMARKS
12-8-10	SF		REVISED BY ADDENDUM NO. 3

DESIGNED BY: B. CAIN  
 DRAWN BY: M. SUTHERLAND  
 SHEET CHK'D BY: S. FENG  
 CROSS CHK'D BY: S. KODURI  
 APPROVED BY: S. FENG  
 DATE: DECEMBER 2010

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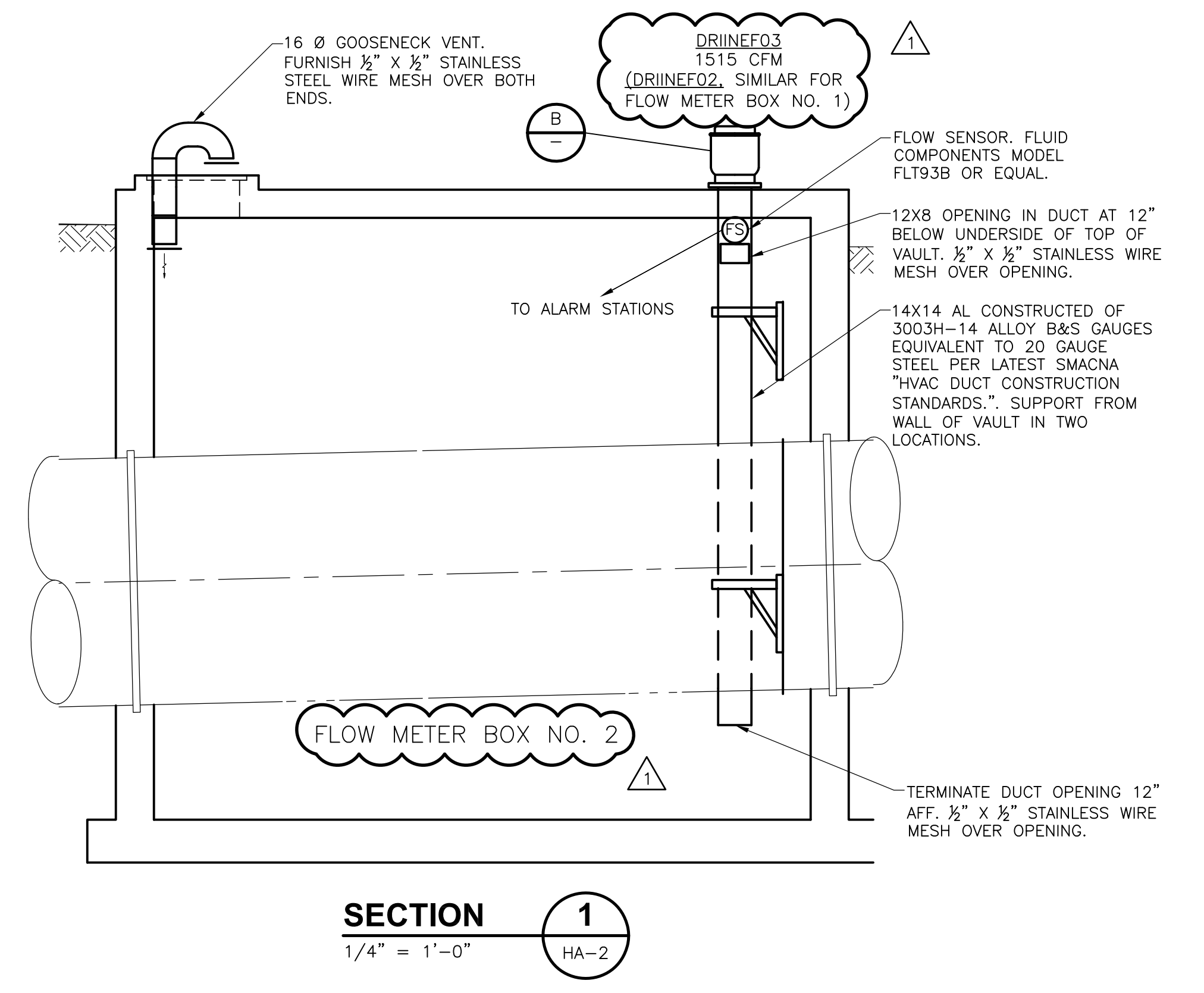
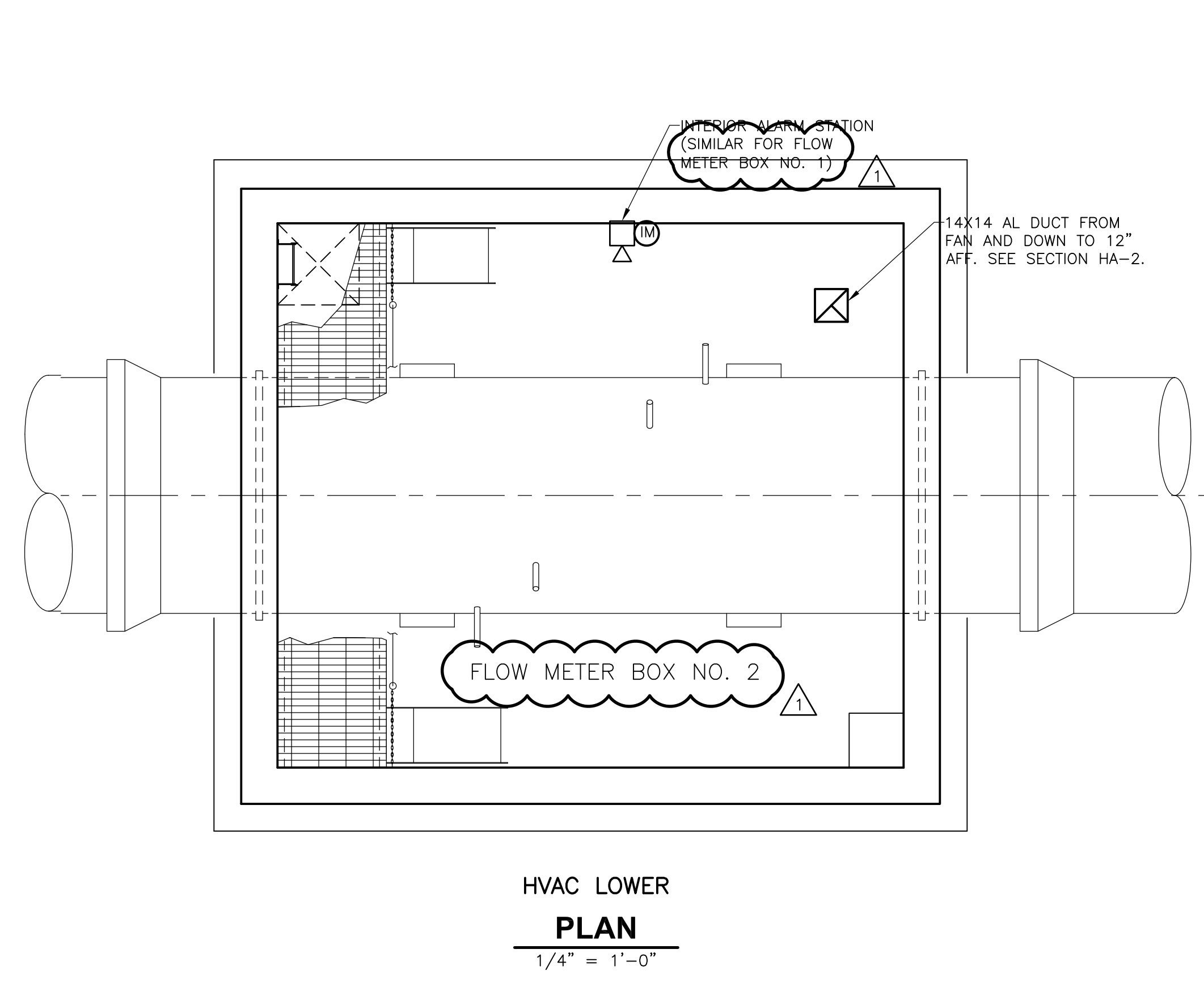
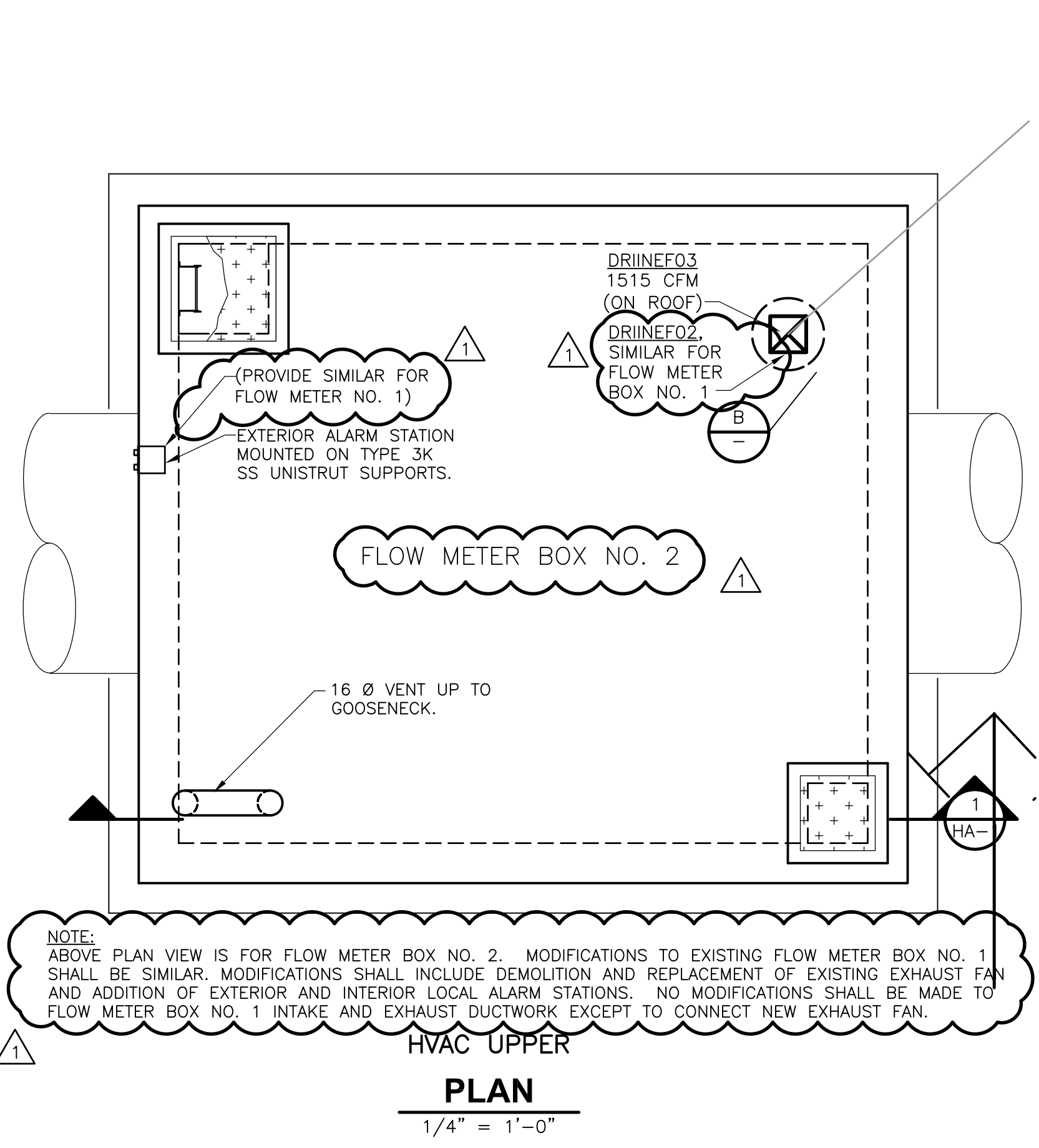


SAN ANTONIO WATER SYSTEM  
**DOS RIOS WRC RE-RATING  
 HEADWORKS IMPROVEMENTS AND  
 PROCESS ENHANCEMENTS PHASE I**

**INFLUENT SAMPLING FACILITY  
 HVAC PLAN AND SECTION**

PROJECT No	65767
FILE NAME:	HA-1
SHEET No	<b>HA-1</b>
OF	

P:\SAN ANTONIO WATER SYSTEM\65767\_HEADWORKS IMPROVEMENTS AND PROCESS ENHANCEMENTS PHASE I\CADD\65767-DOS RIOS RE-RATE\08-HVAC\HA-2 By: cezeaux, jana Saved: 12/8/2010 10:39:20 AM Plotted: 12/8/2010 10:39:41 AM

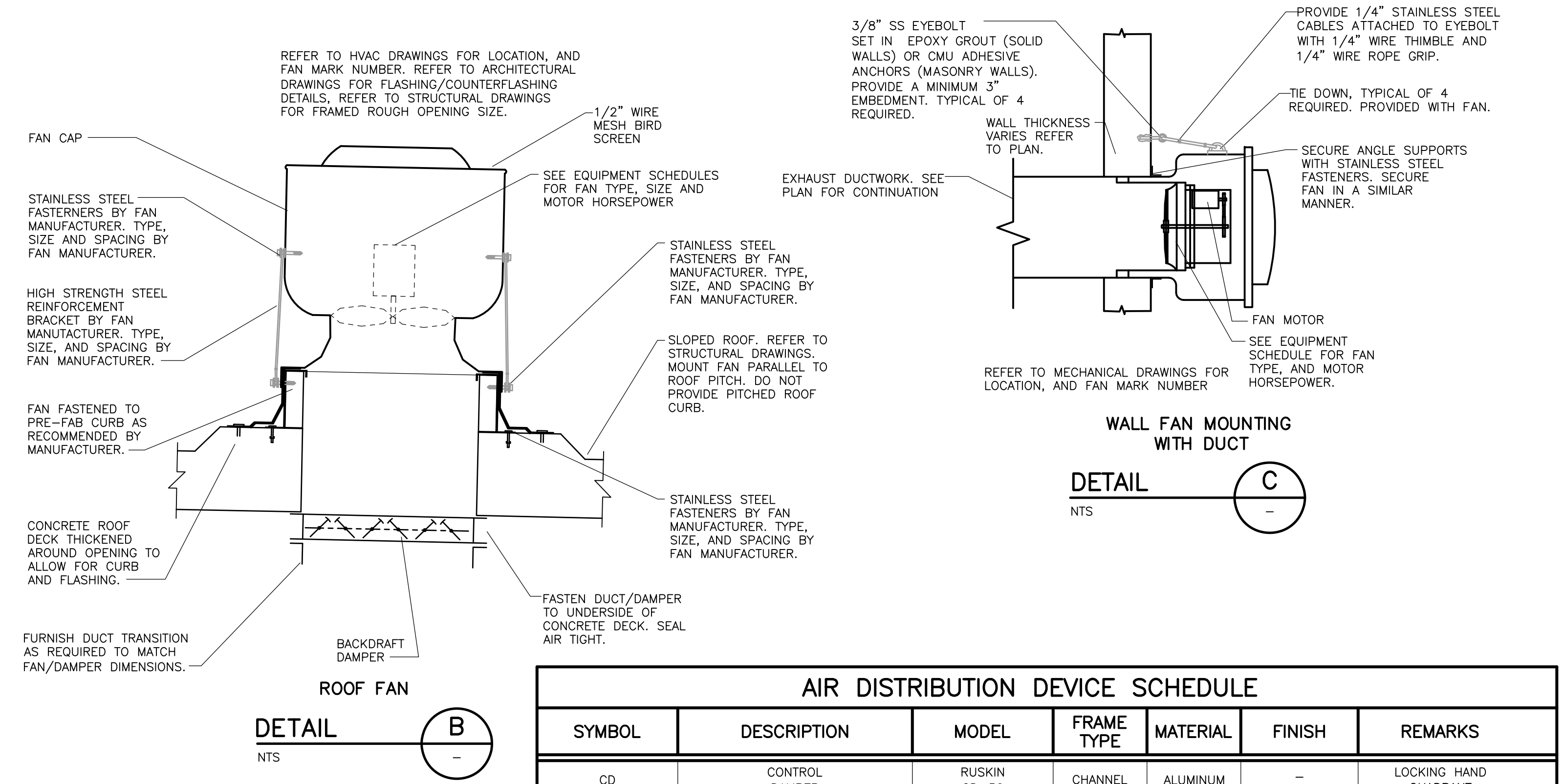
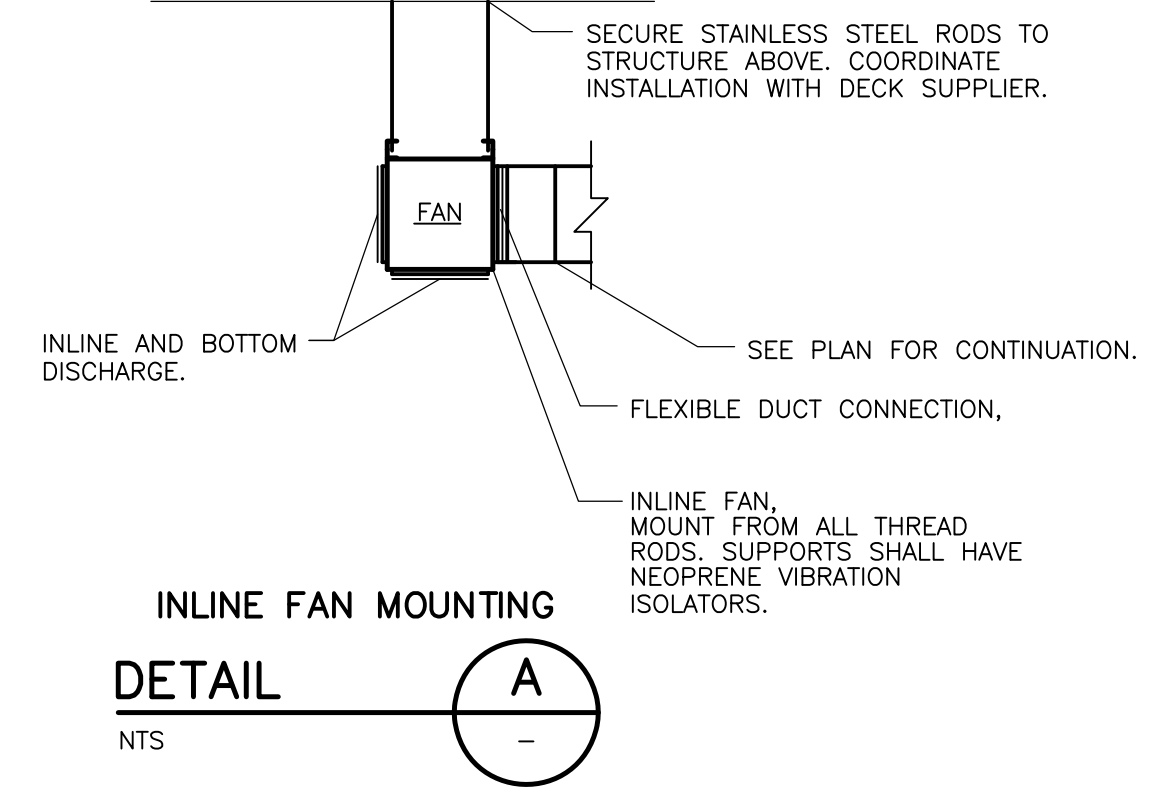


ITEM NO.	NO. REQ'D	AREA SERVED	SHEET NO.	CFM	S.P.	TYPE			H.P.	VOLT	FAN RPM	MAX SONE VALUE	GREENHECK MODEL NO.	CONTROL	REMARKS
						SET	WHEEL	DRIVE							
DRINSF01	1	INFLUENT SAMPLING FACILITY	HA-1	950	0.5"	INLINE	CENT.	DIRECT	1/4	115 1Ø	1140	5.9	SQ-120-B	CONTINUOUS	SEE NOTE 2,3
DRINEF01	1	INFLUENT SAMPLING FACILITY	HA-1	980	0.5"	WALL	CENT.	DIRECT	1/4	115 1Ø	1140	8.0	CW-121-B	CONTINUOUS	SEE NOTE 1,2
DRINEF02	1	FLOW METER BOX NO. 1	HA-2	1515	0.5"	ROOF	CENT.	BELT	1/4	115 1Ø	1725	10.2	H-CUBE-141-B	CONTINUOUS	SEE NOTE 1
DRINEF03	1	FLOW METER BOX NO. 2	HA-2	1515	0.5"	ROOF	CENT.	BELT	1/4	115 1Ø	1725	10.2	H-CUBE-141-B	CONTINUOUS	SEE NOTE 1

NOTES:  
1. FAN SHALL BE PROVIDED WITH ALL ALUMINUM CONSTRUCTION, HI-PRO POLYESTER EPOXY COATING ON ENTIRE FAN AND INCLUDING ACCESSORIES, BACKDRAFT DAMPER, PVC-COATED ALUMINUM BIRDSCREEN, STAINLESS STEEL SHAFT AND FASTENERS, TIE-DOWN POINTS, AND TEFC MOTOR.  
2. PROVIDE EXPLOSION-PROOF FAN AND MOTOR, EXPLOSION PROOF DISCONNECT, AND SPARK B CONSTRUCTION.  
3. FAN SHALL BE PROVIDED WITH ALL ALUMINUM CONSTRUCTION, HI-PRO POLYESTER EPOXY COATING ON ENTIRE FAN AND INCLUDING ACCESSORIES, OUTLET GUARDS, INLINE AND BOTTOM DISCHARGE, STAINLESS STEEL HARDWARE, AND NEOPRENE VIBRATION ISOLATORS AND MOUNTING BRACKETS.

