



ADDENDUM NO. 02

To: Bidders & Plan Holders

From: Craig A. Johnson, P.E.
Crist Engineers, Inc.

Date: May 28, 2024

Project: Conway Corporation
Roger Q Mills Jr.
Water Treatment Plant 8 MGD Expansion & Improvements

Bid Date: June 11, 2024

Bid Time: 10:00 AM

Location: Conway Corporation's Engineering Office
800 S. Harkrider Street
Conway, Arkansas 72032

The BIDDER shall properly acknowledge Addendum No. 01 as required in Article 3 of Document 004100 on the Bid Form as confirmation that the BIDDER has examined the following Addenda and the related changes to the Contract Documents. Lack of proper acknowledgement on the Bid Form may deem a bid non-responsive.

The Contract Documents dated May 3, 2024, are hereby amended as follows:

STATE OF
ARKANSAS
REGISTERED
PROFESSIONAL
ENGINEER

No. [REDACTED] Digitally signed
by Craig A. Johnson
Date:
2024.05.28
20:40:31-05'00'





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IMPORTANT REMINDERS:

Please reference Section 002113 - Instructions to Bidders, provided in the contract documents for information required for the bid submission.

INFORMATION TO PROSPECTIVE BIDDERS:

1. AutoCAD files; such as Revit, BIM model, etc., will not be distributed during the bid process. Once a successful prospective bidder is under contract, a release must be executed by the Contractor prior to transmission of any electronic data.
2. There are not any available as-builts on the existing reinforced concrete basin where Structure 15 – PAC Contactor and Structure 21 – Sedimentation Building (New Plant Addition 8 MGD Train) will be constructed.
3. There is no accommodation needed from the Contractor regarding facilities for Owner's representative for field offices.
4. Payment to contractors will be in accordance with SRF requirements, as amended. Based upon experience of the Owner with ANRD program, in most cases payment is processed within 30 days; however, the Owner has not control over ANRD regarding the process of payment once the Owner approves.
5. Equipment will be stored in accordance with the manufacturer requirements.

BID DOCUMENTS:

1. Section 00 52 00 – Agreement:
 - a. Article 3: Revise as follows:
“3. and will be **Substantially Complete within ~~730~~ 910 calendar days and achieve Final Completion within ~~760~~ 940 calendar days, of which not more than the initial 180 days is comprised of the Construction Administrative Period with the balance comprised of the Construction Execution Period.**”
2. Section 00 72 00 – General Conditions:
 - a. Modify Paragraph F. Contractor's pollution liability insurance as follows :
 - i. “.....in an amount no less than ~~\$5,000,000~~ **\$2,000,000.**”
3. Section 00 73 00 – Supplemental Conditions:
 - a. Delete the first sentence in Article SC-6.03 G and add the following:
 - i. **“Owner's and Engineers shall be included as an insured under the CGL, using ISO Endorsement CG 20 10 10 01 and CG 20 37 10 01 (together) or ISO Endorsement CG 20 10 07 04 and CG 20 37 07 04 (together) and under the**



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commercial liability using ISO Additional Insured Endorsement CA 2048 or a substitute providing equivalent coverage, and commercial umbrella, if any."

- b. Delete the second sentence of to Article 15 – Payments to Contractor and Completion SC 15.01.B.4 and add the following:
 - i. **"Partial payment will be made in accordance with paragraph SC 15.01.B.4A (Addendum No. 02) for undelivered materials or equipment. Payments for equipment assigned to the contractor shall be so designated in the procurement contract between the Owner and the Contractor."**
- c. Add the following paragraph to Article 15 – Payments to Contractor and Completion SC 15.01.B:
 - i. **"4A The Contractor can submit for approval up to an amount of ten (10) percent for materials and equipment based upon the demonstrated actual cost of the materials and equipment upon the return of the approved submittal as required of Section 013300 by the Owner and the Engineer. No Further partial payment will be made until receipt of the equipment is received and properly stored."**
 - ii. **4B Any material and equipment the Contractor seeks partial payment shall be accompanied by a duly signed affidavit that the equipment will be delivered, received and properly stored within 12 months of the request.**

DIVISION 01 – GENERAL REQUIREMENTS:

- 1. Section 015000 – Temporary Facilities, Utilities, Services, and Controls
 - a. Paragraph 1.4.B. Water Services: Delete in its entirety and add the following:
"B. Water Services: The Owner will provide a service tap at a point of location nearest the Contractor's facilities. The Contractor is responsible for installing service from the point of connect to the temporary facilities."
 - b. Paragraph 1.4.C. Electric Power Services: Delete in its entirety and add the following:
"C. Electric Power Services: The Owner will provide a temporary pole point of location nearest the Contractor's facilities. The Contractor is responsible for installing service from the point of connect to the temporary facilities."
 - c. Paragraph 1.6 TEMPORARY WATER: Delete Paragraph A, Paragraph B, and Paragraph C and replace as follows:
 - i. "A. The Owner will provide temporary for testing project components as required of the Contract Documents.
 - B. Water needed for testing water tightness of structures shall be provided by the Owner. Should testing demonstrate failure and



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subsequent testing thereof shall be the responsibility of the Owner at the current billing rates for current commercial rates.”

SPECIFICATIONS:

1. Specification 406113 – Process Control System General Provisions
 - a. Delete in its entirety and replace with Section 406113 Process Control System General Provisions – Addendum No. 01 attached hereto.
2. Add the following specification Section 333913 – Sanitary Sewer Manholes, Frames, and Covers – Addendum No. 02 attached hereto.
3. Add the following Specification 321216 – Asphalt Paving – Addendum No. 02, attached hereto.
4. Specification 406633 – Fiber Optic Communication Systems
 - A. Delete paragraph 1.1.A.1. and insert the following in lieu thereof:
50/125 multi-mode, outdoor optical fiber cable (OM2).
 - B. Delete Heading 2.2. and insert the following in lieu thereof:
50/125 MICROMETER MULTI-MODE, OUTDOOR OPTICAL FIBER CABLE (OM2)
 - C. Delete paragraph 2.2.A. and insert the following in lieu thereof:
Description: Multi mode, **50/125**-micrometer, 12 fibers, tight buffer, optical fiber cable, listed for the application.
 - D. Delete paragraph 2.2.D. and insert the following in lieu thereof:
Maximum Attenuation: 3.5 dB/km at 850 nm; **1.25** dB/km at 1300 nm.
 - E. Delete paragraph 2.2.E and insert the following in lieu thereof:
Minimum Overfilled Launch (OFL) Bandwidth: 700 MHz-km at 850 nm; 500 MHz-km at 1300 nm.

DRAWINGS:

1. Drawing 01-G006 – (Sheet No. 006):
 - a. Add the following note under GENERAL NOTES - 3. PERMITS:
“c. The OWNER will pay for all City Permits required for the project. The Contractor shall coordinate with the OWNER for all permit applications.”
 - b. Add the following note under GENERAL CONSTRUCTION NOTES – SITE PIPING:



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"12. All exposed chemical piping shall be heat traced."

2. Drawing 05-C104 – (Sheet 024):
 - a. Delete the second sentence in Note 16.
3. Drawing No. 05-C105 (Sheet 025)
 - a. Delete the drawing in its entirety and replace it with Basin Underdrain Plan – Addendum No. 02, attached hereto.
4. Drawing No. 00-CZ103 (Sheet 029):
 - a. Add Detail B Asphalt Surface Repair and Detail F Pavement Section – Aggregate surface to Civil Details IV – Addendum No. 02, attached hereto.
5. Drawing No. 00-CZ105A (New Drawing)
 - a. Add the following drawing Civil Details VII – Addendum No. 02, attached hereto.
6. Drawing No. 00-CZ105 (Sheet 031):
 - a. Modify Detail C and Detail E as shown on Civil Details VI – Addendum No. 02, attached hereto.
7. Drawing No. 10-C200 (Sheet 054)
 - a. Modify the Blending Structure Yard Piping shown on the Raw Water Blending Structure Grading Plan and Section – Addendum No. 02, attached hereto.
8. Drawing No. 10-C300 (Sheet 057)
 - a. Modify the Profile shown on the Raw Water Blending Structure Plan and Profile 1 – Addendum No. 02, attached hereto.
9. Drawing No. 08-I722 (Sheet No. 050)
 - a. Delete the entire drawing and replace it with Drawing No. 08-I722 - LIME SILO AND MIXING TANK 2 P&ID - Addendum No. 02, attached hereto.
10. Drawing No. 08-I725 (Sheet No. 053)
 - a. Delete the entire drawing and replace it with Drawing No. 08-I725 – PAC FEED AND STORAGE P&ID 2- Addendum No. 02, attached hereto.
11. Drawing No. 10-S301 (Sheet No. 068)