**SEQUENCE OF CONTROLS FOR FANS:**

- WHEN THE DISCONNECT SWITCH IS IN THE OFF POSITION, THE FAN SHALL BE OFF.
- WHEN THE DISCONNECT SWITCH IS IN THE ON POSITION, THE FAN SHALL BE ON.



AIR DISTRIBUTION DEVICE SCHEDULE						
SYMBOL	DESCRIPTION	MODEL	FRAME TYPE	MATERIAL	FINISH	REMARKS
CD	CONTROL DAMPER	RUSKIN CD-50	CHANNEL	ALUMINUM	-	LOCKING HAND QUADRANT
EG	EXHAUST GRILLE HEAVY DUTY	METAL-AIRE HD-RH	PLASTER OR LAY-IN	ALUMINUM	OFF-WHITE ENAMEL	OPPOSED BLADE DAMPER

DESIGNED BY: B. CAIN	CDM
DRAWN BY: M. SUTHERLAND	1777 NE Loop 410, Suite 500 San Antonio, Texas 78217 Tel: (210) 826-3200 Fax: (210) 826-8876 Texas Registration Number F-3043
SHEET CHK'D BY: S. FENG	consulting • engineering • construction • operations
CROSS CHK'D BY: S. KODURI	
APPROVED BY: S. FENG	
DATE: DECEMBER 2010	

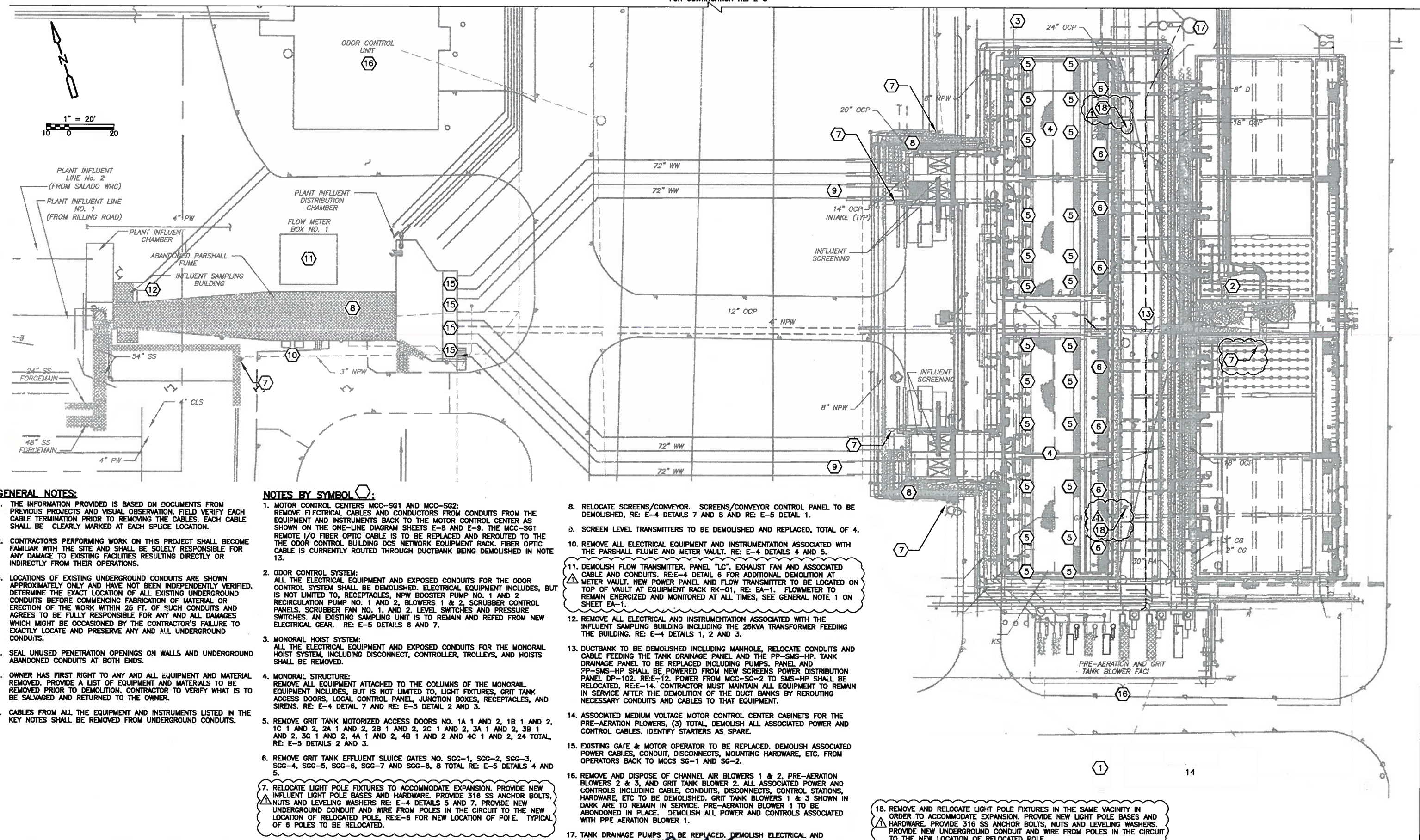
10/22/2010  
STATE OF TEXAS  
XUEFEI FENG  
80271  
LICENSED PROFESSIONAL ENGINEER  
EXPIRES 12/31/2011

SAN ANTONIO WATER SYSTEM  
DOS RIOS WRC RE-RATING  
HEADWORKS IMPROVEMENTS AND  
PROCESS ENHANCEMENTS PHASE I

PROJECT No: 65767  
FILE NAME: HA-2  
SHEET No: HA-2  
OF

Plotted - 12/8/2010 10:39:41 AM

SAWS JOB # 08-6502



**GENERAL NOTES:**

1. THE INFORMATION PROVIDED IS BASED ON DOCUMENTS FROM PREVIOUS PROJECTS AND VISUAL OBSERVATION. FIELD VERIFY EACH CABLE TERMINATION PRIOR TO REMOVING THE CABLES. EACH CABLE SHALL BE CLEARLY MARKED AT EACH SPLICE LOCATION.
2. CONTRACTORS PERFORMING WORK ON THIS PROJECT SHALL BECOME FAMILIAR WITH THE SITE AND SHALL BE SOLELY RESPONSIBLE FOR ANY DAMAGE TO EXISTING FACILITIES RESULTING DIRECTLY OR INDIRECTLY FROM THEIR OPERATIONS.
3. LOCATIONS OF EXISTING UNDERGROUND CONDUITS ARE SHOWN APPROXIMATELY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED. DETERMINE THE EXACT LOCATION OF ALL EXISTING UNDERGROUND CONDUITS BEFORE COMMENCING FABRICATION OF MATERIAL OR ERECTION OF THE WORK WITHIN 25 FT. OF SUCH CONDUITS AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND CONDUITS.
4. SEAL UNUSED PENETRATION OPENINGS ON WALLS AND UNDERGROUND ABANDONED CONDUITS AT BOTH ENDS.
5. OWNER HAS FIRST RIGHT TO ANY AND ALL EQUIPMENT AND MATERIAL REMOVED. PROVIDE A LIST OF EQUIPMENT AND MATERIALS TO BE REMOVED PRIOR TO DEMOLITION. CONTRACTOR TO VERIFY WHAT IS TO BE SALVAGED AND RETURNED TO THE OWNER.
6. CABLES FROM ALL THE EQUIPMENT AND INSTRUMENTS LISTED IN THE KEY NOTES SHALL BE REMOVED FROM UNDERGROUND CONDUITS.

**NOTES BY SYMBOL:**

1. MOTOR CONTROL CENTERS MCC-SG1 AND MCC-SG2: REMOVE ELECTRICAL CABLES AND CONDUCTORS FROM CONDUITS FROM THE EQUIPMENT AND INSTRUMENTS BACK TO THE MOTOR CONTROL CENTER AS SHOWN ON THE ONE-LINE DIAGRAM SHEETS E-8 AND E-9. THE MCC-SG1 REMOTE I/O FIBER OPTIC CABLE IS TO BE REPLACED AND REROUTED TO THE ODOR CONTROL BUILDING DCS NETWORK EQUIPMENT RACK. FIBER OPTIC CABLE IS CURRENTLY ROUTED THROUGH DUCTBANK BEING DEMOLISHED IN NOTE 13.
2. ODOR CONTROL SYSTEM: ALL THE ELECTRICAL EQUIPMENT AND EXPOSED CONDUITS FOR THE ODOR CONTROL SYSTEM SHALL BE DEMOLISHED. ELECTRICAL EQUIPMENT INCLUDES, BUT IS NOT LIMITED TO, RECEPTACLES, NPW BOOSTER PUMP NO. 1 AND 2 RECIRCULATION PUMP NO. 1 AND 2, BLOWERS 1 & 2, SCRUBBER CONTROL PANELS, SCRUBBER FAN NO. 1, AND 2, LEVEL SWITCHES AND PRESSURE SWITCHES. AN EXISTING SAMPLING UNIT IS TO REMAIN AND REPED FROM NEW ELECTRICAL GEAR. RE: E-5 DETAILS 8 AND 7.
3. MONORAIL HOIST SYSTEM: ALL THE ELECTRICAL EQUIPMENT AND EXPOSED CONDUITS FOR THE MONORAIL HOIST SYSTEM, INCLUDING DISCONNECT, CONTROLLER, TROLLEYS, AND HOISTS SHALL BE REMOVED.
4. MONORAIL STRUCTURE: REMOVE ALL EQUIPMENT ATTACHED TO THE COLUMNS OF THE MONORAIL EQUIPMENT INCLUDES, BUT IS NOT LIMITED TO, LIGHT FIXTURES, GRIT TANK ACCESS DOORS, LOCAL CONTROL PANEL, JUNCTION BOXES, RECEPTACLES, AND SIRENS. RE: E-4 DETAIL 7 AND RE: E-5 DETAIL 2 AND 3.
5. REMOVE GRIT TANK MOTORIZED ACCESS DOORS NO. 1A 1 AND 2, 1B 1 AND 2, 1C 1 AND 2, 2A 1 AND 2, 2B 1 AND 2, 2C 1 AND 2, 3A 1 AND 2, 3B 1 AND 2, 3C 1 AND 2, 4A 1 AND 2, 4B 1 AND 2 AND 4C 1 AND 2, 24 TOTAL. RE: E-5 DETAILS 2 AND 3.
6. REMOVE GRIT TANK EFFLUENT SLUIGE GATES NO. SGG-1, SGG-2, SGG-3, SGG-4, SGG-5, SGG-6, SGG-7 AND SGG-8, 8 TOTAL RE: E-5 DETAILS 4 AND 5.
7. RELOCATE LIGHT POLE FIXTURES TO ACCOMMODATE EXPANSION. PROVIDE NEW INFLUENT LIGHT POLE BASES AND HARDWARE. PROVIDE 3/8 SS ANCHOR BOLTS, NUTS AND LEVELING WASHERS RE: E-4 DETAILS 5 AND 7. PROVIDE NEW UNDERGROUND CONDUIT AND WIRE FROM POLES IN THE CIRCUIT TO THE NEW LOCATION OF RELOCATED POLE. RE: E-6 FOR NEW LOCATION OF POLE. TYPICAL OF 6 POLES TO BE RELOCATED.
8. RELOCATE SCREENS/CONVEYOR. SCREENS/CONVEYOR CONTROL PANEL TO BE DEMOLISHED. RE: E-4 DETAILS 7 AND 8 AND RE: E-5 DETAIL 1.
9. SCREEN LEVEL TRANSMITTERS TO BE DEMOLISHED AND REPLACED, TOTAL OF 4.
10. REMOVE ALL ELECTRICAL EQUIPMENT AND INSTRUMENTATION ASSOCIATED WITH THE PARSHALL FLUME AND METER VAULT. RE: E-4 DETAILS 4 AND 5.
11. DEMOLISH FLOW TRANSMITTER, PANEL "LC", EXHAUST FAN AND ASSOCIATED CABLE AND CONDUITS. RE: E-4 DETAIL 6 FOR ADDITIONAL DEMOLITION AT METER VAULT. NEW POWER PANEL AND FLOW TRANSMITTER TO BE LOCATED ON TOP OF VAULT AT EQUIPMENT RACK RK-01, RE: EA-1. FLOWMETER TO REMAIN ENERGIZED AND MONITORED AT ALL TIMES, SEE GENERAL NOTE 1 ON SHEET EA-1.
12. REMOVE ALL ELECTRICAL AND INSTRUMENTATION ASSOCIATED WITH THE INFLUENT SAMPLING BUILDING INCLUDING THE 25KVA TRANSFORMER FEEDING THE BUILDING. RE: E-4 DETAILS 1, 2 AND 3.
13. DUCTBANK TO BE DEMOLISHED INCLUDING MANHOLE, RELOCATE CONDUITS AND CABLE FEEDING THE TANK DRAINAGE PANEL AND THE PP-SMS-HP. TANK DRAINAGE PANEL TO BE REPLACED INCLUDING PUMPS, PANEL AND PP-SMS-HP SHALL BE POWERED FROM NEW SCREENS POWER DISTRIBUTION PANEL DP-102. RE: E-12. POWER FROM MCC-SG-2 TO SMS-HP SHALL BE RELOCATED. RE: E-14. CONTRACTOR MUST MAINTAIN ALL EQUIPMENT TO REMAIN IN SERVICE AFTER THE DEMOLITION OF THE DUCT BANKS BY REROUTING NECESSARY CONDUITS AND CABLES TO THAT EQUIPMENT.
14. ASSOCIATED MEDIUM VOLTAGE MOTOR CONTROL CENTER CABINETS FOR THE PRE-AERATION BLOWERS, (3) TOTAL, DEMOLISH ALL ASSOCIATED POWER AND CONTROL CABLES. IDENTIFY STARTERS AS SPARE.
15. EXISTING GATE & MOTOR OPERATOR TO BE REPLACED. DEMOLISH ASSOCIATED POWER CABLES, CONDUIT, DISCONNECTS, MOUNTING HARDWARE, ETC. FROM OPERATORS BACK TO MCCS SG-1 AND SG-2.
16. REMOVE AND DISPOSE OF CHANNEL AIR BLOWERS 1 & 2, PRE-AERATION BLOWERS 2 & 3, AND GRIT TANK BLOWER 2. ALL ASSOCIATED POWER AND CONTROLS INCLUDING CABLE, CONDUITS, DISCONNECTS, CONTROL STATIONS, HARDWARE, ETC TO BE DEMOLISHED. GRIT TANK BLOWERS 1 & 3 SHOWN IN DARK ARE TO REMAIN IN SERVICE. PRE-AERATION BLOWER 1 TO BE ABANDONED IN PLACE. DEMOLISH ALL POWER AND CONTROLS ASSOCIATED WITH PRE AERATION BLOWER 1.
17. TANK DRAINAGE PUMPS TO BE REPLACED. DEMOLISH ELECTRICAL AND INSTRUMENTATION ASSOCIATED WITH PUMPSTATION INCLUDING CONTROL PANEL.
18. REMOVE AND RELOCATE LIGHT POLE FIXTURES IN THE SAME VICINITY IN ORDER TO ACCOMMODATE EXPANSION. PROVIDE NEW LIGHT POLE BASES AND HARDWARE. PROVIDE 3/8 SS ANCHOR BOLTS, NUTS AND LEVELING WASHERS. PROVIDE NEW UNDERGROUND CONDUIT AND WIRE FROM POLES IN THE CIRCUIT TO THE NEW LOCATION OF RELOCATED POLE.