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- a. Delete the entire drawing and replace it with Drawing No. 10-S301 - RAW WATER BLENDING STRUCTURE SECTIONS - Addendum No. 02, attached hereto.
12. Drawing No. 10-P301 (Sheet No. 078)
 - a. Modify Section – Typical shown on the Process Mechanical Sections 1 – Addendum No. 02, attached hereto.
13. Drawing No. 10-P303 (Sheet No. 080)
 - a. Modify Section B – Vault (Typ.) shown on the Raw Water Meter Vault Section – Addendum No. 02, attached hereto.
14. Drawing No. 10-E102 (Sheet No. 088)
 - a. Delete the entire drawing and replace it with Drawing No. 10-S301 - RAW WATER BLENDING STRUCTURE -NORTH METER VAULT POWER PLAN- Addendum No. 02, attached hereto.
15. Drawing No. 10-E601 (Sheet No. 089)
 - a. Delete the entire drawing and replace it with Drawing No. 10-S301 - RAW WATER BLENDING STRUCTURE ELECTRICAL SCHEDULES- Addendum No. 02, attached hereto.
16. Drawing No. 21-C300 (Sheet 112)
 - a. Modify the Flocc Influent and Drain shown on the New Plan Flocculation Piping Plan and Profile – Addendum No. 02, attached hereto.
17. Drawing No. 21-P304 (Sheet No. 134)
 - a. Modify the Section – Sludge Collection Basin A and Section – Sludge Collection Basin B shown on New Plant Sedimentation Basin No. 04 – Enlarged Plan and Section 2 Sludge Collection Basin – Addendum No. 02, attached hereto.
18. Drawing No. 21-E101 (Sheet No. 139)
 - a. Delete the entire drawing and replace it with Drawing No. 21-E101 - NEW PLANT RAPID MIX/FLOCCULATION/SEDIMENTATION ELECTRICAL POWER PLAN 1- Addendum No. 02, attached hereto.
19. Drawing No. 21-E601 (Sheet No. 140)
 - a. Delete the entire drawing and replace it with Drawing No. 21-E601 - NEW PLANT RAPID MIX/FLOCC./SEDIMENTATION ELEC. CONDUIT SCHEDULE- Addendum No. 02, attached hereto.



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20. Drawing No. 31-C201 (Sheet No. 151)

- a. Modify the Drain Sump Pump Section shown on Filter Building 2 Drive Drain Plan and Profile – Addendum No. 02, attached hereto.

21. Drawing No. 31-S304 (Sheet No. 163)

- a. Delete the entire drawing and replace it with Drawing No. 31-S304 - NEW PLANT FILTER BUILDING #2 SECTIONS 4 - Addendum No. 02, attached hereto.

22. Drawing No. 31-E301 (Sheet No. 186)

- a. Delete the entire drawing and replace it with Drawing No. 31-E301 - NEW PLANT FILTER BUILDING #2 ELECTRICAL POWER PLAN SECTION 1, - Addendum No. 02, attached hereto.

23. Drawing No. 31-E302 (Sheet No. 187)

- a. Delete the entire drawing and replace it with Drawing No. 31-E302 - NEW PLANT FILTER BUILDING #2 ELECTRICAL POWER PLAN SECTION 2 - Addendum No. 02, attached hereto.

24. Drawing No. 31-E601 (Sheet No. 191)

- a. Delete the entire drawing and replace it with Drawing No. 31-E601 - NEW PLANT FILTER BUILDING #2 ELECTRICAL CONDUIT SCHEDULE - Addendum No. 02, attached hereto.

25. Drawing No. 60-P302 (Sheet No. 212)

- a. Revise the SCHEDULE as shown below:



VALVE SCHEDULE							
SPECS	SPEC	VALVE TYPE	OPERATION	OPERATOR	BODY SIZE (IN)	MAX FLOW (GPM)	MAX PRESSURE
331419	DR	BUTTERFLY VALVE	OPEN/CLOSE	MANUAL	6	N/A	N/A

26. Drawing No. 60-P303 (Sheet No. 213)

- a. Revise the SCHEDULE as shown below:



VALVE SCHEDULE							
SPECS	FLOW STREAM ID	VALVE TYPE	OPERATION	OPERATOR	BODY SIZE (IN)	MAX FLOW (GPM)	MAX PRESSURE
331216	DR	DUCKBILL CHECK VALVE	N/A	N/A	4	N/A	N/A



27. Drawing No. 60-E601 (Sheet No. 226)

- a. Delete the entire drawing and replace it with Drawing No. 60-E601 - HIGH SERVICE PUMP STATION CONDUIT SCHEDULE - Addendum No. 02, attached hereto.

28. Drawing No. 70-E601 (Sheet No. 243)



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- a. Delete the entire drawing and replace it with Drawing No. 70-E601 - CHEMICAL BUILDING ELECTRICAL CONDUIT SCHEDULE- Addendum No. 02, attached hereto.

29. Drawing No. 90-E601 (Sheet No. 317)

- a. Delete the entire drawing and replace it with Drawing No. 90-E601 - ELECTRICAL PANEL SCHEDULES - Addendum No. 02, attached hereto.

30. Drawing No. 90-E602 (Sheet No. 318)

- a. Delete the entire drawing and replace it with Drawing No. 90-E602 – ELECTRICAL DUCT BANK SECTIONS - Addendum No. 02, attached hereto.

STANDARD DETAILS

1. INDEX OF STANDARD DETAILS 1

- A. Delete the entire page and replace it with INDEX OF STANDARD DETAILS 1, attached hereto.

2. INDEX OF STANDARD DETAILS 2

- A. Delete the entire page and replace it with INDEX OF STANDARD DETAILS 2, attached hereto.

3. DIVISION D03

- A. Insert Standard Detail SECTION – DETAIL NO. 3000-1000 EQUIPMENT BASE, attached hereto.

4. DIVISION D05

- A. Insert Standard Detail SECTION – DETAIL NO. 5110-101 TYPICAL STAIR SUPPORT TOWERS, attached hereto.

5. DIVISION D22

- A. Insert Standard Detail SECTION – DETAIL NO. 0529-008 PIPE HANGER, attached hereto.

6. DIVISION D22

- A. Insert Standard Detail SECTION – DETAIL NO. 0529-013 NON-ADJUSTABLE FLOOR MOUNTED PIPE SUPPORT, attached hereto.

7. DIVISION D22



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- A. Insert Standard Detail SECTION – DETAIL NO. 0529-017 STAINLESS STEEL STRUT CHANNEL PIPE SUPPORT, attached hereto.

- 8. DIVISION D40
 - A. Insert Standard Detail SECTION – DETAIL NO. 2343-001 BURIED VALVE BOX AND OPERATORS, attached hereto.

END ADDENDUM NO. 02

SECTION 321216

ASPHALT PAVING

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Surface course, consisting of compacted mixture of coarse and fine aggregates and asphaltic material, placed on stabilized base in conformity with lines, grades, compacted thickness and typical cross sections shown.

1.2 REFERENCES

- A. ARDOT Standards - Standard Specifications for Highway Construction, latest edition as published by the Arkansas State Highway and Transportation Department.
- B. AASHTO--American Association of State Highway and Transportation Officials.

1.3 SUBMITTALS

- A. Procedures for Submittals: Section 013300.
- B. Contractor shall certify the mixing plant will conform to the requirements of ARDOT.
- C. Certified weight tickets shall be submitted with each delivery of Asphaltic Concrete to the Work Site.
- D. Contractor shall submit Design Mixtures, including additive modifiers, for review and approval at least 30 days before any asphaltic pavement is placed. The design mixes shall be prepared by a certified independent testing laboratory employed and paid by the Contractor.

1.4 DELIVERY, STORAGE AND HANDLING

- A. Asphaltic Concrete Material shall be hauled in tight trucks previously cleaned of all dirt and foreign material with the load completely covered by canvas.
- B. All material shall be delivered so that material can be placed and rolled during daylight hours.

1.5 ENVIRONMENTAL REQUIREMENTS

- A. Asphaltic Concrete shall not be placed when the ambient temperature is below 60E F and is falling.
- B. Asphaltic Concrete may be mixed and placed when the ambient temperature is above 50E F and rising.

PART 2 - PRODUCTS

2.1 PRIME COAT

- A. Asphaltic Materials: AASHTO M82, ACut-Back Asphalt Concrete."
- B. Provide grade MC-30.