X-65767-DOS RIOS BASE, X-65767-MCP/V022, X-65767-MCP/V001, X-65767-MCP/V001, C DR. EXIST, TITLE BLOCKING

DESIGNED BY:	LEVESQUE
DRAWN BY:	BARNES
SHEET CHK'D BY:	CAMPBELL
CROSS CHK'D BY:	U
APPROVED BY:	
DATE:	NOVEMBER 2010

ISSUE No	DATE	CHKD	REMARKS
1	12/8/10	AL	REVISED BY ADDENDUM NO. 3

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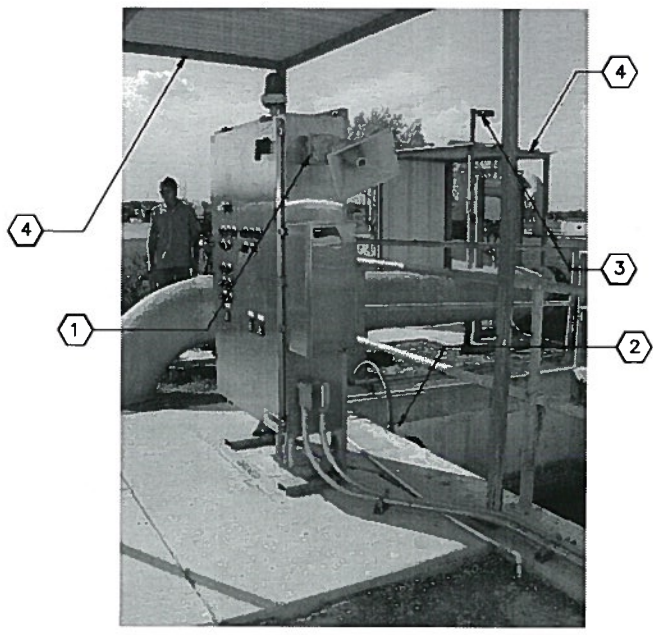
**CP&D**  
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 San Antonio, TX 78258  
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SAN ANTONIO WATER SYSTEM  
**DOS RIOS WRC RE-RATING  
 HEADWORKS IMPROVEMENTS AND  
 PROCESS ENHANCEMENTS PHASE I**

**ELECTRICAL DEMOLITION  
 SITE PLAN I**

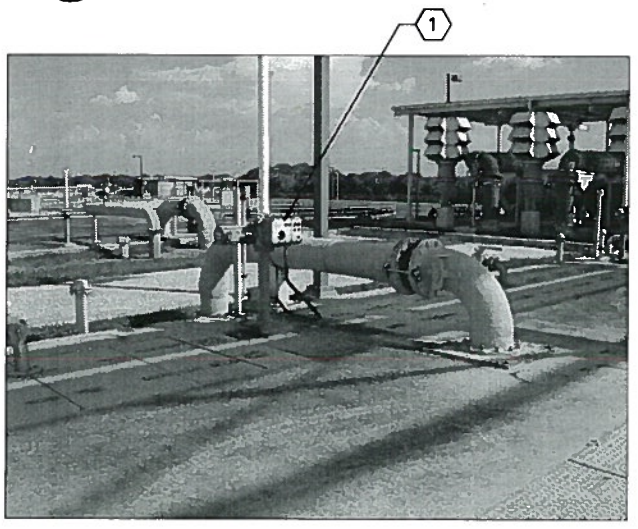
PROJECT No	65767
FILE NAME:	E-2
SHEET No	E-2
OF	



**NOTES BY SYMBOL:**

1. SCREEN/CONVEYOR/COMPACTOR CONTROL PANEL TO BE DEMOLISHED INCLUDING ALL CONDUIT, WIRE, SUPPORTS, J-BOXES, HARDWARE, ETC.
2. LEVEL TRANSMITTER FOR SCREENS TO BE DEMOLISHED.
3. LIGHT POLE TO BE RELOCATED.
4. CANOPY TO BE DEMOLISHED.

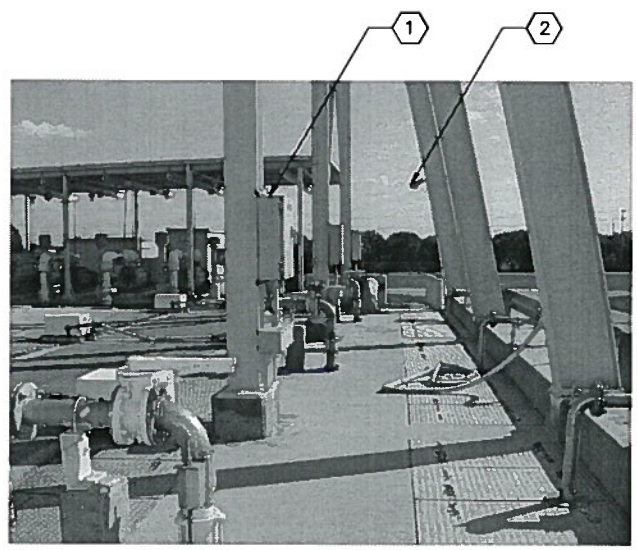
**1 SCREENS TYPICAL**



**NOTE BY SYMBOL:**

1. REMOVE MOTORIZED GATE GRIT TANK EFFLUENT CONTROL PANELS, OPERATORS AND ALL ASSOCIATED ELECTRICAL AND INSTRUMENTATION EQUIPMENT INCLUDING CONDUIT, WIRE, AND JUNCTION BOXES.

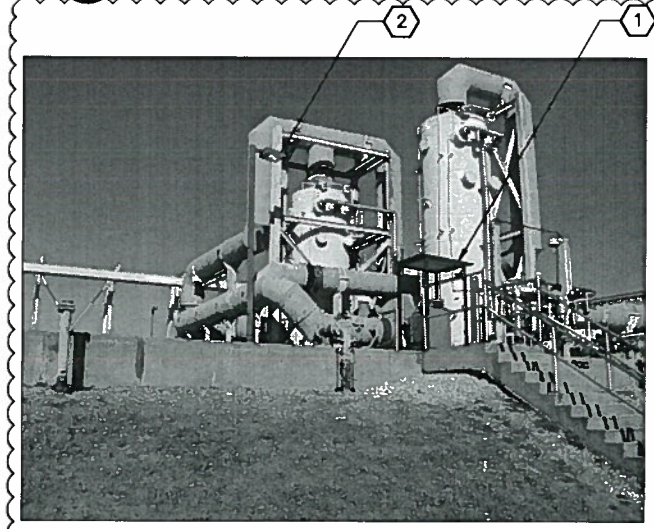
**5 GRIT TANK EFFLUENT GATE**



**NOTES BY SYMBOL:**

1. REMOVE MOTORIZED GATE ACCESS DOOR CONTROL PANELS, OPERATORS AND ALL ASSOCIATED ELECTRICAL AND INSTRUMENTATION EQUIPMENT INCLUDING CONDUITS, WIRES, JUNCTION BOXES, AND WIRE GUTTERS.
2. REMOVE ALL ELECTRICAL EQUIPMENT ATTACHED TO THE MONORAIL STRUCTURE INCLUDING LIGHTS, RECEPTACLES, AND SIRENS.

**2 GRIT TANK MOTORIZED ACCESS DOOR**



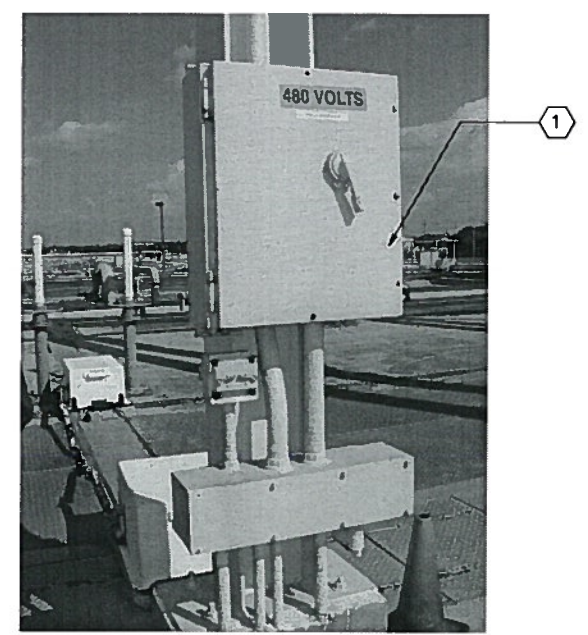
**GENERAL NOTES:**

1. ALL ELECTRICAL EQUIPMENT AND CONDUITS FOR THE ODOR CONTROL SYSTEM SHALL BE REMOVED. ELECTRICAL EQUIPMENT INCLUDES BUT NOT LIMITED TO: NPW BOOSTER PUMP NO. 1 AND 2, SCRUBBER FAN NO. 1 AND 2, RECIRCULATION PUMP NO. 1 AND 2, RECEPTACLES, SCRUBBER CONTROL PANEL NO. 1 AND 2, LEVEL SWITCHES AND PRESSURE SWITCHES.
2. TYPICAL FOR BOTH SIDES OF INFLUENT SCREENING FACILITY

**NOTE BY SYMBOL:**

1. SAMPLING UNIT TO BE REINSTALLED INCLUDING ASSOCIATED CANOPY AND LIGHT. PROVIDE NEW RECEPTACLE FOR POWERING SAMPLING UNIT FROM PANEL LP-201.
2. LIGHT POLE TO BE RELOCATED. POLE BASE TO BE DEMOLISHED.

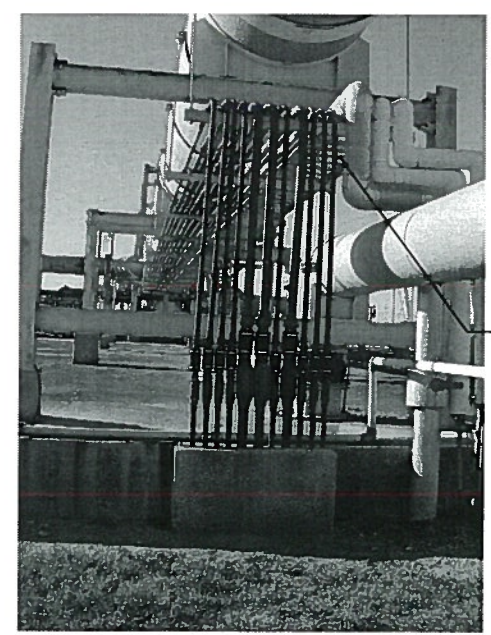
**6 ODOR CONTROL**



**NOTE BY SYMBOL:**

1. REMOVE MOTORIZED GATE ACCESS DOOR CONTROL PANELS, OPERATORS AND ALL ASSOCIATED ELECTRICAL AND INSTRUMENTATION EQUIPMENT INCLUDING CONDUITS, WIRES, JUNCTION BOXES, AND WIRE GUTTERS.

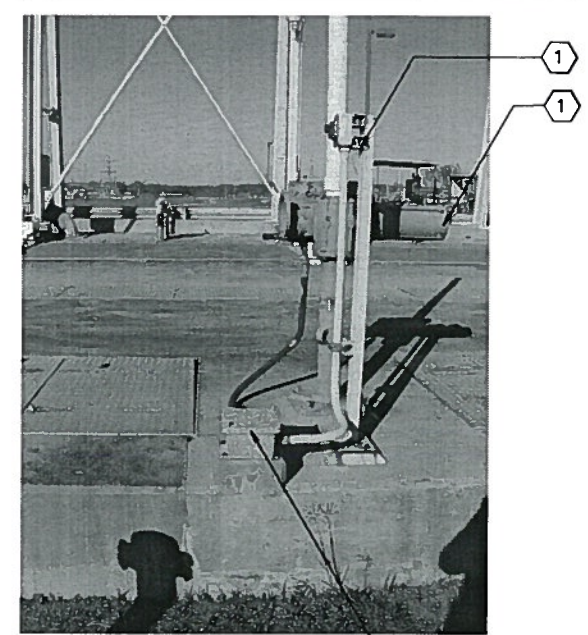
**3 GRIT TANK MOTORIZED ACCESS DOOR**



**NOTE BY SYMBOL:**

1. DEMOLISH CONDUITS AND CONDUIT RACK

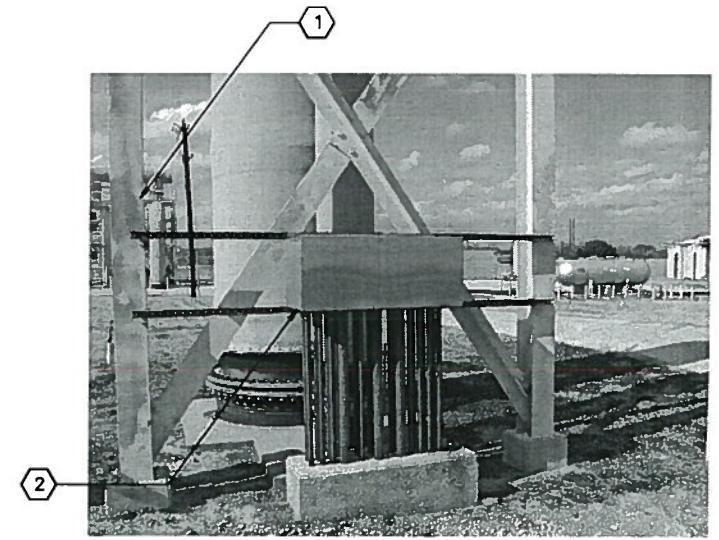
**7 ODOR CONTROL**



**NOTE BY SYMBOL:**

1. REMOVE MOTORIZED GATE GRIT TANK EFFLUENT CONTROL PANELS, OPERATORS AND ALL ASSOCIATED ELECTRICAL AND INSTRUMENTATION EQUIPMENT INCLUDING CONDUIT, WIRE, AND JUNCTION BOXES.

**4 GRIT TANK EFFLUENT GATE**

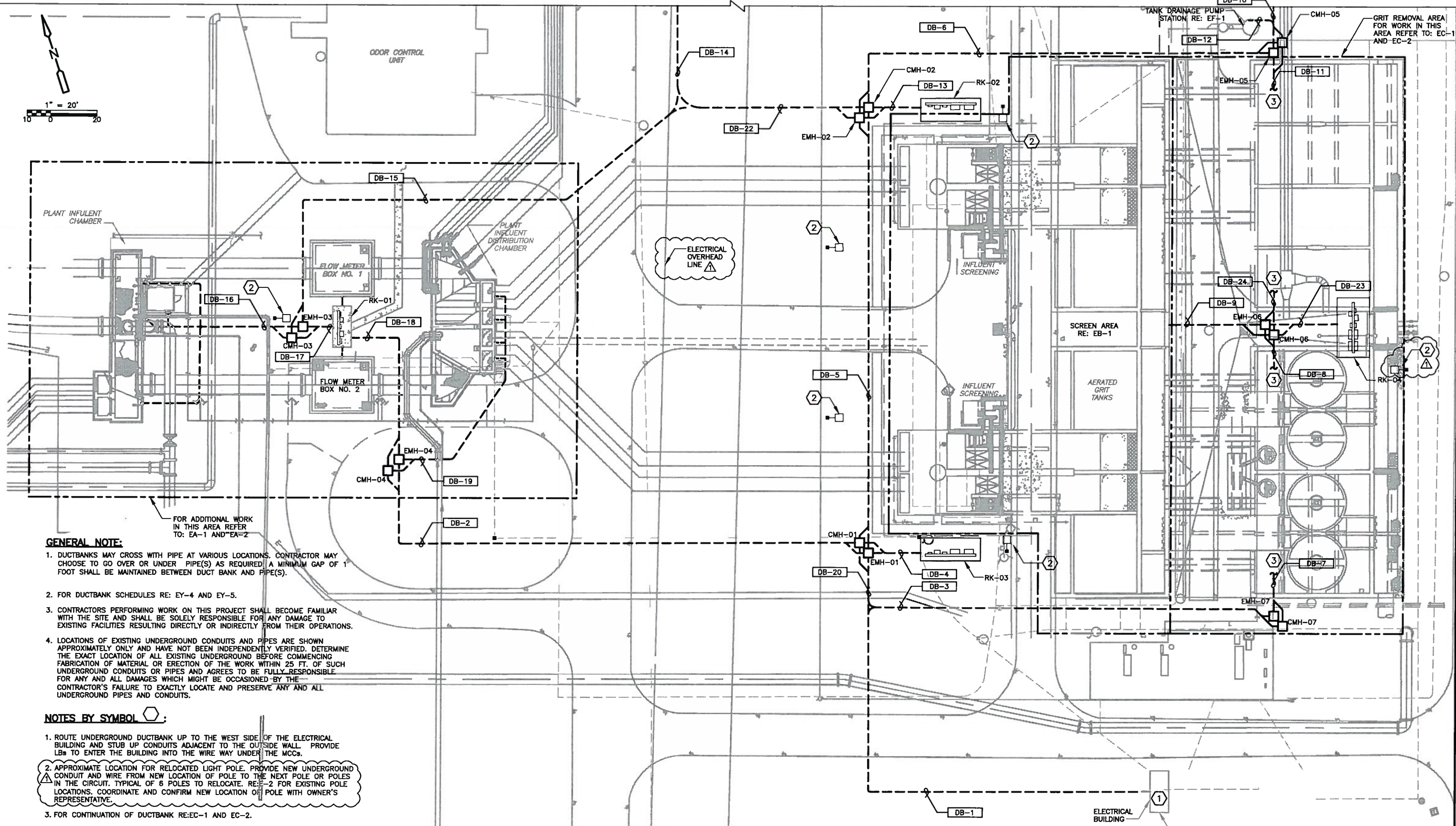
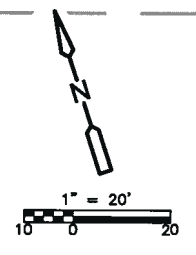


**NOTE BY SYMBOL:**

1. ODOR CONTROL PIPING STRUCTURE TO BE DEMOLISHED.
2. JUNCTION BOX TO REMAIN. PROVIDE 316SS UNISTRUT SUPPORTS FOR JUNCTION BOX.

**8 ODOR CONTROL**

DESIGNED BY: LEVESQUE DRAWN BY: BARNES SHEET CHK'D BY: CAMPBELL CROSS CHK'D BY: LI APPROVED BY: _____ DATE: NOVEMBER 2010				<b>CDM</b> 1777 NE Loop 410, Suite 500 San Antonio, Texas 78217 Tel: (210) 826-3200 Fax: (210) 826-8876 Texas Registration Number F-3043 <i>consulting • engineering • construction • operations</i>		<b>CP&amp;I</b> Texas Registration No. F-1741 San Antonio Office 300 E. Sonterra, Suite 1250 San Antonio, TX 78258 Ph. 210-494-8004 / Fax 210-494-8286				<b>SAWS</b> SAN ANTONIO WATER SYSTEM DOS RIOS WRC RE-RATING HEADWORKS IMPROVEMENTS AND PROCESS ENHANCEMENTS PHASE I		PROJECT No 65767 FILE NAME: E-5 SHEET No E-5 OF	
TITLE BLOCK	ISSUE No	DATE	CHKD	REMARKS									
	12/8/10	AL		REVISED BY ADDENDUM NO. 3									



**GENERAL NOTE:**

- 1. DUCTBANKS MAY CROSS WITH PIPE AT VARIOUS LOCATIONS. CONTRACTOR MAY CHOOSE TO GO OVER OR UNDER PIPE(S) AS REQUIRED. A MINIMUM GAP OF 1' FOOT SHALL BE MAINTAINED BETWEEN DUCT BANK AND PIPE(S).
- 2. FOR DUCTBANK SCHEDULES RE: EY-4 AND EY-5.
- 3. CONTRACTORS PERFORMING WORK ON THIS PROJECT SHALL BECOME FAMILIAR WITH THE SITE AND SHALL BE SOLELY RESPONSIBLE FOR ANY DAMAGE TO EXISTING FACILITIES RESULTING DIRECTLY OR INDIRECTLY FROM THEIR OPERATIONS.
- 4. LOCATIONS OF EXISTING UNDERGROUND CONDUITS AND PIPES ARE SHOWN APPROXIMATELY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED. DETERMINE THE EXACT LOCATION OF ALL EXISTING UNDERGROUND BEFORE COMMENCING FABRICATION OF MATERIAL OR ERECTION OF THE WORK WITHIN 25 FT. OF SUCH UNDERGROUND CONDUITS OR PIPES AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND PIPES AND CONDUITS.

**NOTES BY SYMBOL**

- 1. ROUTE UNDERGROUND DUCTBANK UP TO THE WEST SIDE OF THE ELECTRICAL BUILDING AND STUB UP CONDUITS ADJACENT TO THE OUTSIDE WALL. PROVIDE LBs TO ENTER THE BUILDING INTO THE WIRE WAY UNDER THE MCCs.
- 2. APPROXIMATE LOCATION FOR RELOCATED LIGHT POLE. PROVIDE NEW UNDERGROUND CONDUIT AND WIRE FROM NEW LOCATION OF POLE TO THE NEXT POLE OR POLES IN THE CIRCUIT. TYPICAL OF 6 POLES TO RELOCATE. RE: E-2 FOR EXISTING POLE LOCATIONS. COORDINATE AND CONFIRM NEW LOCATION OF POLE WITH OWNER'S REPRESENTATIVE.
- 3. FOR CONTINUATION OF DUCTBANK RE: EC-1 AND EC-2.

**SITE PLAN**  
SCALE: 1"=20'

12/8/10

ISSUE No	DATE	CHKD	REMARKS
1	12/8/10	AL	REVISED BY ADDENDUM NO. 3

DESIGNED BY: LEVESQUE  
 DRAWN BY: BARNES  
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 CROSS CHK'D BY: U  
 APPROVED BY: [Signature]  
 DATE: NOVEMBER 2010

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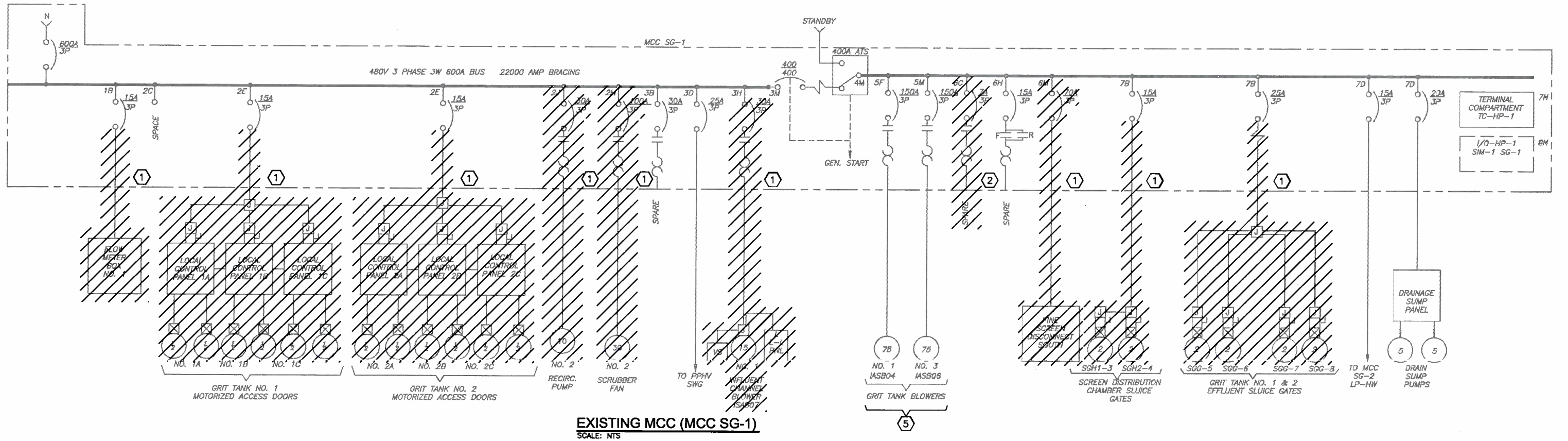
SAN ANTONIO WATER SYSTEM  
 DOS RIOS WRC RE-RATING  
 HEADWORKS IMPROVEMENTS AND  
 PROCESS ENHANCEMENTS PHASE I

**ELECTRICAL SITE PLAN I**

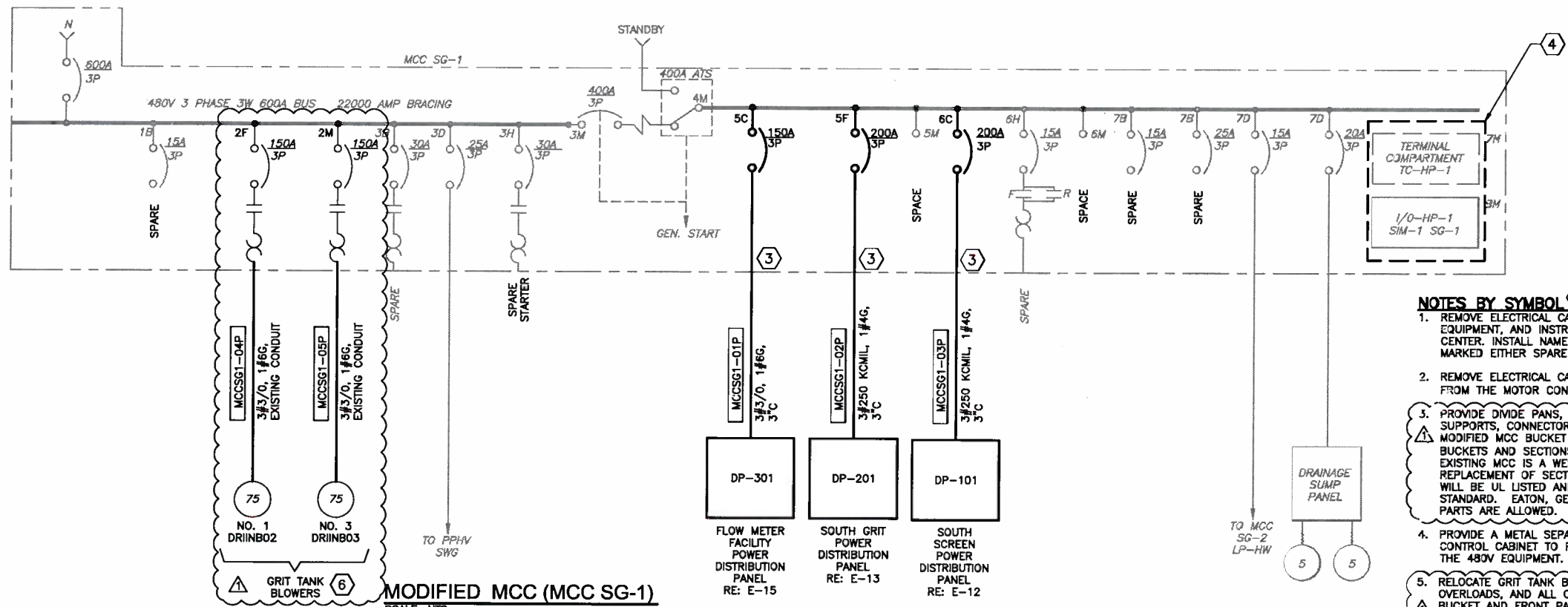
PROJECT No 65767  
 FILE NAME: E-6  
 SHEET No E-6  
 OF

X-65767-DOS RIOS WRC BASE, X-65767-MPH-5022, X-65767-MPH-5023, X-65767-MPH-5024, X-65767-MPH-5025, X-65767-MPH-5026, X-65767-MPH-5027, X-65767-MPH-5028, X-65767-MPH-5029, X-65767-MPH-5030, X-65767-MPH-5031, X-65767-MPH-5032, X-65767-MPH-5033, X-65767-MPH-5034, X-65767-MPH-5035, X-65767-MPH-5036, X-65767-MPH-5037, X-65767-MPH-5038, X-65767-MPH-5039, X-65767-MPH-5040, X-65767-MPH-5041, X-65767-MPH-5042, X-65767-MPH-5043, X-65767-MPH-5044, X-65767-MPH-5045, X-65767-MPH-5046, X-65767-MPH-5047, X-65767-MPH-5048, X-65767-MPH-5049, X-65767-MPH-5050, X-65767-MPH-5051, X-65767-MPH-5052, X-65767-MPH-5053, X-65767-MPH-5054, X-65767-MPH-5055, X-65767-MPH-5056, X-65767-MPH-5057, X-65767-MPH-5058, X-65767-MPH-5059, X-65767-MPH-5060, X-65767-MPH-5061, X-65767-MPH-5062, X-65767-MPH-5063, X-65767-MPH-5064, X-65767-MPH-5065, X-65767-MPH-5066, X-65767-MPH-5067, X-65767-MPH-5068, X-65767-MPH-5069, X-65767-MPH-5070, X-65767-MPH-5071, X-65767-MPH-5072, X-65767-MPH-5073, X-65767-MPH-5074, X-65767-MPH-5075, X-65767-MPH-5076, X-65767-MPH-5077, X-65767-MPH-5078, X-65767-MPH-5079, X-65767-MPH-5080, X-65767-MPH-5081, X-65767-MPH-5082, X-65767-MPH-5083, X-65767-MPH-5084, X-65767-MPH-5085, X-65767-MPH-5086, X-65767-MPH-5087, X-65767-MPH-5088, X-65767-MPH-5089, X-65767-MPH-5090, X-65767-MPH-5091, X-65767-MPH-5092, X-65767-MPH-5093, X-65767-MPH-5094, X-65767-MPH-5095, X-65767-MPH-5096, X-65767-MPH-5097, X-65767-MPH-5098, X-65767-MPH-5099, X-65767-MPH-5100





**EXISTING MCC (MCC SG-1)**  
SCALE: NTS



**MODIFIED MCC (MCC SG-1)**  
SCALE: NTS

**NOTES BY SYMBOL:**

1. REMOVE ELECTRICAL CABLES AND CONDUCTOR FROM CONDUITS, EQUIPMENT, AND INSTRUMENTS BACK TO THE MOTOR CONTROL CENTER. INSTALL NAMEPLATES ON MOTOR CONTROL CENTER MARKED EITHER SPARE OR SPACE.
2. REMOVE ELECTRICAL CABLES AND CONDUCTOR FROM CONDUIT AND FROM THE MOTOR CONTROL CENTER TO THE EQUIPMENT/PANEL.
3. PROVIDE DIVIDE PANS, DEADFRONT DOORS, FILLER PLATES, SUPPORTS, CONNECTORS, AND INSULATION HARDWARE FOR EACH MODIFIED MCC BUCKET AND SECTION. RESTORE MODIFIED MCC BUCKETS AND SECTIONS TO THE MANUFACTURER'S STANDARD. EXISTING MCC IS A WESTINGHOUSE BRAND. MODIFICATION OR REPLACEMENT OF SECTION IS ALLOWED GIVEN THE END PRODUCT WILL BE UL LISTED AND BROUGHT TO THE MANUFACTURER STANDARD. EATON, GE, SIEMENS, AND SQUARE D REPLACEMENT PARTS ARE ALLOWED.
4. PROVIDE A METAL SEPARATION BETWEEN THE 480V BUS AND THE CONTROL CABINET TO REDUCE RISK OF ACCIDENTAL CONTACT WITH THE 480V EQUIPMENT.
5. RELOCATE GRIT TANK BLOWER NO.1 AND NO.3 BREAKER, STARTER, OVERLOADS, AND ALL OTHER ASSOCIATED COMPONENTS INCLUDING BUCKET AND FRONT PANEL TO SG-1 SECTION 2. PROVIDE POWER AND CONTROL CABLES AS REQUIRED FOR THE RELOCATION. NEW CONTROL CABLES SHALL MATCH EXISTING.
6. PROVIDE NEW TAGS AT MCC AND AT BLOWER UNITS.

TITLE BLOCKING

DESIGNED BY:	LEVESQUE		
DRAWN BY:	BARNES		
SHEET CHK'D BY:	CAMPBELL		
CROSS CHK'D BY:	LI		
APPROVED BY:			
DATE:	NOVEMBER 2010		
ISSUE No	DATE	CHKD	REMARKS
1	12/8/10	AL	REVISED BY ADDENDUM NO. 3

DESIGNED BY: LEVESQUE  
 DRAWN BY: BARNES  
 SHEET CHK'D BY: CAMPBELL  
 CROSS CHK'D BY: LI  
 APPROVED BY:  
 DATE: NOVEMBER 2010

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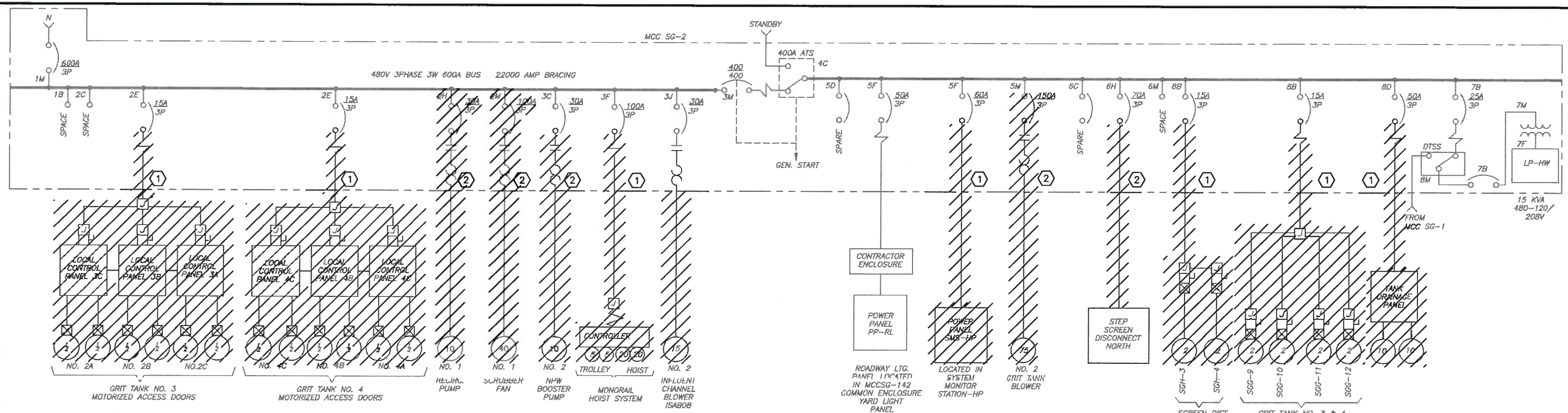


SAN ANTONIO WATER SYSTEM  
**DOS RIOS WRC RE-RATING  
 HEADWORKS IMPROVEMENTS AND  
 PROCESS ENHANCEMENTS PHASE I**

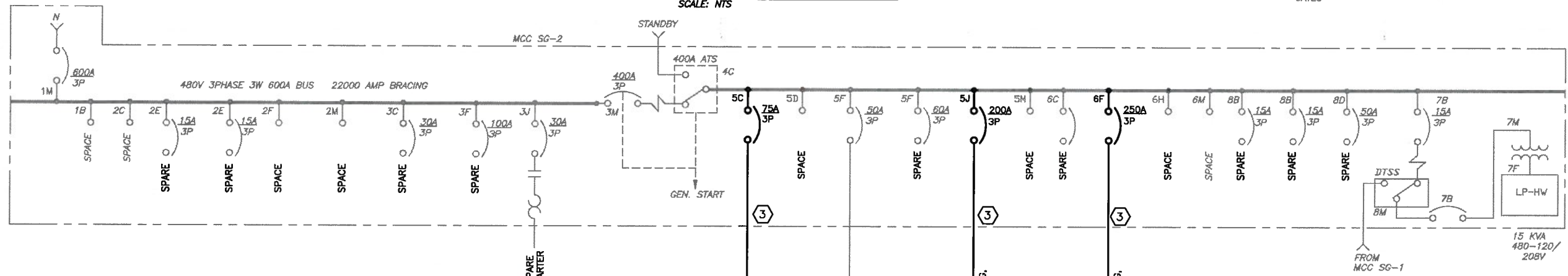
**MOTOR CONTROL CENTER  
 SG-1 ONE LINE DIAGRAM**

PROJECT No: 65767  
 FILE NAME: E-8  
 SHEET No: **E-8**  
 OF

*12/8/10*



**EXISTING MCC (MCC SG-2)**  
SCALE: NTS



**MODIFIED MCC (MCC SG-2)**  
SCALE: NTS

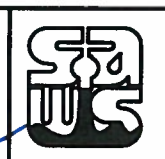
- NOTES BY SYMBOL:**
1. REMOVE ELECTRICAL CABLES AND CONDUCTOR FROM CONDUITS, EQUIPMENT, AND INSTRUMENTS BACK TO THE MOTOR CONTROL CENTER. INSTALL NAMEPLATES ON MOTOR CONTROL CENTER MARKED SPARE.
  2. REMOVE ELECTRICAL CABLES AND CONDUCTOR FROM CONDUIT AND FROM THE MOTOR CONTROL CENTER TO THE EQUIPMENT/PANEL.
  3. PROVIDE DIVIDE PANS, DEADFRONT DOORS, FILLER PLATES, SUPPORTS, CONNECTORS, AND INSULATION HARDWARE FOR EACH MODIFIED MCC BUCKET AND SECTION. RESTORE MODIFIED MCC BUCKETS AND SECTIONS TO THE MANUFACTURER'S STANDARD. EXISTING MCC IS A WESTINGHOUSE BRAND. MODIFICATION OR REPLACEMENT OF SECTION IS ALLOWED GIVEN THE END PRODUCT WILL BE UL LISTED AND BROUGHT TO THE MANUFACTURER STANDARD. EATON, GE, SIEMENS, AND SQUARE D REPLACEMENT PARTS ARE ALLOWED.