2.2. HOT MIX ASPHALTIC CONCRETE SURFACE COURSE

- A. The asphaltic concrete surface course shall be plant mixed, hot laid meeting requirements in ARDOT Division 400.
- B. The mix shall be designed for stability of at least 35 and shall be compacted to between 95 and 99 percent of the maximum theoretical density.
- C. The asphalt cement content by percent of total mixture weight shall fall within a tolerance of ± 0.3 percent asphalt cement from the specific mix. In addition, the mix shall be designed so that 75 to 85 percent of the voids in the mineral aggregate (VMA) are filled with asphalt cement.

PART 3 - EXECUTION

3.1 PRIME COAT

- A. Apply with a sprayer. Prime coat shall be applied at a rate of 0.25 to 0.35 gallons per square yard over compacted flexible base and shall be cured for 24 hours minimum.

3.2 LAYING

- A. Placement: Haul the asphaltic concrete mixture, which has been heated and prepared as specified, to the project in tight vehicles previously cleaned of foreign material. The mixture shall be at a temperature between 200E F and 350E F when laid. The Engineer will determine the lowest acceptable temperature; a variance of 30E F upward will be allowed. Spread the material into place with approved mechanical finishing machine of screening or tamping type. Use a tire or track-mounted finish machine capable of maintaining uniform grade WITHIN SPECIFIED TOLERANCES while placing directly on the flexible base subgrade.
- B. Surface Course Material: A surface course two (2) inches or less in thickness may be spread in one lift. Spread all lifts in such a manner that when compacted, the finished course will be smooth, of uniform density, and to section, line and grade shown.

3.3 LAYERING IN RESTRICTED AREAS

- A. If use of a paver is impractical, asphalt surface courses may be spread and finished by hand. Use wood or steel forms, rigidly supported to assure correct grade and cross section. Carefully place materials to avoid segregation of the mix. Broadcasting the material will not be permitted. Any lumps that do not break down readily shall be removed. Place asphalt courses in the same sequence as if placed by machine.

3.4 ROLLING

- A. Begin rolling while pavement is still hot and as soon as it will bear the roller without undue displacement or hair cracking. To prevent adhesion of surface mixture to the roller, keep wheels properly moistened with water. Excessive use of water will not be permitted.
- B. Compress the surface thoroughly and uniformly, first with power-driven, 3-wheel, or tandem rollers weighing 10 tons. Obtain subsequent compression by starting at the side and rolling longitudinally toward the center of the pavement, overlapping on successive trips by at least one-half width of rear wheels. Make alternate trips slightly different in length. Continue rolling until further compression cannot be obtained and all rolling marks are eliminated.
- C. Use a tandem roller for the final rolling. Double coverage with an approved pneumatic

roller on asphaltic concrete surface is acceptable after flat wheel and tandem rolling has been completed.

3.5 HAND TAMPING

- A. Along walls, curbs, headers and similar structures, and in all locations not accessible to rollers, compact the mixture thoroughly with a vibrating plate compactor.

3.6 DENSITY

- A. Compact in accordance with ArDOT Division 400. If, during the construction, the results of density tests show that the surface has a density less than specified, an additional rolling with a 3-wheel or pneumatic roller will be required. Such a rolling shall be done before the mix cools if it is to be successful.

3.7 SURFACE TESTS

- A. The completed surface, when tested with a 16-foot straightedge laid parallel to the center line of the pavement, shall show no deviation in excess of 1/16 inch per foot from the nearest point of contact. The maximum ordinate measured from the face of the straightedge shall not exceed 1/4 inch at any point. Furnish approved templates for checking subgrade in finished sections. The strength and rigidity of templates shall be such that if a support is transferred to center, no deflection in excess of 1/8 inch will be observed.

3.8 CONSTRUCTION JOINTS

- A. Place courses as nearly continuously as possible. Pass the roller over unprotected ends of the freshly laid mixture only when the mixture has become chilled. When work is resumed, cut back the laid material to produce a slightly beveled edge for the full thickness of the course. Remove old material which has been cut away and lay the new mix against the fresh cut.
- B. When new asphalt is laid against existing or old asphalt, the existing or old asphalt shall be cut to provide a straight smooth joint.

3.9 DEFECTIVE PAVEMENT

- A. Re-compact pavement sections not meeting specified densities or replace them with new asphaltic concrete material. Replace with new material section of surface course pavement not meeting surface test requirements or having an unacceptable surface texture. Patch asphalt pavement sections in accordance with procedures established by the Asphalt Institute. Replace asphalt which did not meet the Specifications.

3.10 FIELD QUALITY CONTROL

- A. Laboratory Testing and Inspection Services: As specified in Section 014000.

3.11 DEFICIENT SURFACE THICKNESS

- A. Any area of asphalt surface found deficient in thickness by more than 0.25 inches shall be removed and replaced, at the Contractor's expense, with asphalt surface of the thickness shown. Care should be taken not to damage or remove the pavement below the asphalt surface. Should damage to the pavement below the asphalt surface occur, it shall also be removed and replaced at the Contractor's expense.

- B. No additional payment over the contract price will be made for any asphalt surface of a thickness exceeding that required by the Contract Documents.

END OF SECTION

SECTION 333913

SANITARY SEWER MANHOLES, FRAMES AND COVERS – ADDENDUM NO. 02

PART 1 GENERAL

1.1 SUMMARY

- A. The Contractor shall furnish and install manholes and all appurtenances.
- B. Brick, masonry, and vitrified clay block manholes shall not be acceptable.

1.2 SUBMITTALS

- A. Submit in accordance with Section 013000 - Submittals.

PART 2 PRODUCTS

2.1 BUILD AMERICA, BUY AMERICA ACT

- A. All sanitary sewer manholes, frames, covers, and materials shall comply with the requirements, terms and conditions of Build America, Buy America Act (BABA) (23 U.S.C. 313, 23 CFR 635.410) under the Infrastructure Investment and Jobs Act (IIJA)/Bipartisan Infrastructure Law (BIL) (Pub. Law 117-58, Nov. 15, 2021).

2.2 MANHOLE DIMENSIONS AND LAYOUT

- A. Manhole dimensions and layout shall be in accordance with details on the Drawings.
- B. The cone section height shall be 24-inches minimum and 30-inches maximum.
- C. Locate the manhole so that the centerlines of all pipes entering and leaving the manhole pass through the center of the manhole.

2.3 CONCRETE (CLASS "A")

- A. Concrete for cast-in-place and precast manholes shall be plant mixed concrete which is mixed and delivered in accordance with ASTM C94.
- B. Concrete shall have a 28-day compressive strength of 4,000 psi and shall contain not more than 6 gallons of water per sack of cement, including the water in aggregates, and contain a minimum of 6 sacks of Portland cement per cubic yard of concrete.
- C. Cement shall be Portland Cement Type 1 conforming to ASTM C150.
- D. Water used shall be clean, potable water and free from injurious amounts of oil, acids, alkalis, salt, sewage, dirt, organic matter, or other deleterious substances.
- E. Fine Aggregate: Fine aggregate shall consist of clean, sound, properly graded sand conforming to ASTM Standard C33 uniformly graded from 100% passing the 3/8 inch sieve to not more than 8% passing the No. 100 sieve.
- F. Coarse Aggregate: Coarse aggregate shall consist of crushed stone or gravel having soft fragments, 1/4% by weight of clay lumps, and 1% by weight of material removed by decantation, except that when the material removed by decantation consists essentially

of crushed dirt the maximum amount permitted may be increased to one and one-half percent by weight. Rocks shall conform to ASTM Standard D289. Coarse aggregate may be either of two sizes, 1 1/2 inch and smaller or 3/4 inch and smaller, and shall be graded within the following requirements.

Maximum size mesh screen (sq. mesh)	0-3% retained by weight
Half maximum size mesh screen (sq. mesh)	30-65% retained by weight
No. 4 sieve	94-100% retained by weight

G. Slump: 3 to 4 inches.

H. Air Content: 4 to 7 percent

I. The concrete shall be delivered and placed within 1 hour after all materials including mixing water have been placed in the mixing drum.

J. Concrete shall not be mixed and placed when a descending temperature is less than 40 degrees F or a rising temperature is less than 35 degrees F. Temperatures shall be taken in the forms or other points of concrete placement. Concrete shall not be placed when there is frost or ice on the forms. In the mixing of concrete, particles of frozen aggregates shall not be used. If the Contractor desires to overcome the stated temperature restrictions, he shall provide heating equipment adequate to maintain a temperature of not less than 40 degrees F. The Contractor shall be responsible for any defective work and shall replace any defective concrete work at his own expense.

2.4 CAST-IN-PLACE MANHOLES

- A. Manhole structures shall be constructed in the size and to the depth indicated on the Drawings and as shown in details on the Drawings. Manholes shall be job-cast of concrete specified above. Cast-in-place manholes shall be made of special purpose forms of steel or plastic specifically designed for manhole construction.
- B. Construction of poured in place manholes shall be a continuous pour; cold joints may be made only with prior approval of the Owner and Engineer.
- C. Minimum wall thickness shall be 6 inches for a 4 ft. diameter manhole and 8 inches for a 5 ft and 6 ft. diameter manhole.
- D. Manhole bottoms shall be of sufficient thickness that the thickness below the invert section shall be 6-inches minimum for 4 ft. diameter manholes, 8-inches minimum for 5 ft. diameter manholes and 12-inches minimum for 6 ft. diameter manholes.
- E. The top section or cone shall be concentric, unless otherwise approved by the Owner.
- F. Drop manholes shall be constructed at all manholes where the difference in invert elevation between incoming and outgoing sewer is 2 feet or more. Drop manholes shall be as shown on the Drawings.
- G. The exterior of all cold joints shall be sealed with 6" wide self priming, self sealing, permanently flexible, butyl based seal specifically designed to create a high performance seal in concrete structures. Sealant shall provide a flexible water-tight seal around perimeter of joint. Seal shall be highly resistant to temperature extremes and acid or caustic environments. Seal shall be BIDCO External Joint Wrap as manufactured by Trelleborg or Infi-Shield Gator Wrap by Sealing Systems, Inc. no other equal.

2.5 MANHOLE FORMS

- A. Forms shall be constructed to the shape, form, lines, and grade as shown on the Drawings, and shall be maintained sufficiently rigid to prevent deformation or displacement under a load.
- B. Forms shall be constructed of any material having sufficient strength to permit a surface of satisfactory finish. They shall be sufficiently tight enough to prevent the escape of mortar in appreciable quantity.
- C. Forms shall be clean and oiled with form oil, designed for that purpose, before concrete is placed. Any reinforcing steel coated with form oil shall be thoroughly cleaned before concrete is placed.

2.6 REINFORCING STEEL

- A. Reinforcement shall be free from rust scale or other coatings that will destroy or reduce the bond.
- B. Where bars are used in concrete which shall remain in contact with earth surfaces, the bars shall be supported in position by framing, and by wire as needed, in such a manner that the supports shall not remain as protrusions through the surface of the concrete. Wire, where used, shall be cut off and pushed down into the concrete before the concrete has reached its initial set.
- C. Where concrete is poured on horizontal forms, bars shall be supported by metal chairs, designed for that purpose.
- B. Reinforcing steel shall be steel of 60,000 psi minimum yield strength, conforming to the following ASTM Standards:
 - 1. A 615, Standard Specification for Deformed Billet-Steel Bars for Concrete Reinforcement
 - 2. A 616, Standard Specification for Rail-Steel Deformed Bars for Concrete Reinforcement
 - 3. A 617, Standard Specification for Axle-Steel Deformed Bars for Concrete Reinforcement
 - 4. A 185, Specification for Welded Steel Wire Fabric for Concrete Reinforcement
- C. All reinforcing steel bars #3 (3/8" diameter) or larger shall be deformed bars conforming to these specifications. Plain (non-deformed) bars larger than 1/4" diameter shall not be used for reinforcing.
- D. The supplier of reinforcing steel shall furnish certification of compliance with these specifications.
- E. Reinforcement shall be shop bent, unless otherwise permitted by the Engineer. Reinforcement partially embedded in concrete shall not be bent. Should field bending of reinforcing bars be required, they shall be bent cold.
- F. Reinforcement shall be accurately placed according to the Drawings or as specified herein and adequately secured in position by concrete, metal, or other approved chairs, spacers, or ties.
- G. Reinforcement shall not be welded unless specifically permitted by the Engineer.
- H. Reinforcement shall be protected by the thickness of concrete as shown on the Drawings.

Where dimensions are not shown, the thickness of concrete over the reinforcement shall be as follows:

1. Where concrete is deposited against the ground without the use of forms, not less than 3 inches, except wire mesh reinforcement for concrete slabs which may be within 1 1/2 inches of the ground.
2. Where concrete is to be exposed to the weather or to the ground but placed in forms, in slabs and wall not exposed to the ground or to the weather not less than 2 inches.
3. In all other cases not less than 2 inches.

2.7 MANHOLE GASKETS

- A. Pipe penetrations through cast-in-place manhole walls and connections to existing manholes shall be provided with a watertight gasket or coupling system suitable for the size of pipe being installed.
- B. Manhole gaskets shall conform to ASTM C923.
- C. Manhole gaskets for cast-in-place manholes shall be Romac Style LCT, Fernco CMA or approved equal.
- D. Manhole connections to pre-cast manholes may be made with Kor-N-Seal pipe to manhole connectors or approved equal.
- E. Manhole gaskets shall be installed in accordance with manufacturer's recommendations.

2.8 PRECAST MANHOLES

- A. Concrete shall have a minimum compressive strength of 4,000 psi. Never transport sections to the site until they have cured for at least ten (10) days.
- B. Manholes shall meet the requirements of ASTM C 478. Minimum wall thickness shall be 5-inches for 4 ft. diameter manholes, 6-inches for 5 ft. diameter manholes, and 7-inches for 6 ft. diameter manhole.
- C. Mark each piece plainly with manhole numbers and date of manufacture so it can be installed in the proper location, as shown on the plans. Cones shall be of the concentric type.
- D. Make sure factory-installed cutouts in the bottom section are appropriate for the pipe being laid.
- E. Riser sections shall be of suitable dimensions to construct the finished manhole top to the elevation shown on the Drawings or as directed by the Engineer.
- F. Horizontal joints between sections shall be made using elastomeric, pre-lubricated gaskets. Gaskets shall remain workable over a wide temperature range and shall not shrink, harden, or oxidize upon aging. Gaskets shall meet the requirements of ASTM C443 and ASTM C 361. Gaskets shall be Tylox Superseal, Forsheda 114, or approved equal.
- G. The interior annular space at horizontal joints shall be grouted after installation with non-shrink grout. The exterior annular space at horizontal joints shall be sealed with 6" wide self priming, self sealing, permanently flexible, butyl based seal specifically designed to create a high performance seal in concrete structures. Sealant shall provide a flexible water-tight seal around perimeter of

joint. Seal shall be highly resistant to temperature extremes and acid or caustic environments. Seal shall be Wrapid Seal as manufactured by Canusa CPS, BIDCO External Joint Wrap as manufactured by NPC, or approved equal.

- H. The invert of the manhole shall be finished with flow channels as shown on the Drawings, and free of sharp edges.
- I. Manhole bottoms shall be of sufficient thickness that the thickness below the invert section shall be 6-inches minimum for 4 ft. diameter manholes and 8-inches minimum for 5 ft. and 6 ft. diameter manholes.
- J. Diameter: As indicated on Drawings.
- K. The outside of the ring and cover shall be grouted with non-shrink grout. The frame for the lid shall be installed when cone section is cast.
- L. Pipe penetrations through manhole walls shall be provided with a watertight elastomeric gasket and shall be sized for the outside diameter of the sewer pipe to be inserted into the manhole. Pipe penetration seals shall be of rubber or similar material conforming to ASTM C443 and C923. Seals shall be appropriate for type of pipe material used and shall be Kor-N-Seal, as manufactured by NPC, Inc. or A-Lok, as manufactured by A-Lok Products, Inc., or approved equal.
- M. Drop manholes shall be constructed at all manholes where the difference in invert elevation between incoming and outgoing sewer is 2 feet or more. Drop manholes shall be as shown on the Drawings.
- N. Grade Rings: Reinforced-concrete rings, 6 to 9-inch total thickness, to match diameter of manhole frame and cover.

2.9 STANDARD MANHOLE RING AND COVER FOR 4 FT DIAMETER MANHOLES

- A. All manhole ring and covers for 4 ft. diameter manholes shall be heavy duty cast iron and non-perforated.
- B. Cover shall have the letters SANITARY SEWER permanently cast on the surface of the cover.
- C. Two closed pick holes with bars shall be cast into the cover for lifting.
- D. Ring and cover shall have a 23.5-inch diameter cover, 32-inch flange diameter, and a 22-inch diameter clear opening. Seat depth shall be 2-inches.
- E. Cover shall have a machined bearing surface to prevent rocking.
- F. Ring and cover shall be made in USA.
- G. Ring and cover shall be Model V1348-1 by East Jordan Iron Works, Inc., Model 1266 by Deeter Foundry, or approved equal.

2.12 MANHOLE STEPS

- A. Manholes shall not have steps.

2.13 MANHOLE RISER RINGS

- A. Manhole riser rings shall be compatible with the size and type of manhole cover with which

it will be used.