ISSUE No	DATE	CHKD	REMARKS
12/8/10	AL		REVISED BY ADDENDUM NO. 3

DESIGNED BY: LEVESQUE  
 DRAWN BY: BARNES  
 SHEET CHK'D BY: CAMPBELL  
 CROSS CHK'D BY: U  
 APPROVED BY:  
 DATE: NOVEMBER 2010

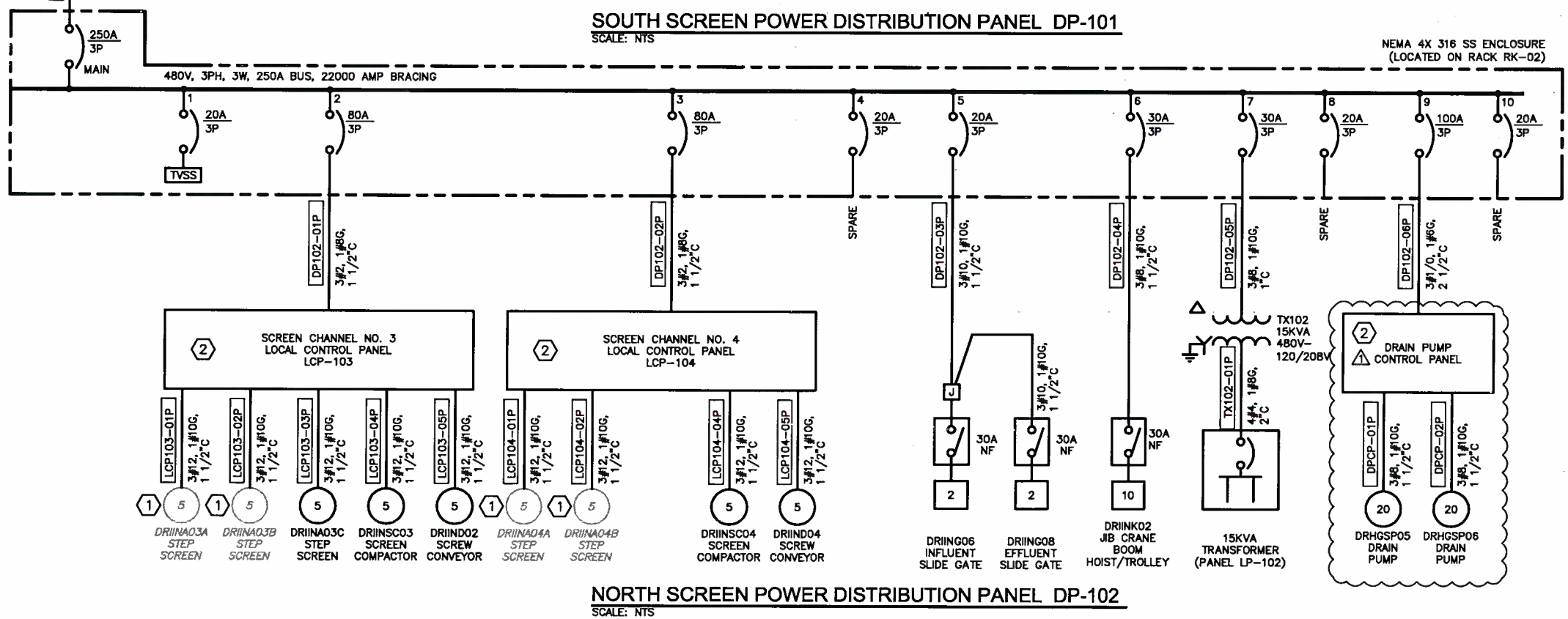
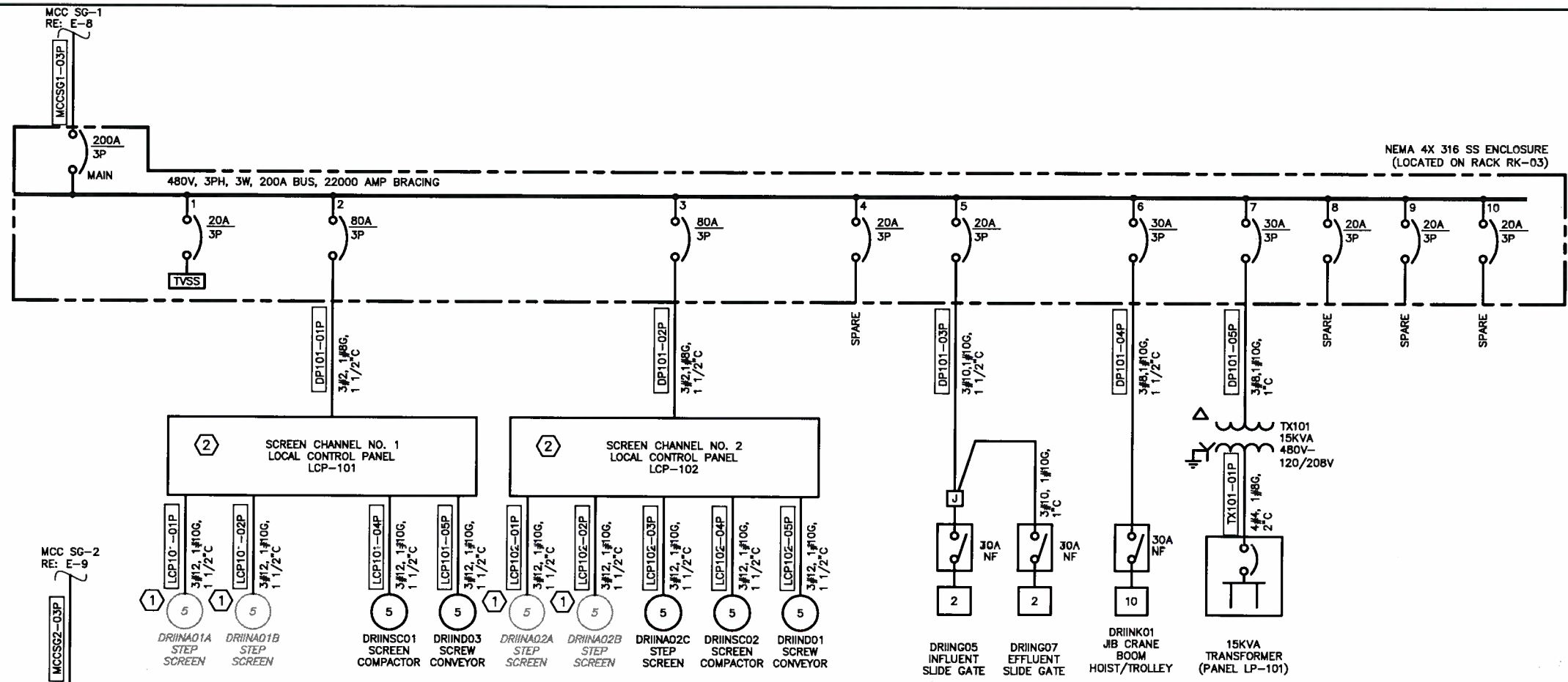
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SAN ANTONIO WATER SYSTEM  
 DOS RIOS WRC RE-RATING  
 HEADWORKS IMPROVEMENTS AND  
 PROCESS ENHANCEMENTS PHASE I

PROJECT No 65767  
 FILE NAME: E-9  
 SHEET No E-9  
 OF



**NOTES BY SYMBOL**

- EXISTING EQUIPMENT TO BE RELOCATED.
- VENDOR SUPPLIED LOCAL CONTROL PANEL.

ISSUE No	DATE	CHKD	REMARKS
12/8/10	AL		REVISED BY ADDENDUM NO. 3

DESIGNED BY: LEVESQUE  
DRAWN BY: BARNES  
SHEET CHK'D BY: CAMPBELL  
CROSS CHK'D BY: LI  
APPROVED BY: [Signature]  
DATE: NOVEMBER 2010

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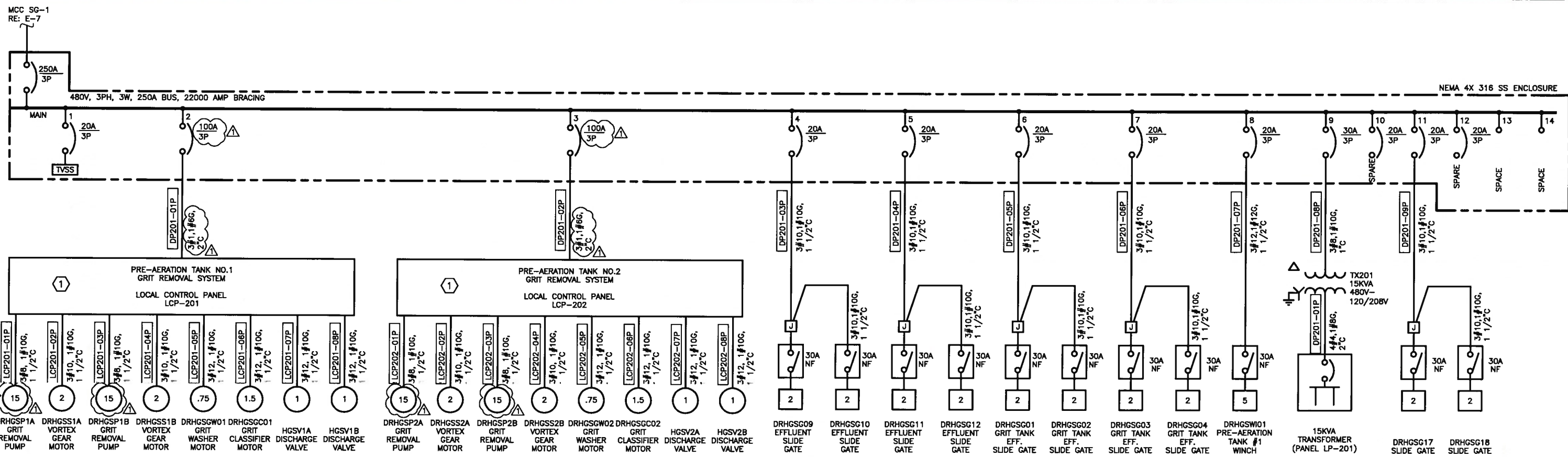


SAN ANTONIO WATER SYSTEM  
DOS RIOS WRC RE-RATING  
HEADWORKS IMPROVEMENTS AND  
PROCESS ENHANCEMENTS PHASE I

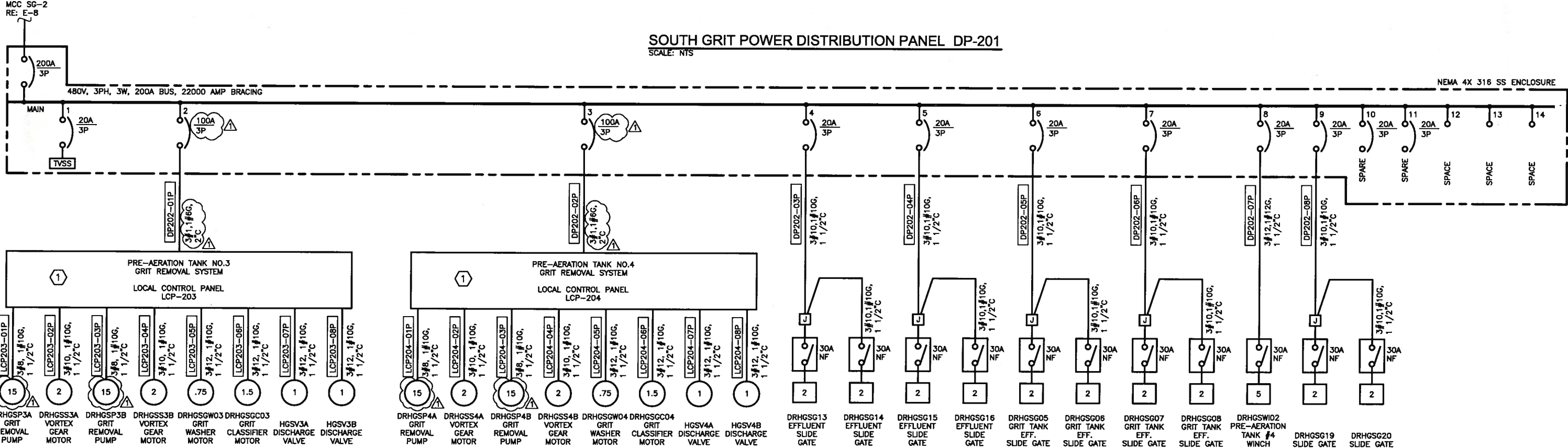
**INFLUENT SCREENING POWER  
DISTRIBUTION ONE-LINE DIAGRAM**

PROJECT No 65767  
FILE NAME: E-12  
SHEET No E-12  
OF

12/8/10



**SOUTH GRIT POWER DISTRIBUTION PANEL DP-201**  
SCALE: NTS



**NORTH GRIT POWER DISTRIBUTION PANEL DP-202**  
SCALE: NTS

**NOTES BY SYMBOL:**  
1. VENDOR SUPPLIED LOCAL CONTROL PANEL

ISSUE No	DATE	CHKD	REMARKS
12/8/10	AL		REVISED BY ADDENDUM NO. 3

DESIGNED BY: LEVESQUE  
DRAWN BY: BARNES  
SHEET CHK'D BY: CAMPBELL  
CROSS CHK'D BY: LI  
APPROVED BY:  
DATE: NOVEMBER 2010

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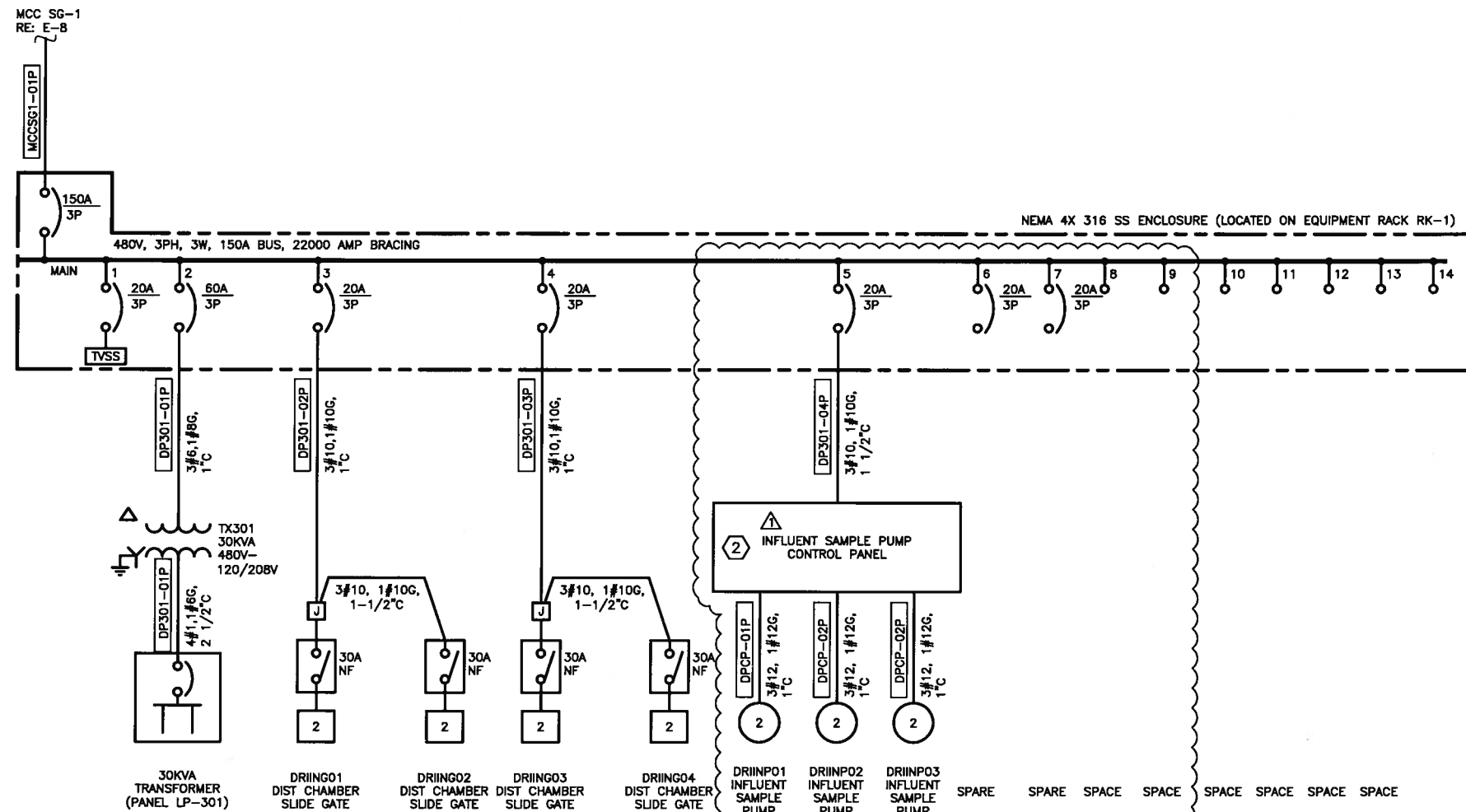


SAN ANTONIO WATER SYSTEM  
**DOS RIOS WRC RE-RATING  
HEADWORKS IMPROVEMENTS AND  
PROCESS ENHANCEMENTS PHASE I**

**GRIT REMOVAL FACILITY  
POWER DISTRIBUTION  
ONE-LINE DIAGRAM**

PROJECT No 65767  
FILE NAME: E-13  
SHEET No E-13  
OF

*Handwritten signature and date: 12/8/10*



**INFLUENT FLOW METERING FACILITY POWER DISTRIBUTION PANEL DP-301**  
 SCALE: NTS

**NOTES BY SYMBOL:**  
 1. VENDOR SUPPLIED LOCAL CONTROL PANEL.

ISSUE No	DATE	CHKD	REMARKS
1	12/8/10	AL	REVISED BY ADDENDUM NO. 3

DESIGNED BY: LEVESQUE  
 DRAWN BY: BARNES  
 SHEET CHK'D BY: CAMPBELL  
 CROSS CHK'D BY: U  
 APPROVED BY: U  
 DATE: NOVEMBER 2010