- B. The throat section height shall not exceed 12-inches unless approved by Engineer. The throat section shall be defined as the distance from the bottom of the integral cast manhole ring to the top of the manhole cover.
- C. Manhole riser rings may be constructed of concrete, polyethylene, or approved equal.
- D. Manhole riser rings shall only be used with approval of Engineer.

2.14 CEMENTITIOUS NON-SHRINK GROUT

- A. Cementitious non-shrink grout for use in installing pipe at existing manhole structures and other places as designated to receive non-shrink grout shall be one specially formulated for stopping active infiltration and filling voids in manholes and similar locations. Grout mix shall provide a quick setting, volume stable, cementitious product suitable for patching the interior of manholes when mixed and applied according to the manufacturer's recommendations. Grout mix shall be Strong Seal QSR, Quadex Hyperform as manufactured by Quadex, Inc., or approved equal.
- B. Grout that has not been used within 30 minutes after water has been added shall not be used.

PART 3 EXECUTION

3.1 GENERAL

- A. Trench and backfill shall be in accordance with Section 312333 - Trench Excavation, Backfill, and Compacting.
- B. Install manholes for changes in direction or pipe diameter.
- C. Contractor shall keep the interior of the manholes free from dirt, rocks, and other debris during construction.
- D. Manhole structures shall be constructed to the size and to the depth as indicated on the Drawings and as shown in details on the Drawings.
- E. Form continuous concrete channels and benches between inlets and outlet. Form a flow channel in the bench for any services stubbed into the manhole the same as mains.
- F. Benches shall be shaped and sloped 1/2 inch per foot from the manhole barrel wall down to 1/2 of the inside pipe diameter.
- G. The entire diameter of each pipe entering the manhole shall be cut smooth with the inside surface of the manhole barrel and the invert shaped throughout from all inlet pipes to the outlet pipe.
- H. The flow channels in the invert shall be contoured to the inside diameter of all pipes entering and exiting the manhole. Flow channels shall have a positive slope between inlet and outlet pipes.
- I. Set manhole frame and cover top level. Tops of manholes shall be constructed 4 inches above finished grade in maintained lawn areas, 1 foot above finished grade in wooded areas, or at elevation shown on the Drawings. Set tops of manholes in paved areas flush with pavements, sidewalks, or other paved surface. Finish grade shall slope

away from manholes located in paved surfaces.

J. Manholes shall be backfilled evenly around it's perimeter after 48 hours of concrete curing time. Care shall be taken to compact all backfill to the top of the highest pipe entering the manhole. Backfilling and bedding shall be in accordance with these specifications and as shown on the Drawings.

K. All manholes shall be watertight and shall show no visible evidence of infiltration.

L. Extend all pipes entirely through the manhole wall so that a joint occurs approximately 6-inches, but not greater than 12-inches, outside the manhole wall.

3.2 CAST-IN-PLACE MANHOLE INSTALLATION

A. Forms for poured in place manholes shall have cutouts to fit around the sewer pipe entering the manhole so that the form rests upon the concrete base. Inlet and outlet pipes shall be joined to the manhole with a concrete watertight manhole gasket as specified above. Forms shall provide a smooth finish when forms are removed.

B. Should circumstances make a cold joint necessary, a formed groove (keyway) and reinforcing dowels shall be required in the top of the first placement for shear protection. In no case shall a cold joint be below the observed water table without prior approval of the Owner. Immediately before the second placement is made, the surface of the cold joint shall be thoroughly cleaned and wetted with a layer of mortar being deposited on the surface.

C. Consolidate concrete with a tamping rod, vibrator or other approved method so that a dense void free mass is formed.

D. The tops of manhole bases shall be struck off to reasonably true planes. All scum, debris, and excess water shall be removed from the surface and the surface given a wood float finish.

E. The interior finish shall be smooth and free of fins or sharp edges.

F. Exterior walls which will remain exposed in the completed work, shall be wetted thoroughly and rubbed with a medium grit carborundum stone finish, followed by a second rubbing with a finer carborundum stone to obtain a smooth texture and uniform color. Rubbing shall not be undertaken until the end of the curing period. A cement wash or plaster coat shall not be acceptable.

E. Unexposed surfaces in the completed work shall be carefully struck off with no further finish.

F. Defective concrete whether exposed or unexposed, shall be repaired or replaced as required by Owner and Engineer.

G. Install rubber gaskets in the walls around all pipes.

H. The exterior of all cold joints shall be sealed with 6" wide external joint wrap in accordance with manufacturer's instructions and details shown on the Drawings. Wrapping shall occur after manhole has been cleaned and free of debris that would inhibit the seal.

3.3 PRECAST MANHOLE INSTALLATION

A. The bottom section of precast manholes shall be manufactured as an integral part of the manhole base slab. Install remaining sections in a truly vertical plane.

- B. Fill space between pipe and periphery of cutout entirely with non-shrink grout. The interior annular space at horizontal joints shall be grouted after installation with non-shrink grout. Grout lifting eyes with non-shrink grout.
- C. The interior finish shall be smooth and free of fins or sharp edges.
- D. The interior finish shall be smooth and free of fins or sharp edges.
- E. Invert shall be constructed in accordance with details shown on the Drawings.
- F. External horizontal joints shall be sealed with 6" wide external joint wrap in accordance with manufacturer's instructions and details shown on the Drawings. Wrapping shall occur after precast manhole has been cleaned and free of debris that would inhibit the seal.

3.4 MANHOLE EXCAVATION

- A. Excavate the base area no larger than necessary to provide an adequate base.
- B. Dewater all excavations before starting any permanent construction. Manholes shall not be installed in water filled excavation.
- C. Provide sheeting and shoring as required.
- D. Provide a minimum of 12-inches between the outer surface of manholes and the excavation or shoring.
- E. If over excavation occurs, provide foundation stabilization material in accordance with Section 312333 of these Specifications or concrete poured monolithically with the base.

3.5 PLACING CONCRETE

- A. The concrete base shall be poured on undisturbed earth free from frost, ice, mud, and other detrimental substances. Prior to pouring the base, any water in the excavation shall be removed and the base poured in the dry.
- B. Concrete shall be placed monolithically between walls and base.
- C. The interior of forms shall be cleaned of all sawdust, chips, and other construction debris.
- D. Steel reinforcement shall be inspected and approved by the Engineer prior to placement of concrete. Runways for buggies or wheelbarrows shall not be supported on the reinforcement.
- E. Concrete shall be placed in such a manner as to avoid segregation, and to avoid displacement of reinforcement. Concrete shall not be discharged through open chutes, except chutes in mixing plants or on mixer trucks. Concrete shall be deposited as closely as feasible to its final position. Concrete shall not be dropped freely for distances greater than those specified as follows:

Bottom and top slabs of structures - 3 feet
 Pipe Foundations - 3 feet
 Bases of Manholes - 10 feet
 Concrete Encasement - 10 feet

F. Concrete shall be placed to the lines, grades, and sections shown on the Drawings or as directed by the Engineer. Care shall be exercised in the placing of concrete that the forms are not displaced. Honeycomb shall be prevented by proper manipulation and compaction of the concrete.

G. Concrete shall not be placed in layers over 18 inches deep. The method and rate of placement shall be such that the top of the layer is kept fresh, and the formation of cold joints is avoided. Each layer shall be compacted by mechanical internal vibrating equipment, supplemented by hand spading, rodding and tamping. Vibrators shall not be used to transport concrete inside forms over distances so great as to cause segregation.

H. The use of form vibrators is not acceptable. Internal vibrators shall be capable of transmitting vibration to the concrete at frequencies not less than 4,500 impulses per minute. Duration of vibration shall be limited to the time necessary to provide satisfactory consolidation without causing segregation. Vibrators shall be applied in a substantially vertical position, penetrating the surface of previously placed layers so as to ensure bonding of the layers and prevention of cold joints, and at uniformly spaced points not further apart than the visible effectiveness for the vibrator. Vibration shall be supplemented by hand spading, rodding, and tamping. All concrete shall be vibrated, except the concrete in manhole bases and pipe foundations need not be vibrated if other methods produce satisfactory results.

I. If a construction joint is required because of plant breakdown or other unforeseeable cause, the joint shall be formed in a manner approved by the Owner and Engineer. Joints shall be cleaned of all laitance, loose particles, and other debris before new concrete is placed. Cleaning shall be thorough but shall not dislodge the embedded coarse aggregates. Joints shall be kept moist for a period of 4 days or until new concrete is placed thereon. Concrete shall be placed monolithically between construction joints.

3.6 MANHOLE FORM REMOVAL

A. Forms shall be removed in such a manner that the concrete is not damaged. Forms shall not be removed prior to the periods of time as follows:

Exterior Walls - 48 hours

Interior Wall forms, if not support for top slab forms - 48 hours

Top Slab Forms - 7 days

B. Form ties shall be broken off, or cut back, 1/4 inch and the resulting holes or depressions filled with mortar and struck off even with the concrete surface. This operation shall take place as the forms are removed.

C. Honeycombing found to be present after the removal of forms shall be repaired as directed by the Engineer.

3.7 STUBOUTS

A. Stubouts shall be constructed in the direction and shall be of the size as shown on the Drawings.

B. Stubouts shall be bedded and backfilled as specified and shown on the Drawings for sewer pipe.

C. Watertight caps shall be installed on the end of stubouts that are not connected to live services.

- D. Stubouts shall be pressure tested as specified for gravity sewers.

3.8 CONNECTIONS TO EXISTING MANHOLES

- A. The sewage flow through the existing manhole shall be controlled by temporary plugs or bypass pumping as necessary to facilitate the new connection and grouting to the manhole invert. The existing flow of sewage shall be maintained in a manner to prevent overflow or discharge of sewage onto the ground surface and prevent damage caused by excessive surcharge in upstream sewer mains and service connections.
- C. Cut opening in the wall of existing manhole of sufficient size to permit proper installation of the new pipe at the designated line and grade.
- D. Insert new pipe through wall of manhole with manhole gasket positioned around the pipe at the midpoint of the wall.
- E. The opening in the wall around the new pipe shall be filled with non-shrink grout and properly finished inside and outside with cement mortar, so that leakage does not occur.
- F. The invert of the existing manhole shall be chipped out and re-grouted with cement mortar as necessary to provide a smooth transition between the invert to the new pipe and the other pipes entering and leaving the manhole.

3.9 DROP MANHOLES

- A. Drop manholes shall be constructed at all manholes where the difference in invert elevation between incoming and outgoing sewer is 2 feet or more.
- B. Drop manholes shall be as shown on the Drawings.
- C. Pipe and fittings for drops shall be ductile iron.
- D. Encase the 90-degree bend in concrete as shown on the Drawings.

3.9 TESTING

- A. All new manholes shall be visually inspected during installation and before backfill, vacuum tested as specified below, and visually inspected after backfill and testing.
- B. All manholes shall pass a vacuum test in accordance with ASTM C1244 and as follows:
- C. Vacuum testing shall not be performed earlier than 7 days after construction or installation.
- D. Contractor shall provide all test equipment and perform the test under witness by the Engineer and authorities having jurisdiction.
- E. Manholes shall be tested using the vacuum testing procedure:
 - 1. Vacuum test head shall be positioned at the inside surface of the concrete at the top of the cone section and the seal inflated in accordance with the equipment manufacturer's instructions.
 - 2. A vacuum of 10 inches of mercury shall be drawn and the vacuum pump isolated by the shut-off valve on the test head connection.

3. When valve is closed, time measurement shall commence, and the time required for vacuum drop to 9 inches of mercury shall be observed and recorded.

4. The time measured for vacuum drop from 10 inches to 9 inches of mercury shall not be less than indicated in the following table.

Depth of Manhole (Feet)	Time in seconds for 1" Drop in Mercury		
	48" Diameter	60" Diameter	72" Diameter
<10	20	23	33
10'	25	33	41
12'	30	39	49
14'	35	46	57
16'	40	57	67
18'	45	59	73
20'	50	65	81
22'	55	72	89
24'	59	78	97
26'	64	85	105
28'	69	91	113
30'	74	98	121

5. Manholes showing greater than the allowable leakage shall be repaired and re-tested until a satisfactory leakage result is obtained.

F. All manholes with leaks in excess of the above shall be repaired or replaced. All corrective work shall be approved by the Engineer.

G. Repair or replace manholes failing the vacuum test and repeat testing until leakage is within allowances specified.

H. The Engineer will visually inspect manholes during all phases of construction. The level of inspection is at the discretion of the Engineer and will be based partly on the Contractors ability, experience, and past performance. All work not conforming to these Specifications and/or Drawings shall be corrected by the Contractor.

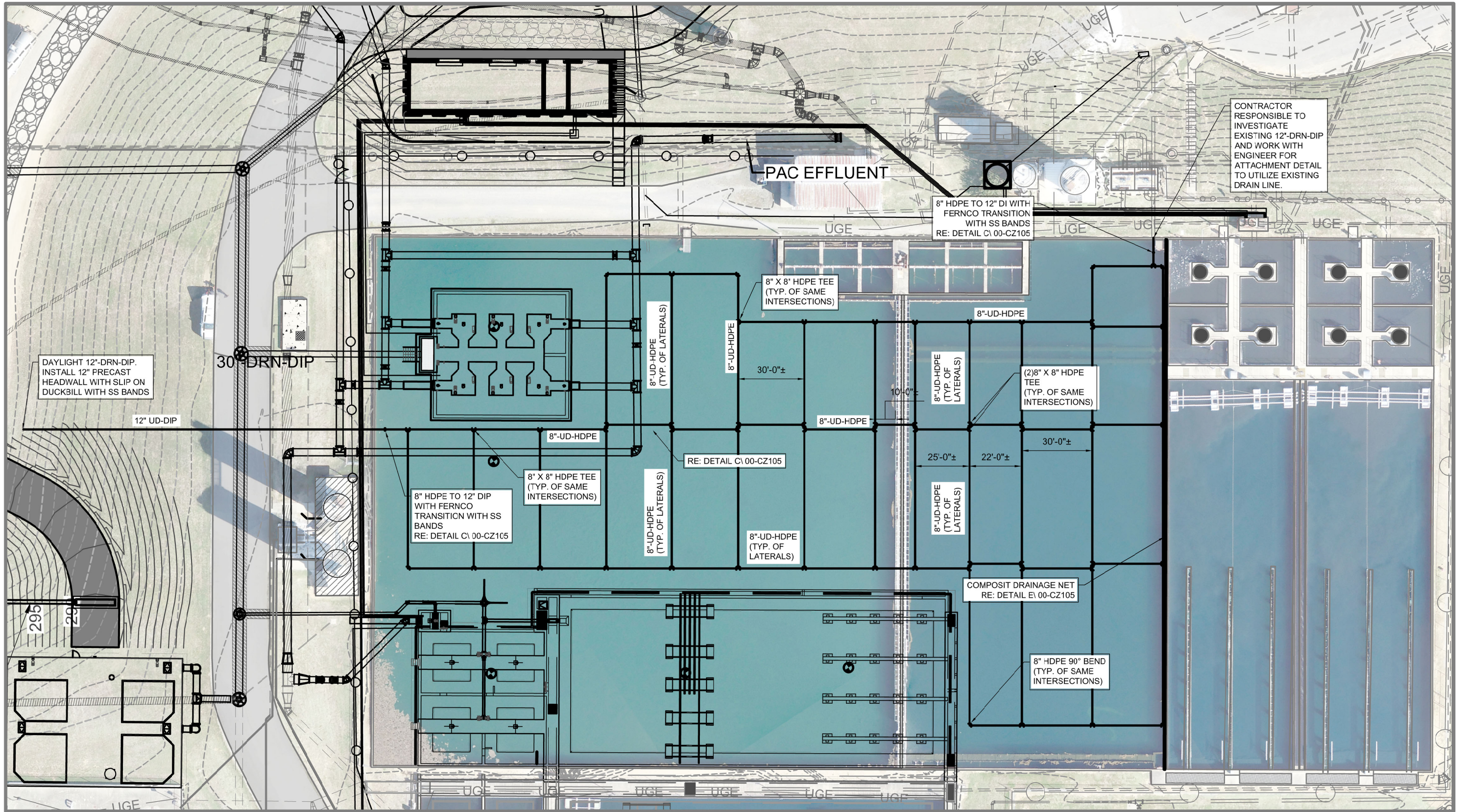
3.10 PIPE SEAL AT MANHOLE

A. Seal of pipe at new or existing manholes will be inspected upon completion of each line segment and again at final inspection prior to final acceptance of the project. No visible

leaks shall be allowed. Should a leak be present at any of the inspection times it will be the responsibility of the Contractor to stop the leak with a method approved by the Engineer. Any leaks discovered during the warranty period shall be repaired under the Warranty.