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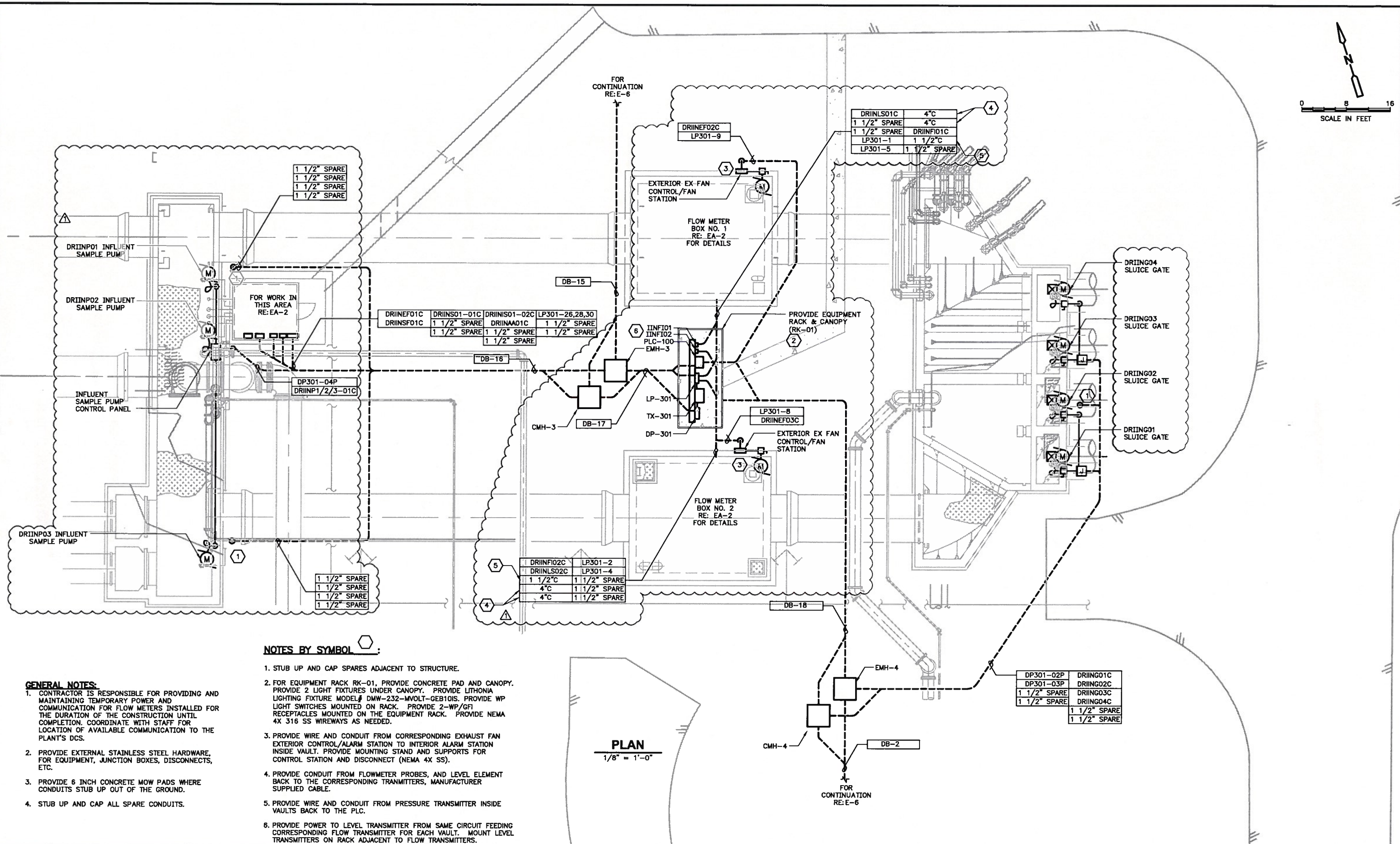
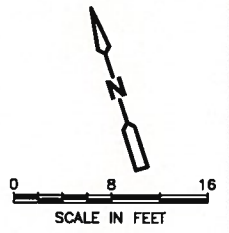


SAN ANTONIO WATER SYSTEM  
 DOS RIOS WRC RE-RATING  
 HEADWORKS IMPROVEMENTS AND  
 PROCESS ENHANCEMENTS PHASE I

**INFLUENT FLOW METERING  
 FACILITY POWER DISTRIBUTION  
 ONE-LINE DIAGRAM**

PROJECT No 65767  
 FILE NAME: E-15  
 SHEET No E-15  
 OF

*Handwritten signature and date: 12/8/10*



**NOTES BY SYMBOL**

1. STUB UP AND CAP SPARES ADJACENT TO STRUCTURE.
2. FOR EQUIPMENT RACK RK-01, PROVIDE CONCRETE PAD AND CANOPY. PROVIDE 2 LIGHT FIXTURES UNDER CANOPY. PROVIDE LITHONIA LIGHTING FIXTURE MODEL# DMW-232-MVOLT-GEB10IS. PROVIDE WP LIGHT SWITCHES MOUNTED ON RACK. PROVIDE 2-WP/GFI RECEPTACLES MOUNTED ON THE EQUIPMENT RACK. PROVIDE NEMA 4X 316 SS WIREWAYS AS NEEDED.
3. PROVIDE WIRE AND CONDUIT FROM CORRESPONDING EXHAUST FAN EXTERIOR CONTROL/ALARM STATION TO INTERIOR ALARM STATION INSIDE VAULT. PROVIDE MOUNTING STAND AND SUPPORTS FOR CONTROL STATION AND DISCONNECT (NEMA 4X SS).
4. PROVIDE CONDUIT FROM FLOWMETER PROBES, AND LEVEL ELEMENT BACK TO THE CORRESPONDING TRANSMITTERS, MANUFACTURER SUPPLIED CABLE.
5. PROVIDE WIRE AND CONDUIT FROM PRESSURE TRANSMITTER INSIDE VAULTS BACK TO THE PLC.
6. PROVIDE POWER TO LEVEL TRANSMITTER FROM SAME CIRCUIT FEEDING CORRESPONDING FLOW TRANSMITTER FOR EACH VAULT. MOUNT LEVEL TRANSMITTERS ON RACK ADJACENT TO FLOW TRANSMITTERS.

**GENERAL NOTES:**

1. CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND MAINTAINING TEMPORARY POWER AND COMMUNICATION FOR FLOW METERS INSTALLED FOR THE DURATION OF THE CONSTRUCTION UNTIL COMPLETION. COORDINATE WITH STAFF FOR LOCATION OF AVAILABLE COMMUNICATION TO THE PLANT'S DCS.
2. PROVIDE EXTERNAL STAINLESS STEEL HARDWARE, FOR EQUIPMENT, JUNCTION BOXES, DISCONNECTS, ETC.
3. PROVIDE 6 INCH CONCRETE MOW PADS WHERE CONDUITS STUB UP OUT OF THE GROUND.
4. STUB UP AND CAP ALL SPARE CONDUITS.

**PLAN**  
1/8" = 1'-0"

TITLE BLOCKING, X-45787, WPP002, X-45787-002, R005, B002, X-45787, WPP1001

ISSUE No	DATE	CHKD	REMARKS
12/8/10	AL		REVISED BY ADDENDUM NO. 3

DESIGNED BY: LEVESQUE  
 DRAWN BY: BARNES  
 SHEET CHK'D BY: CAMPBELL  
 CROSS CHK'D BY: [Signature]  
 APPROVED BY: [Signature]  
 DATE: NOVEMBER 2010

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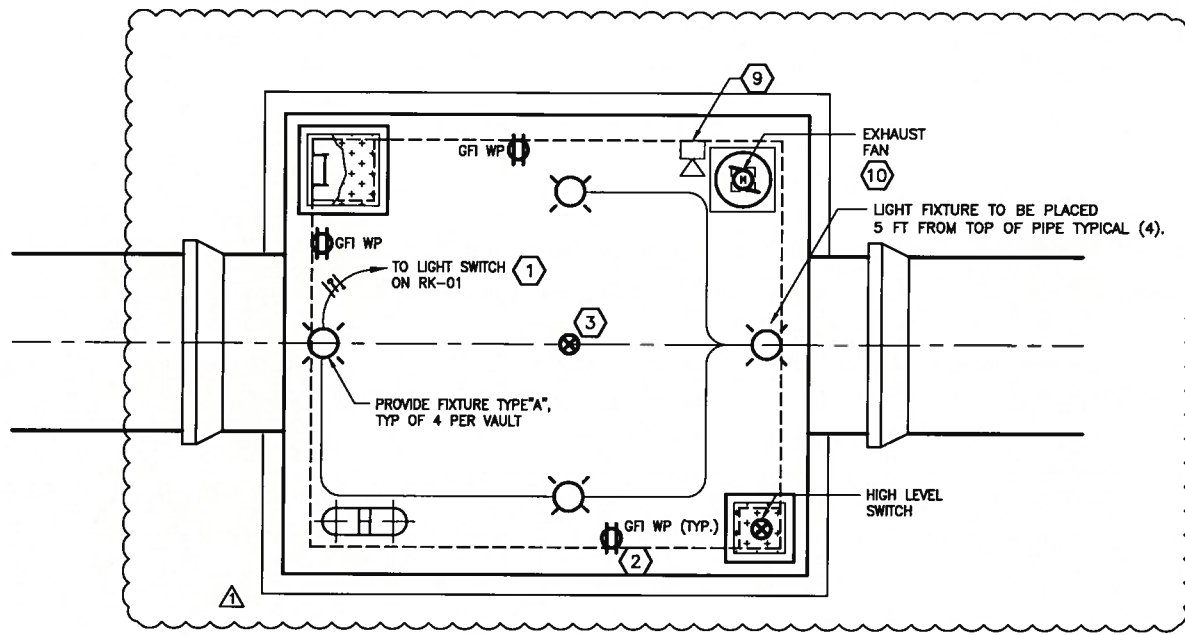


SAN ANTONIO WATER SYSTEM  
**DOS RIOS WRC RE-RATING  
 HEADWORKS IMPROVEMENTS AND  
 PROCESS ENHANCEMENTS PHASE I**

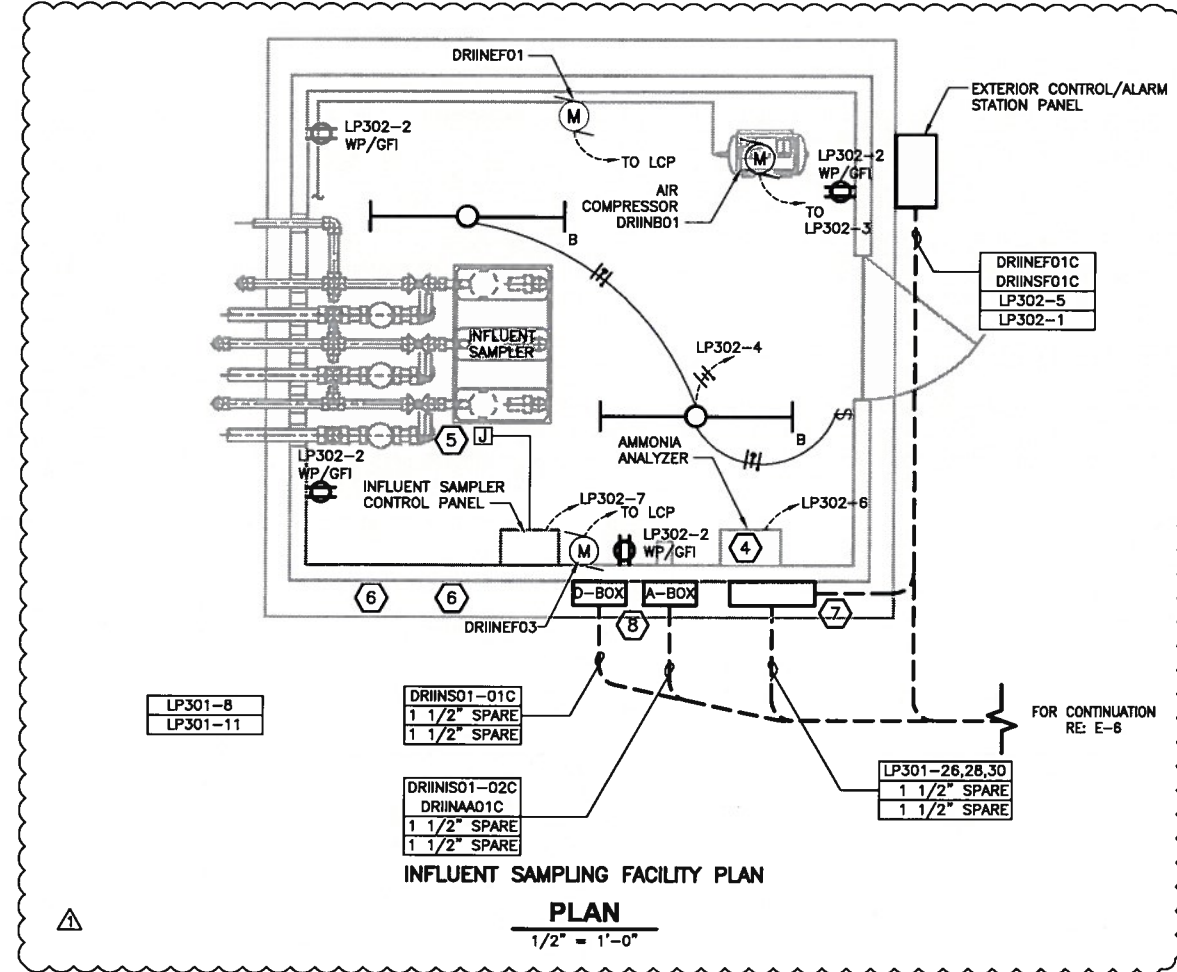
**INFLUENT FLOW METERING FACILITY  
 POWER AND CONTROL PLAN**

PROJECT No	85767
FILE NAME:	EA-1
SHEET No	EA-1
OF	

*[Handwritten signature]* 12/8/10



TYPICAL FOR  
FLOW METER BOX NO. 1 & 2  
**PLAN**  
NTS



**INFLUENT SAMPLING FACILITY PLAN**  
**PLAN**  
1/2" = 1'-0"

- NOTES BY SYMBOL:**
1. PROVIDE LIGHT SWITCHES FOR VAULT 1 & 2 LIGHT MOUNTED ON EQUIPMENT RACK RK-01. PROVIDE WP SWITCHES.
  2. WEATHERPROOF GFI RECEPTACLE TO BE PLACED 5FT FROM VAULT FLOOR.
  3. FLOW METER PROBES TO BE INSTALLED BY FLOW METER MANUFACTURER, 4 PAIRS OF PROBES TOTAL, 1 LEVEL TRANSDUCER AND 1 PRESSURE TRANSDUCER, FLOWMETER AND LEVEL TRANSMITTER PANEL TO BE LOCATED ON THE RACK.
  4. PROVIDE NEMA 4X 316 SS ENCLOSURES FOR AMONIA ANALYZER AND FILTRAX. PROVIDE ENCLOSURE SIZE AS REQUIRED.
  5. PROVIDE WIRE AND CONDUIT REQUIRED BETWEEN CONTROL PANEL AND SAMPLER UNIT.
  6. PROVIDE EX FAN AND SUPPLY FAN KEEP PANELS LOCATED ON OUTSIDE OF BUILDING. ROUTE WIRE AND CONDUIT UNDERGROUND FROM CONTROL PANEL TO FAN AND FROM CONTROL PANEL TO PANEL LP-302. PROVIDE LOCAL DISCONNECT PER NEC REQUIREMENT.
  7. LIGHTING PANEL LP-302. BRANCH CIRCUITS ARE NOT SHOWN FOR CLARITY, REFERENCE EY-2. BRANCH CIRCUIT CONDUITS SHALL BE ROUTED UNDERGROUND INTO THE BUILDING TO THE CORRESPONDING EQUIPMENT.
  8. PROVIDE ANALOG AND DISCRETE 316 SS J-BOXES ON THE OUTSIDE OF THE BUILDING. ROUTE CONDUITS UNDERGROUND INTO THE BUILDING AND TO THE CORRESPONDING EQUIPMENT.
  9. PROVIDE WIRE AND CONUIT AS NEEDED FOR INTERIOR ALARM STATION BACK TO THE CORRESPONDING EXHAUST FAN CONTROL PANEL.
  10. PROVIDE LOCAL DISCONNECT PER NEC REQUIREMENT

- GENERAL NOTE:**
1. THE INFLUENT SAMPLING FACILITY PER NFPA 820 TABLE 5.2, THE AREA OF CLASSIFICATION IS CLASS 1 DIVISION 2, WHEN THE AREA IS CONTINUOUSLY VENTED. FAN SHALL BE MONITORED AND SHALL HAVE LOCAL AND REMOTE AUDIBLE AND VISUAL ALARM. ELECTRICAL INSTALLATION SHALL BE DONE IN ACCORDANCE WITH NEC DIVISION 500 AND IN ACCORDANCE WITH NFPA820. ALL EQUIPMENT PROVIDED SHALL BE IN ACCORDANCE TO CLASSIFICATION.
  2. THE FLOW METER VAULTS ARE NOT CLASSIFIED PER NFPA 820 WHEN THE AREA IS CONTINUOUSLY VENTED. FAN SHALL BE MONITORED AND SHALL HAVE A LOCAL AND REMOTE AUDIBLE AND VISUAL ALARM.
  3. PROVIDE WIRE AND CONUIT AS NEEDED FOR INTERIOR ALARM STATION BACK TO THE CORRESPONDING EXHAUST FAN CONTROL PANEL.
  4. FIELD ROUTE CABLE AND CONDUIT FROM ELECTRICAL AND COMMUNICATION J-BOXES TO CORRESPONDING EQUIPMENT AND INSTRUMENT. SEAL ALL CONDUITS ENTERING OR EXITING THE BUILDING.
  5. FOR FIXTURE TYPE "A", PROVIDE HUBBEL MODEL # PGM2-S10B. FOR FIXTURE TYPE "B", PROVIDE MAGNALIGHT MODEL # HALP-48-2L WITH 2-18 LAMPS.
  6. CALL OUT NOT SHOWN FOR VAULT. REFER TO PANELBOARD 1 SCHEDULE FOR PROPER CIRCUIT.