END OF SECTION

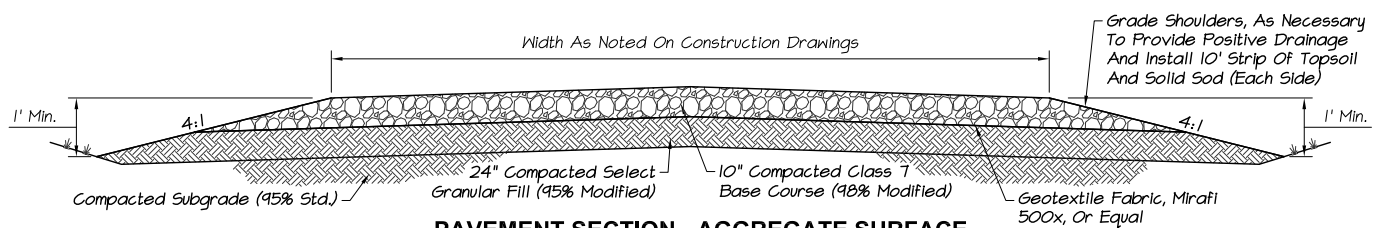
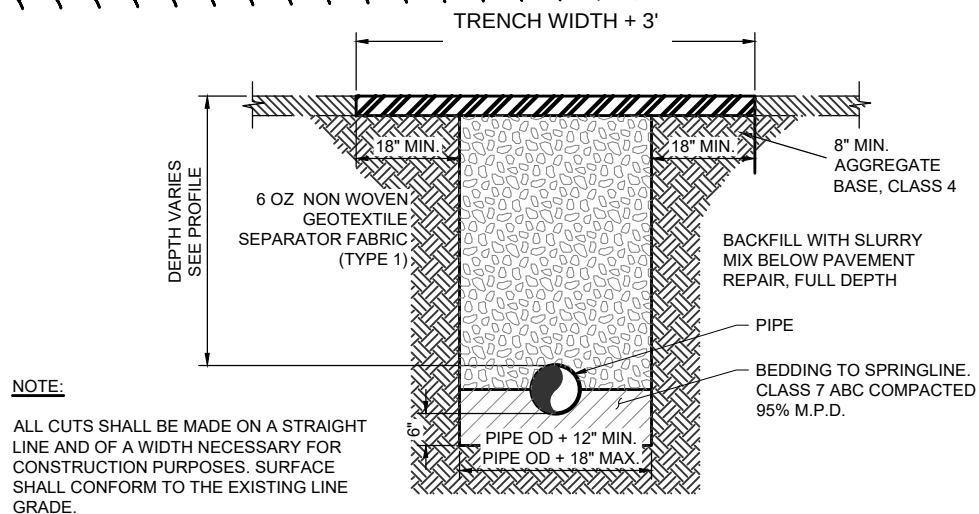
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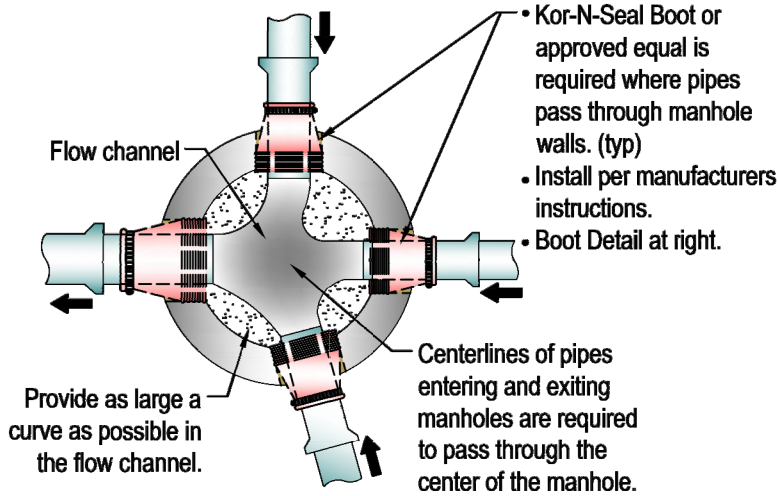


BASIN FILL UNDERDRAIN
PLAN
SCALE = 1" = 40'

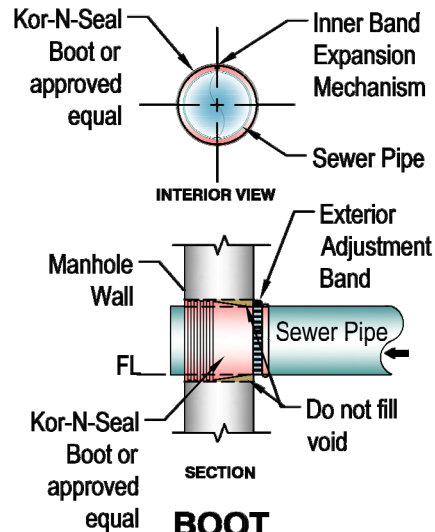
0 1"
1" = 1"

Crist ENGINEERS		CRIST ENGINEERS, INC. CONSULTING ENGINEERS 1 EXECUTIVE CENTER COURT LITTLE ROCK, ARKANSAS 72213 TELEPHONE: (501) 654-1332 WWW.CRISTENGINEERS.COM		GARVER 4701 NORTHSORE DRIVE NORTH LITTLE ROCK, ARKANSAS 72118 TELEPHONE: (501) 370-3653 WWW.GARVER-USA.COM	
CONWAY CORPORATION ROGER Q. MILLS JR. WATER TREATMENT PLANT 8 MGD EXPANSION & IMPROVEMENTS BASIN FILL UNDERDRAIN PLAN					
DESIGNED: CAJ	CRIST JOB NO. 2135	DATE 5/22/24	ADD. NO. 2	REF SHEET	
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CHECKED: CAJ	05-C105				





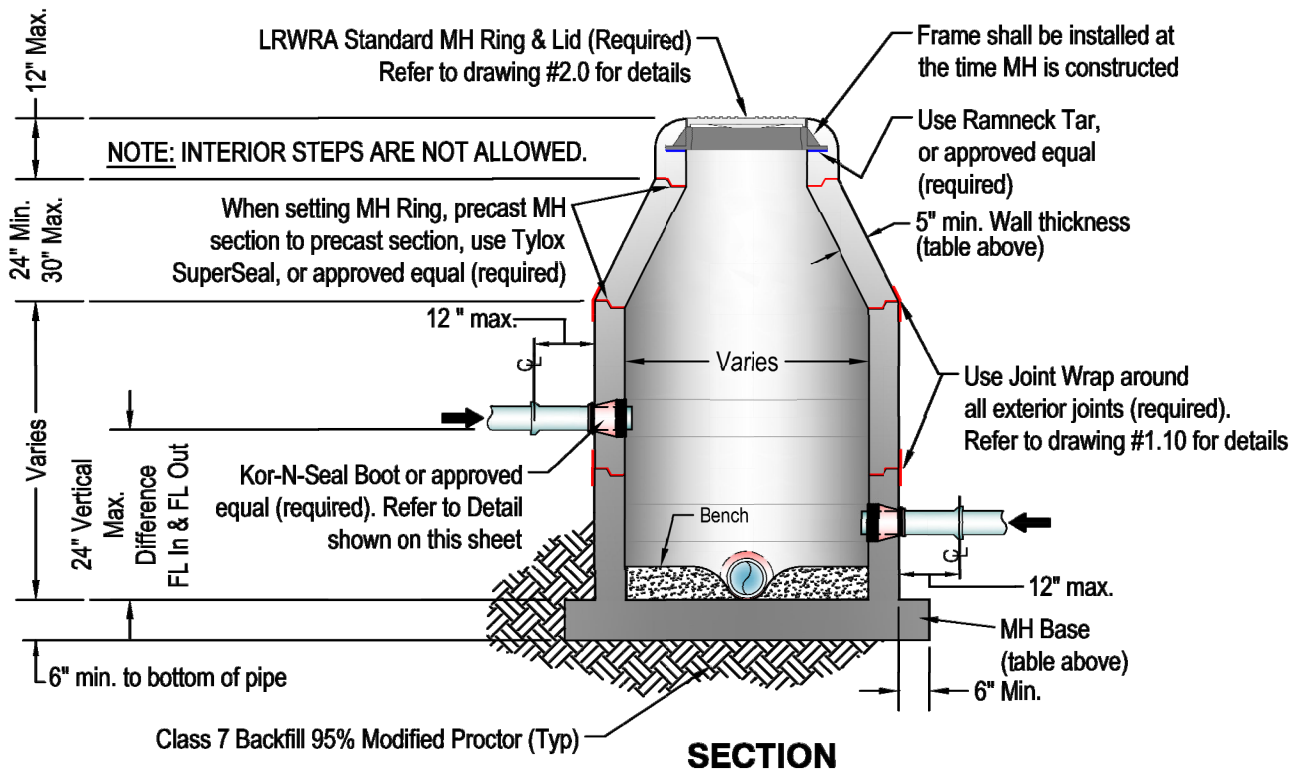
**MANHOLE
FLOW CHANNEL**



**BOOT
DETAILS**

MANHOLE INFORMATION TABLE

Inside Diameter of Manhole	Minimum Wall Thickness	Base Thickness	Minimum Lid & Ring Size
4' DIA	5"	6"	24" (< or Equal to 24" Pipes)
5' DIA	6"	8"	30"
6' DIA	7"	8"	36" (> 24" Pipes)