X-65767-APP001, TITLE BLOCK, X-65767-APP001, X-65767-APP001

ISSUE No	DATE	CHKD	REMARKS
12/8/10	AL		REVISED BY ADDENDUM NO. 3

DESIGNED BY: LEVESQUE  
DRAWN BY: BARNES  
SHEET CHK'D BY: CAMPBELL  
CROSS CHK'D BY: U  
APPROVED BY:  
DATE: NOVEMBER 2010

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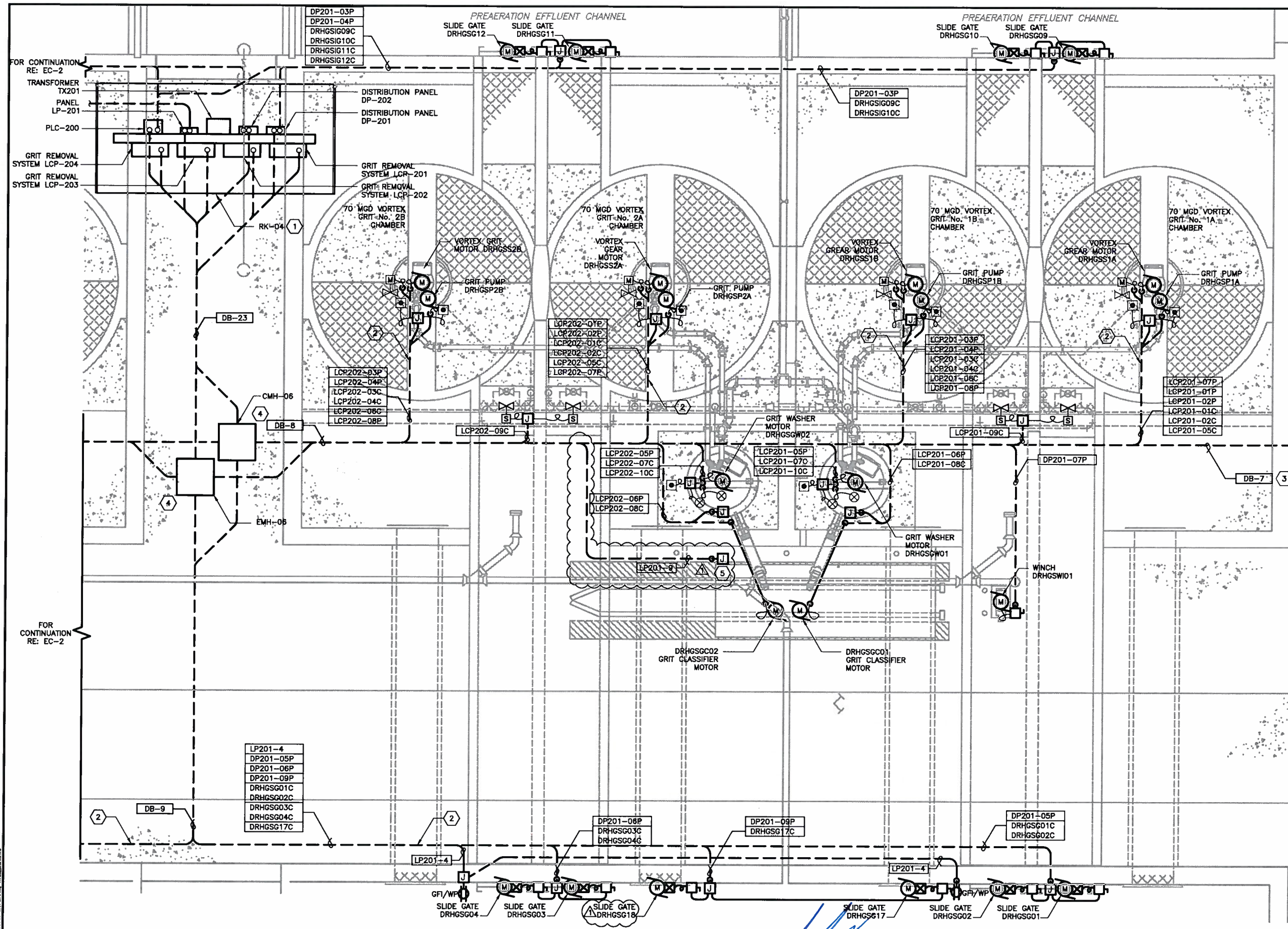


SAN ANTONIO WATER SYSTEM  
**DOS RIOS WRC RE-RATING  
HEADWORKS IMPROVEMENTS AND  
PROCESS ENHANCEMENTS PHASE I**

**INFLUENT FLOW METER  
AND SAMPLING FACILITY  
ELECTRICAL DETAILS**

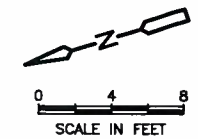
PROJECT No 65767  
FILE NAME: EA-2  
SHEET No EA-2  
OF

*Handwritten signature and date: 12/8/10*



- GENERAL NOTES:**
- PER NFPA 820 TABLE 5.2, THE ELECTRICAL AREA OF CLASSIFICATION IS CLASS 1 DIVISION 2. WITHIN A 10 FT ENVELOPE AROUND EQUIPMENT AND 18 IN ABOVE THE TOP OF THE TANK WALL, ELECTRICAL INSTALLATION SHALL BE DONE IN ACCORDANCE WITH NEC DIVISION 500 AND IN ACCORDANCE WITH NFPA 820. CLASSIFICATION OF AREA INSIDE CHANNELS AND CHAMBERS IS CLASS 1 DIVISION 1.
  - PROVIDE EXTERNAL STAINLESS STEEL HARDWARE AND SUPPORTS FOR JUNCTION BOXES, DISCONNECTS, ENCLOSURES, OPERATION STATIONS, AND OTHER ASSOCIATED ELECTRICAL EQUIPMENT.
  - PROVIDE MOUNTING RACK FOR ALL CONTROL PANELS AND DISTRIBUTION PANELS.
  - PROVIDE EXPANSION FITTINGS AS SPECIFIED.
  - MANHOLES LOCATED IN THE ROADWAY OR DRIVE SHALL BE TRAFFIC RATED.
  - COORDINATE LOCATION AND QUANTITY OF ALL EQUIPMENT ASSOCIATED WITH THE GRIT CHAMBERS AND GRIT WASHERS WITH MANUFACTURER. EQUIPMENT MAY DEPEND ON MANUFACTURER. COORDINATE UNDERGROUND CONDUITS REQUIRED TO ALL EQUIPMENT TERMINATING BACK TO THE CONTROL PANELS. IN ADDITION TO UNDERGROUND SHOWN, PROVIDE ANY AND ALL ADDITIONAL UNDERGROUND CONDUITS REQUIRED FOR A COMPLETE SYSTEM.

- NOTES BY SYMBOL:**
- FOR EQUIPMENT RACK RK-04, PROVIDE CONCRETE PAD AND CANOPY. PROVIDE 6 LIGHT FIXTURES UNDER CANOPY, 3 ON EACH SIDE. PROVIDE LITHONIA LIGHTING FIXTURE MODEL# DMW-232-MVOLT-GE810IS. WP LIGHT SWITCHES MOUNTED ON RACK. PROVIDE 2-WP/GFI RECEPTACLES ON EACH SIDE OF THE EQUIPMENT RACK.
  - UNDERGROUND CONDUIT IN AREA TO BE EMBEDDED IN CONCRETE, COORDINATE INSTALLATION OF CONDUITS.
  - UNDERGROUND DUCTBANK IN AREA TO BE INSTALLED BETWEEN GRIT WASHER SLAB AND GRIT INFLUENT CHANNELS. COREDRILL CONDUITS THROUGH WALLS IN THIS AREA, TYPICAL OF 5 WALL PENETRATIONS DUCTBANK WILL REQUIRE BETWEEN EMH-06 AND EMH-07.
  - PLACE MANHOLES AS NEEDED IN ORDER TO AVOID UNDERGROUND PIPES IN THE AREA AND STAYING OUTSIDE THE 10FT ENVELOPE AREA OF THE CLASS 1 DIVISION 2 AREA. MANHOLES TO BE SIZED AS REQUIRED PER NEC.
  - ROUTE CORRESPONDING CONDUIT AND WIRE LCP-20'x'-01C FROM EACH GRIT REMOVAL PANEL BACK TO PLC 200. CONDUIT NOT SHOWN FOR CLARITY.
  - PROVIDE TWO(2) - 250W WALL PACK FIXTURES, LITHONIA MODEL# TWH-250S-TB-CR-LPI TO BE MOUNTED ON THE OUTER EDGE OF THE CANOPY AND POSITIONED TO PROVIDE LIGHTING FOR THE GRIT WASHER STATIONS. PROVIDE SIX(6) LITHONIA LIGHTING FIXTURE MODEL# DMW-232-MVOLT-GE810IS MOUNTED UNDER THE GRIT ROLL-OFF CANOPY. PROVIDE TWO(2) WP SWITCHES MOUNTED ON COLUMN FOR CONTROLLING LIGHTS.



ISSUE No	DATE	CHKD	REMARKS
12/8/10	AL		REVISED BY ADDENDUM NO. 3

DESIGNED BY: LEVESQUE  
 DRAWN BY: BARNES  
 SHEET CHK'D BY: CAMPBELL  
 CROSS CHK'D BY: LEVESQUE  
 APPROVED BY: \_\_\_\_\_  
 DATE: NOVEMBER 2010

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STATE OF TEXAS  
 ANNE LEVESQUE  
 94943  
 PROFESSIONAL ENGINEER

SAN ANTONIO WATER SYSTEM  
 DOS RIOS WRC RE-RATING  
 HEADWORKS IMPROVEMENTS AND  
 PROCESS ENHANCEMENTS PHASE I

**GRIT REMOVAL FACILITY  
 CHAMBERS NO. 1 AND NO.2  
 POWER AND CONTROL PLAN**

PROJECT No	65767
FILE NAME:	EC-1
SHEET No	EC-1
OF	



**GENERAL NOTES:**

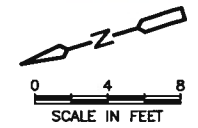
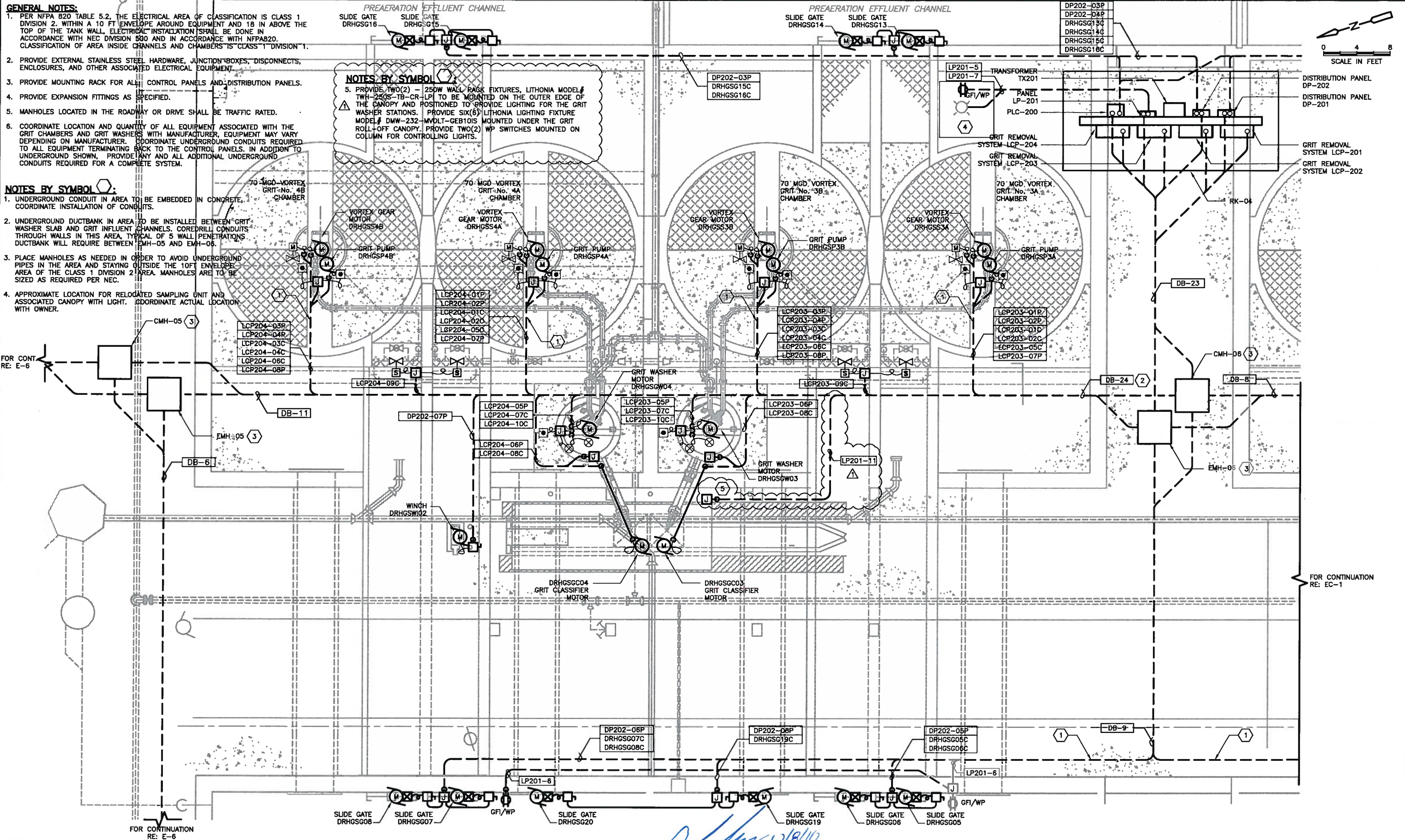
- PER NFPA 820 TABLE 5.2, THE ELECTRICAL AREA OF CLASSIFICATION IS CLASS 1 DIVISION 2, WITHIN A 10 FT ENVELOPE AROUND EQUIPMENT AND 18 IN ABOVE THE TOP OF THE TANK WALL. ELECTRICAL INSTALLATION SHALL BE DONE IN ACCORDANCE WITH NEC DIVISION 500 AND IN ACCORDANCE WITH NFPA820. CLASSIFICATION OF AREA INSIDE CHANNELS AND CHAMBERS IS "CLASS 1" DIVISION "1".
- PROVIDE EXTERNAL STAINLESS STEEL HARDWARE, JUNCTION BOXES, DISCONNECTS, ENCLOSURES, AND OTHER ASSOCIATED ELECTRICAL EQUIPMENT.
- PROVIDE MOUNTING RACK FOR ALL CONTROL PANELS AND DISTRIBUTION PANELS.
- PROVIDE EXPANSION FITTINGS AS SPECIFIED.
- MANHOLES LOCATED IN THE ROADWAY OR DRIVE SHALL BE TRAFFIC RATED.
- COORDINATE LOCATION AND QUANTITY OF ALL EQUIPMENT ASSOCIATED WITH THE GRIT CHAMBERS AND GRIT WASHERS WITH MANUFACTURER. EQUIPMENT MAY VARY DEPENDING ON MANUFACTURER. COORDINATE UNDERGROUND CONDUITS REQUIRED TO ALL EQUIPMENT TERMINATING BACK TO THE CONTROL PANELS. IN ADDITION TO UNDERGROUND SHOWN, PROVIDE ANY AND ALL ADDITIONAL UNDERGROUND CONDUITS REQUIRED FOR A COMPLETE SYSTEM.

**NOTES BY SYMBOL:**

- UNDERGROUND CONDUIT IN AREA TO BE EMBEDDED IN CONCRETE. COORDINATE INSTALLATION OF CONDUITS.
- UNDERGROUND DUCTBANK IN AREA TO BE INSTALLED BETWEEN GRIT WASHER SLAB AND GRIT INFLUENT CHANNELS. COREDRILL CONDUITS THROUGH WALLS IN THIS AREA, TYPICAL OF 5 WALL PENETRATIONS. DUCTBANK WILL REQUIRE BETWEEN EMH-05 AND EMH-06.
- PLACE MANHOLES AS NEEDED IN ORDER TO AVOID UNDERGROUND PIPES IN THE AREA AND STAYING OUTSIDE THE 10FT ENVELOPE AREA OF THE CLASS 1 DIVISION 2 AREA. MANHOLES ARE TO BE SIZED AS REQUIRED PER NEC.
- APPROXIMATE LOCATION FOR RELOCATED SAMPLING UNIT AND ASSOCIATED CANOPY WITH LIGHT. COORDINATE ACTUAL LOCATION WITH OWNER.

**NOTES BY SYMBOL:**

- PROVIDE TWO(2) - 250W WALL PACK FIXTURES, LITHONIA MODEL # TWH-250S-TB-CR-LPI TO BE MOUNTED ON THE OUTER EDGE OF THE CANOPY AND POSITIONED TO PROVIDE LIGHTING FOR THE GRIT WASHER STATIONS. PROVIDE SIX(6) LITHONIA LIGHTING FIXTURE MODEL # DMW-232-MVDT-GEB10IS MOUNTED UNDER THE GRIT ROLL-OFF CANOPY. PROVIDE TWO(2) WP SWITCHES MOUNTED ON COLUMN FOR CONTROLLING LIGHTS.



ISSUE No	DATE	CHKD	REMARKS
1	12/8/10	AL	REVISED BY ADDENDUM NO. 3

DESIGNED BY: LEVESQUE  
 DRAWN BY: BARNES  
 SHEET CHECKED BY: CAMPBELL  
 CROSS CHECKED BY: U  
 APPROVED BY: [Signature]  
 DATE: NOVEMBER 2010

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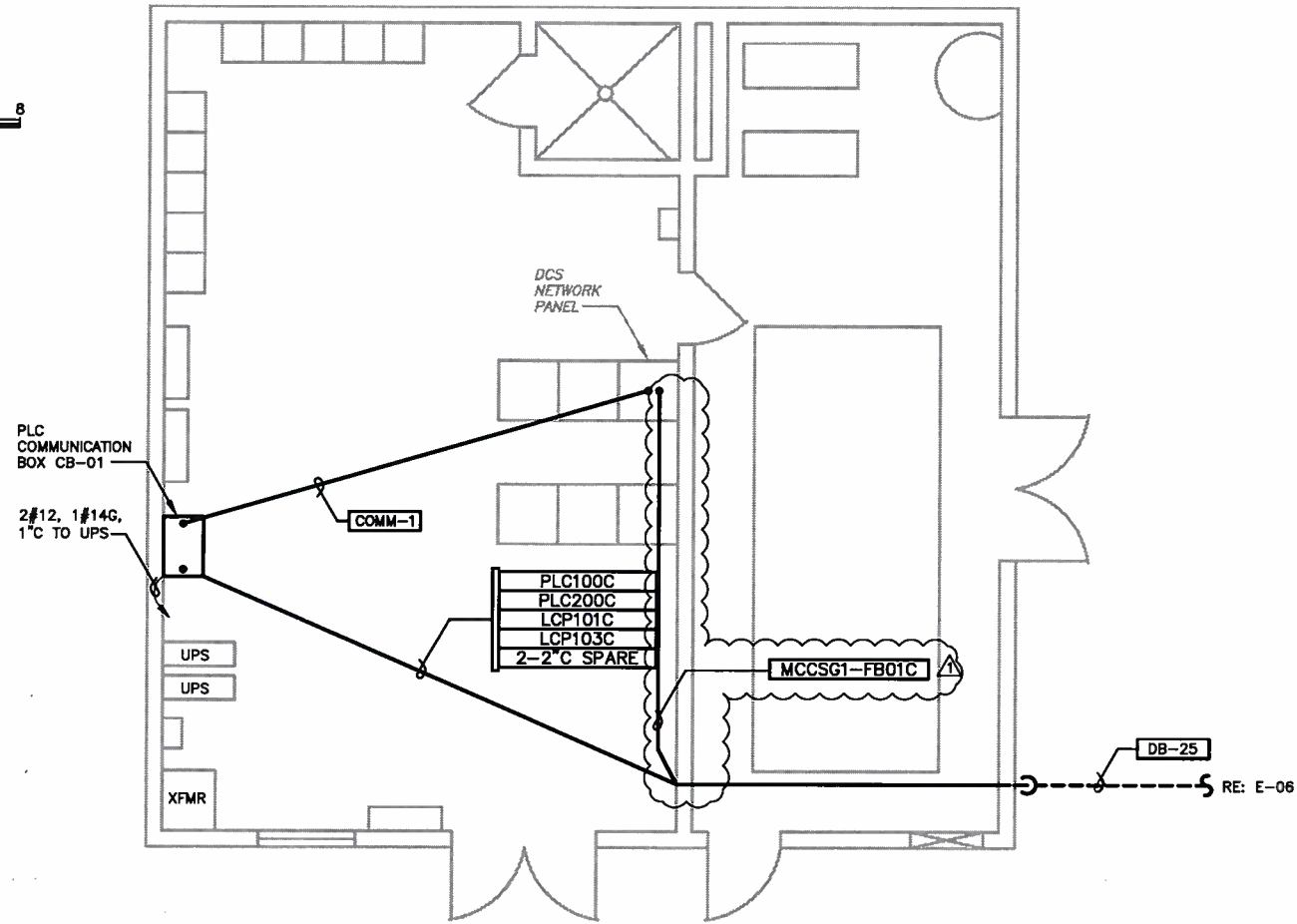
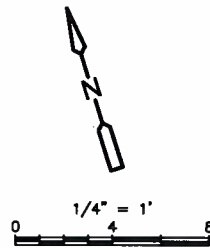
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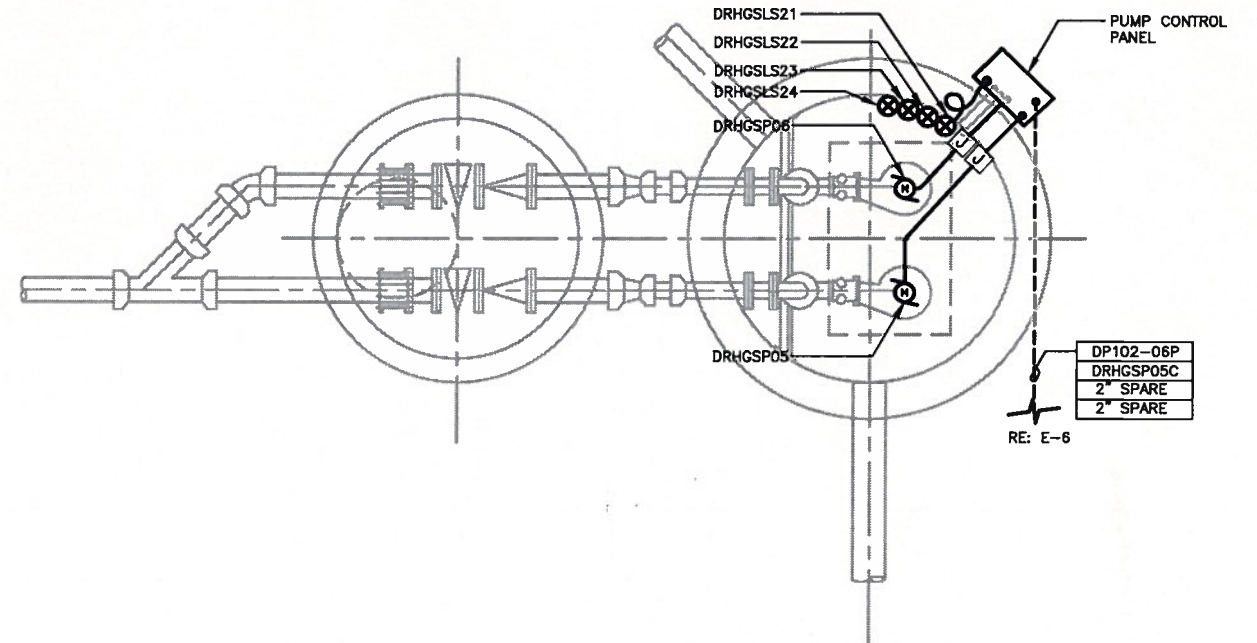
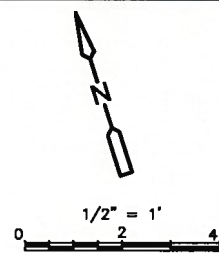
**WUS**  
 SAN ANTONIO WATER SYSTEM  
 DOS RIOS WRC RE-RATING  
 HEADWORKS IMPROVEMENTS AND  
 PROCESS ENHANCEMENTS PHASE I

**GRIT REMOVAL FACILITY  
 CHAMBERS NO. 3 AND NO.4  
 POWER AND CONTROL PLAN**

PROJECT No	65767
FILE NAME:	EC-2
SHEET No	EC-2
OF	



**ODOR CONTROL BUILDING POWER & CONTROL PLAN**  
SCALE: 1/4"=1'



**TANK DRAINAGE PUMPSTATION POWER AND CONTROL PLAN**  
SCALE: 1/2"=1'

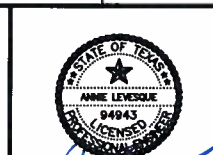
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ISSUE No	DATE	CHKD	REMARKS
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DRAWN BY: BARNES  
SHEET CHK'D BY: CAMPBELL  
CROSS CHK'D BY: U  
APPROVED BY: \_\_\_\_\_  
DATE: NOVEMBER 2010

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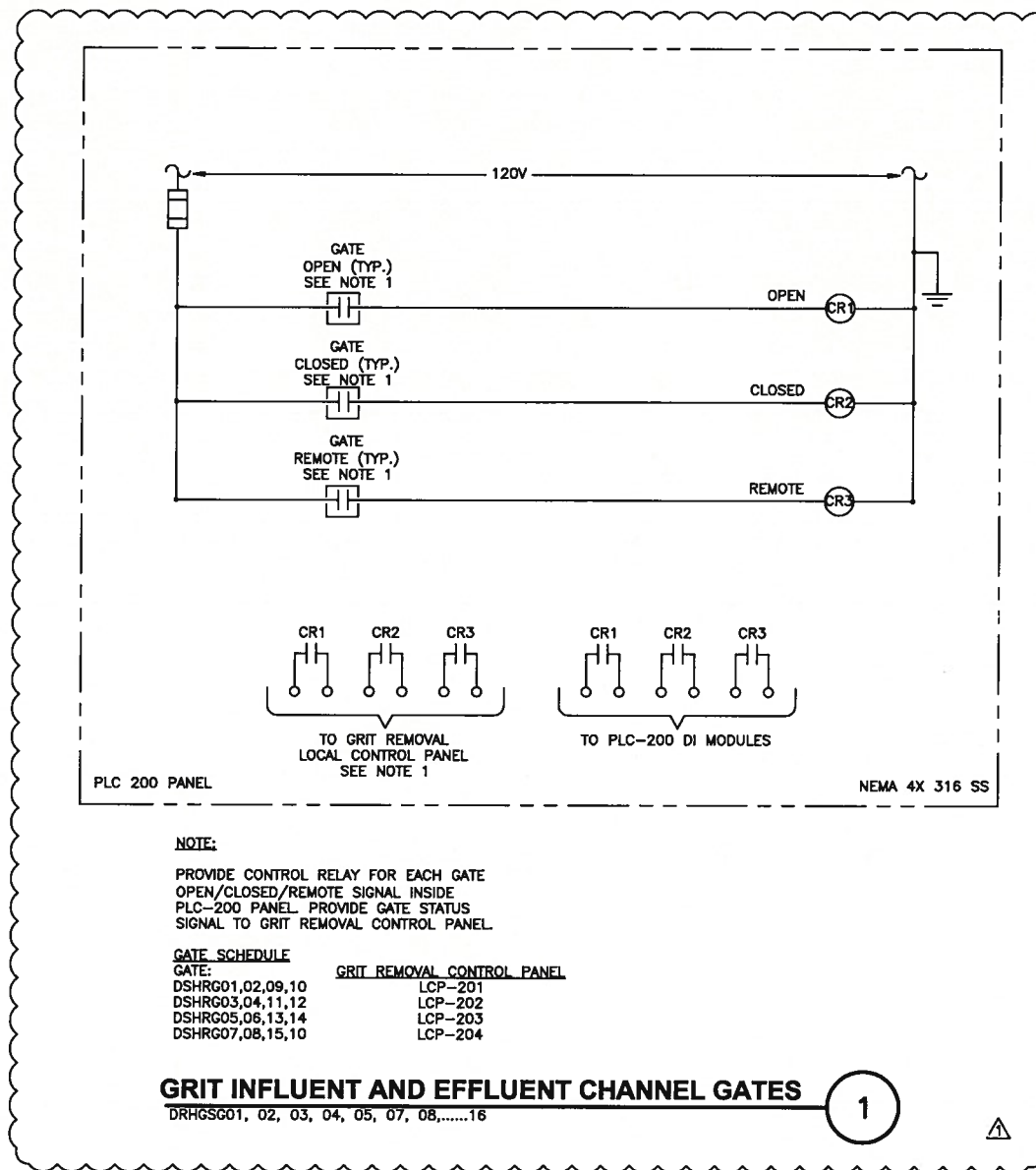


SAN ANTONIO WATER SYSTEM  
**DOS RIOS WRC RE-RATING  
HEADWORKS IMPROVEMENTS AND  
PROCESS ENHANCEMENTS PHASE I**

**ODOR CONTROL BUILDING AND TANK  
DRAINAGE P5  
POWER AND CONTROL  
PLAN**

PROJECT No 65767  
FILE NAME: EF-1  
SHEET No EF-1  
OF

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**NOTE:**

PROVIDE CONTROL RELAY FOR EACH GATE  
 OPEN/CLOSED/REMOTE SIGNAL INSIDE  
 PLC-200 PANEL. PROVIDE GATE STATUS  
 SIGNAL TO GRIT REMOVAL CONTROL PANEL.

**GATE SCHEDULE**

GATE:	GRIT REMOVAL CONTROL PANEL
DSHRG01,02,09,10	LCP-201
DSHRG03,04,11,12	LCP-202
DSHRG05,06,13,14	LCP-203
DSHRG07,08,15,10	LCP-204

**GRIT INFLUENT AND EFFLUENT CHANNEL GATES**

DRHGS01, 02, 03, 04, 05, 07, 08,.....16

ISSUE No	DATE	CHKD	REMARKS
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SAN ANTONIO WATER SYSTEM  
**DOS RIOS WRC RE-RATING  
 HEADWORKS IMPROVEMENTS AND  
 PROCESS ENHANCEMENTS PHASE I**

**CONTROL SCHEMATIC DIAGRAM**

PROJECT No 65767  
 FILE NAME: EY-1  
 SHEET No  
**EY-1**  
 OF

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LIGHTING PANEL LP-201 (NEMA 4X SS ENCLOSURE)										
LOCATION GRIT REMOVAL FACILITY AREA MOUNTING RACK MOUNTED RK-04					120/208 VOLTS 3 PH 4 WIRE 100 AMP MAIN 60A SHORTCKT 10000 RMS SYM AMPS					
CKT	LOAD SERVED	BRKR	VOLT AMPS			A B C	VOLT AMPS			CKT
			A	B	C		A	B	C	
1	CANOPY LIGHTS	20/1	408			•			720	2
3	PLC 200	20/1		500		•			360	4
5	SAMPLING UNIT RECEPTACLE	20/1			360	•			20/1	6
7	SAMPLING UNIT CANOPY LIGHT	20/1	167			•			20/1	8
9	SOUTH GRIT ROLL OFF LIGHTS	20/1		942		•			20/1	10
11	NORTH GRIT ROLL OFF LIGHTS	20/1			942	•			20/1	12
13	SPARE	20/1				•			20/1	14
15	SPARE	20/1				•			20/1	16
17	SPARE	20/1				•			20/1	18
TOTAL			575	1442	1302				720 360 360	TOTAL

CONNECTED BUS A 1295  
CONNECTED BUS B 1802  
CONNECTED BUS C 1662  
CONNECTED TOTAL VA 4759

LIGHTING PANEL LP-302 (NEMA 4X SS ENCLOSURE)											
LOCATION INFLUENT SAMPLING FACILITY MOUNTING OUTDOOR WALL MOUNTED					120/208 VOLTS 3 PH 4 WIRE 100 AMP MAIN 40A SHORTCKT 10000 RMS SYM AMPS						
CKT	LOAD SERVED	BRKR	VOLT AMPS			A B C	VOLT AMPS			CKT	
			A	B	C		A	B	C		
1	INF. SAMP BLDG SF DRIINSF01	20/1	624			•			540	2	
3	INFLUENT SAMPLING AIR COMP	20/1		1176		•			136	4	
5	SAMP. FACIL EX FAN DRIINEF01	20/1			624	•			500	6	
7	INFLUENT SAMPLER	20/1	500			•			20/1	8	
9	SPARE	20/1				•			20/1	10	
11	SPARE	20/1				•			20/1	12	
13	SPARE	20/1				•			20/1	14	
15	SPARE	20/1				•			20/1	16	
17	SPARE	20/1				•			20/1	18	
TOTAL				1124	1176	624				540 136 500	TOTAL

CONNECTED BUS A 1664  
CONNECTED BUS B 1312  
CONNECTED BUS C 1124  
CONNECTED TOTAL VA 4100

LIGHTING PANEL LP-301 (NEMA 4X SS ENCLOSURE)										
LOCATION INFLUENT FLOW METERING FACILITY MOUNTING RACK MOUNTED					120/208 VOLTS 3 PH 4 WIRE 125 AMP MAIN 100A SHORTCKT 10000 RMS SYM AMPS					
CKT	LOAD SERVED	BRKR	VOLT AMPS			A B C	VOLT AMPS			CKT
			A	B	C		A	B	C	
1	METER BOX #1 LIGHTS	20/1	312			•			900	2
3	BOX #1 FLOW METER DRIINF01	20/1		320		•			312	4
5	METER BOX #1 RECEPTACLES	20/1			900	•			320	6
7	CANOPY RECEPTACLES	20/1	180			•			624	8
9	METER BOX #1 EX FN DRIINEF02	20/1		624		•			650	10
11	CANOPY LIGHTS	20/1			136	•			20/1	12
13	SPARE	20/1				•			20/1	14
15	SPARE	20/1				•			20/1	16
17	SPARE	20/1				•			20/1	18
19	SPARE	20/1				•			20/1	20
21	SPARE	20/1				•			20/1	22
23	SPARE	20/1				•			20/1	24
25	SPARE	20/1				•			1664	26
27	SPARE	20/1				•			1312	28
29	SPARE	20/1				•			1124	30
TOTAL			492	944	1036				3188 2274 1444	TOTAL

CONNECTED BUS A 3680  
CONNECTED BUS B 3218  
CONNECTED BUS C 2480  
CONNECTED TOTAL VA 9378

NOTE:  
1. ALL BRANCH CIRCUITS WIRING SHALL BE 2#12, 1#12G, IN A 3/4" CONDUIT UNLESS OTHERWISE NOTED ON THE DRAWINGS OR ARE IN DUCTBANKS. MINIMAL CONDUIT SIZE IN DUCTBANKS IS A 1 1/2".

NOTES BY SYMBOL:  
1. FOR BRANCH CIRCUIT PROVIDE 4#4, 1#8G, IN A 2" CONDUIT

ISSUE No	12/8/10	AL	REVISED BY ADDENDUM NO. 3	DESIGNED BY: LEVESQUE	<b>CDM</b> 1777 NE Loop 410, Suite 500 San Antonio, Texas 78217 Tel: (210) 826-3200 Fax: (210) 826-8876 CROSS CHK'D BY: CAMPBELL APPROVED BY: DATE: NOVEMBER 2010 consulting • engineering • construction • operations	<b>CP&amp;Y</b> Texas Registration No. F-1741 San Antonio Office 300 E. Sonterra, Suite 1250 San Antonio, TX 78258 Texas Registration Number F-3043 Ph: 210-494-8004 / Fax 210-494-8286			SAN ANTONIO WATER SYSTEM	PROJECT No 65767 FILE NAME: EY-2 SHEET No EY-2 OF			

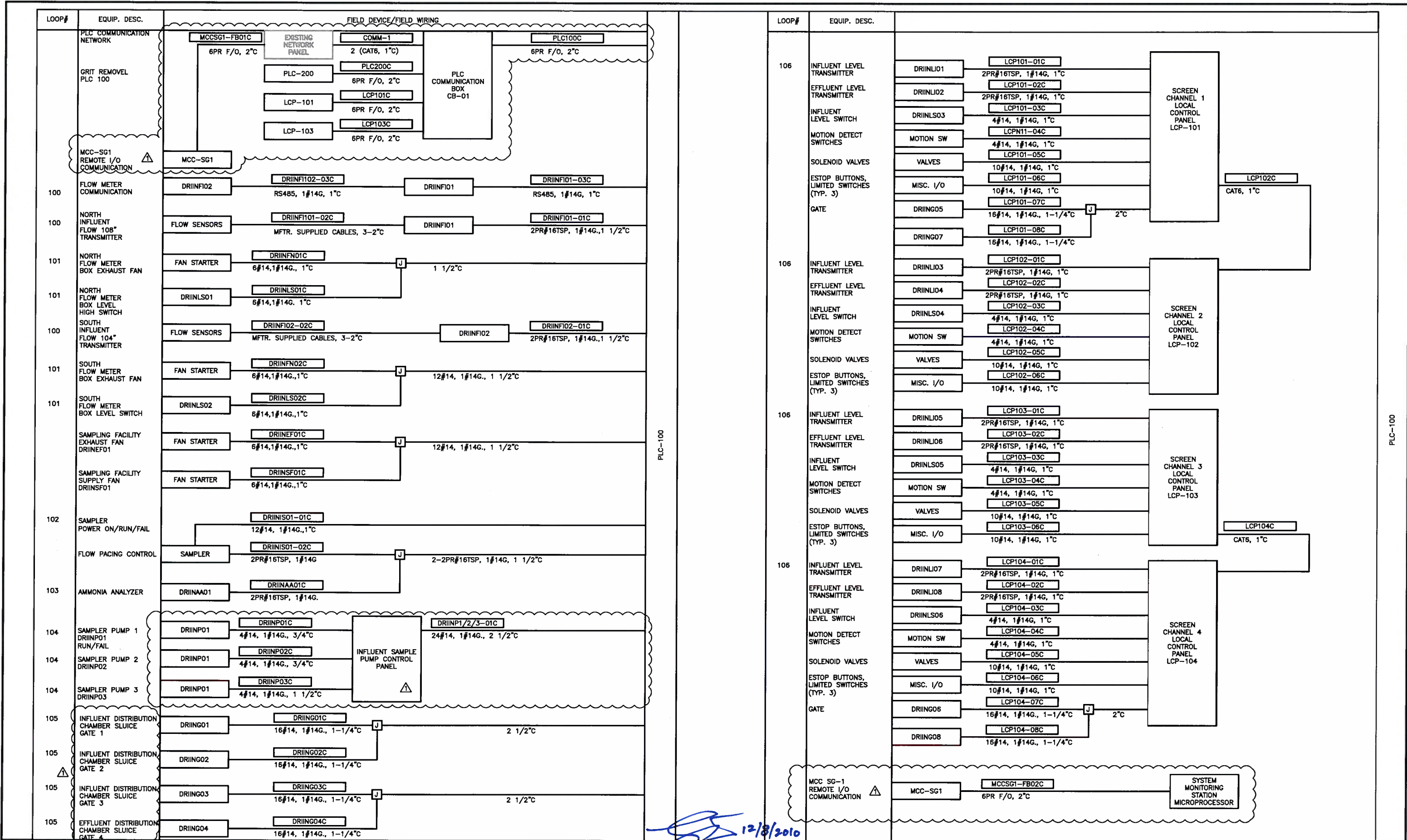
12/8/10

DOS RIOS WRC RE-RATING  
HEADWORKS IMPROVEMENTS AND  
PROCESS ENHANCEMENTS PHASE I

**ELECTRICAL SCHEDULES I**







PLC-100

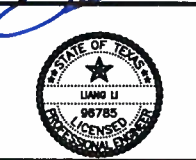
PLC-100

12/8/2010

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**SAN ANTONIO WATER SYSTEM**  
**DOS RIOS WRC RE-RATING**  
**HEADWORKS IMPROVEMENTS AND**  
**PROCESS ENHANCEMENTS PHASE I**

**PLC-100**  
**INTERCONNECTION DIAGRAM**

PROJECT No 65767  
 FILE NAME: EY-6  
 SHEET No **EY-6**  
 OF