SECTION

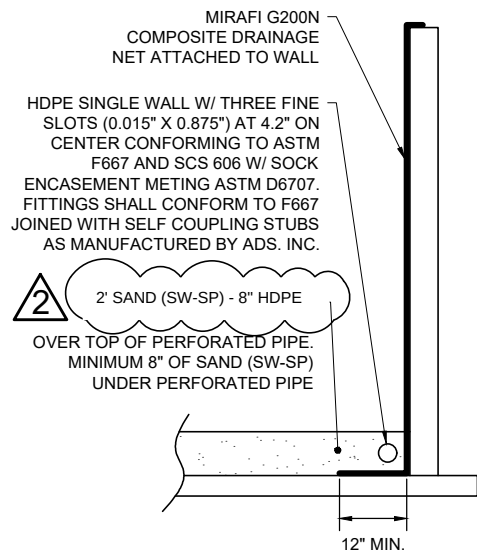
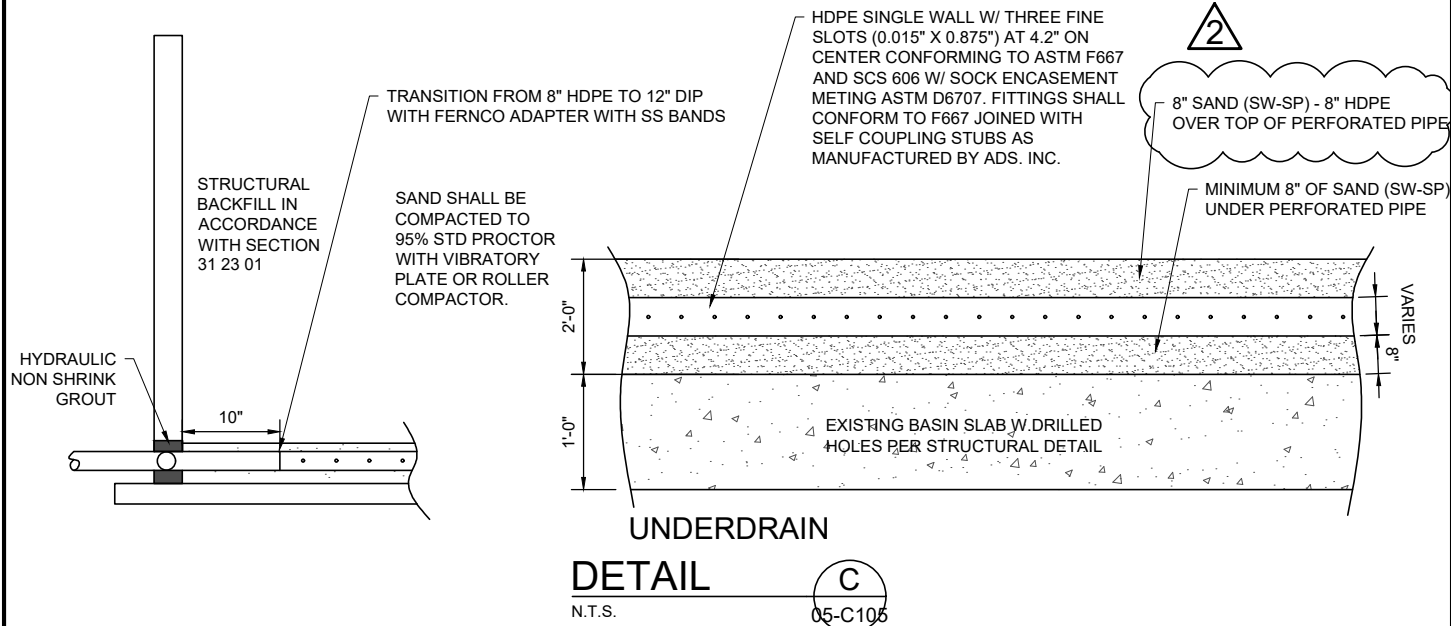
PRECAST MANHOLE
DETAIL

N.T.S.

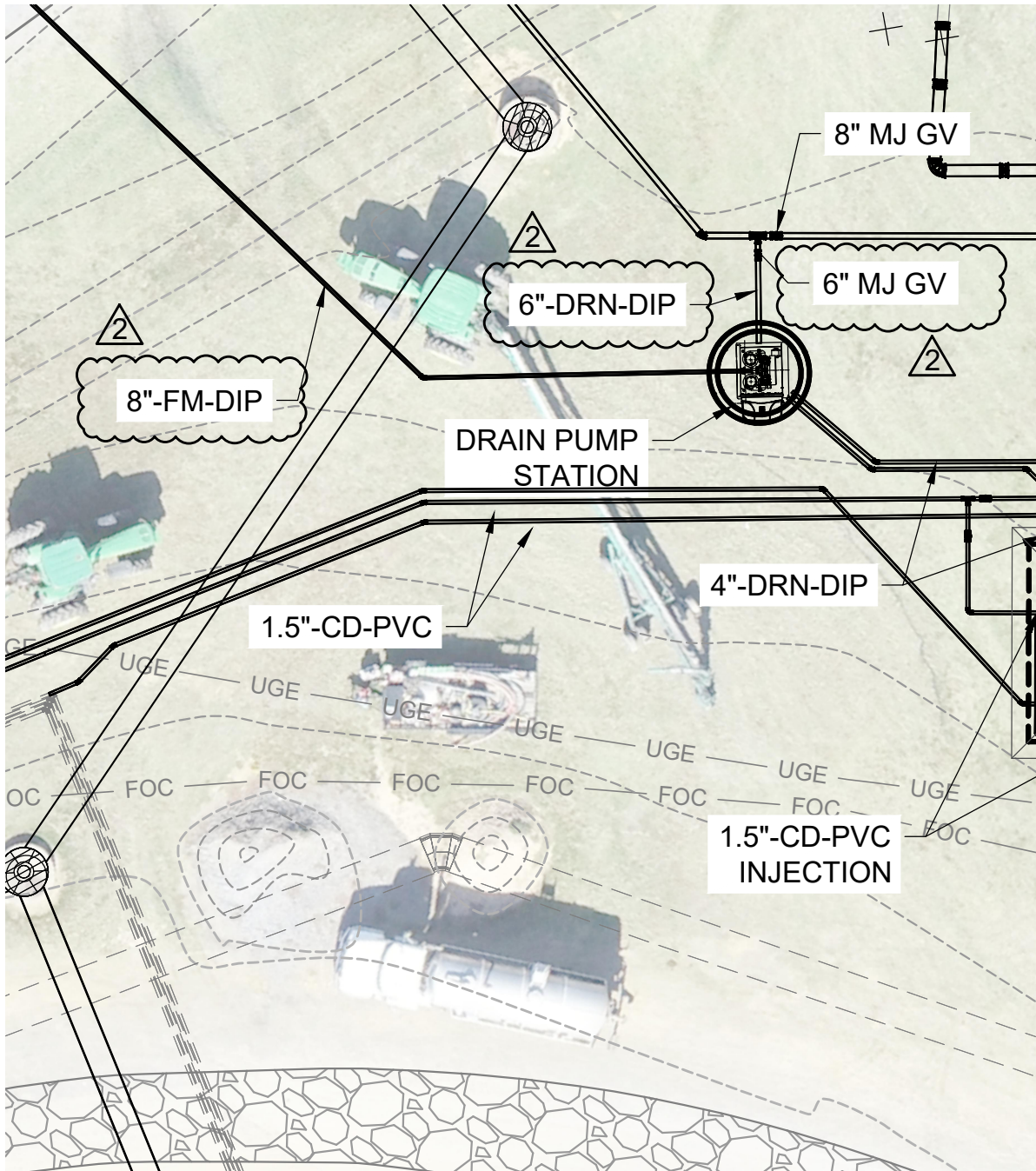


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CONWAY CORPORATION ROGER Q. MILLS JR. WATER TREATMENT PLANT 8 MGD EXPANSION & IMPROVEMENTS CIVIL DETAILS VII			
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ROGER Q. MILLS JR. WATER TREATMENT PLANT		
8 MGD EXPANSION & IMPROVEMENTS		
CIVIL DETAILS VI		
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BLENDING STRUCTURE

PLAN

SCALE = 1" = 20'



1" = 1"



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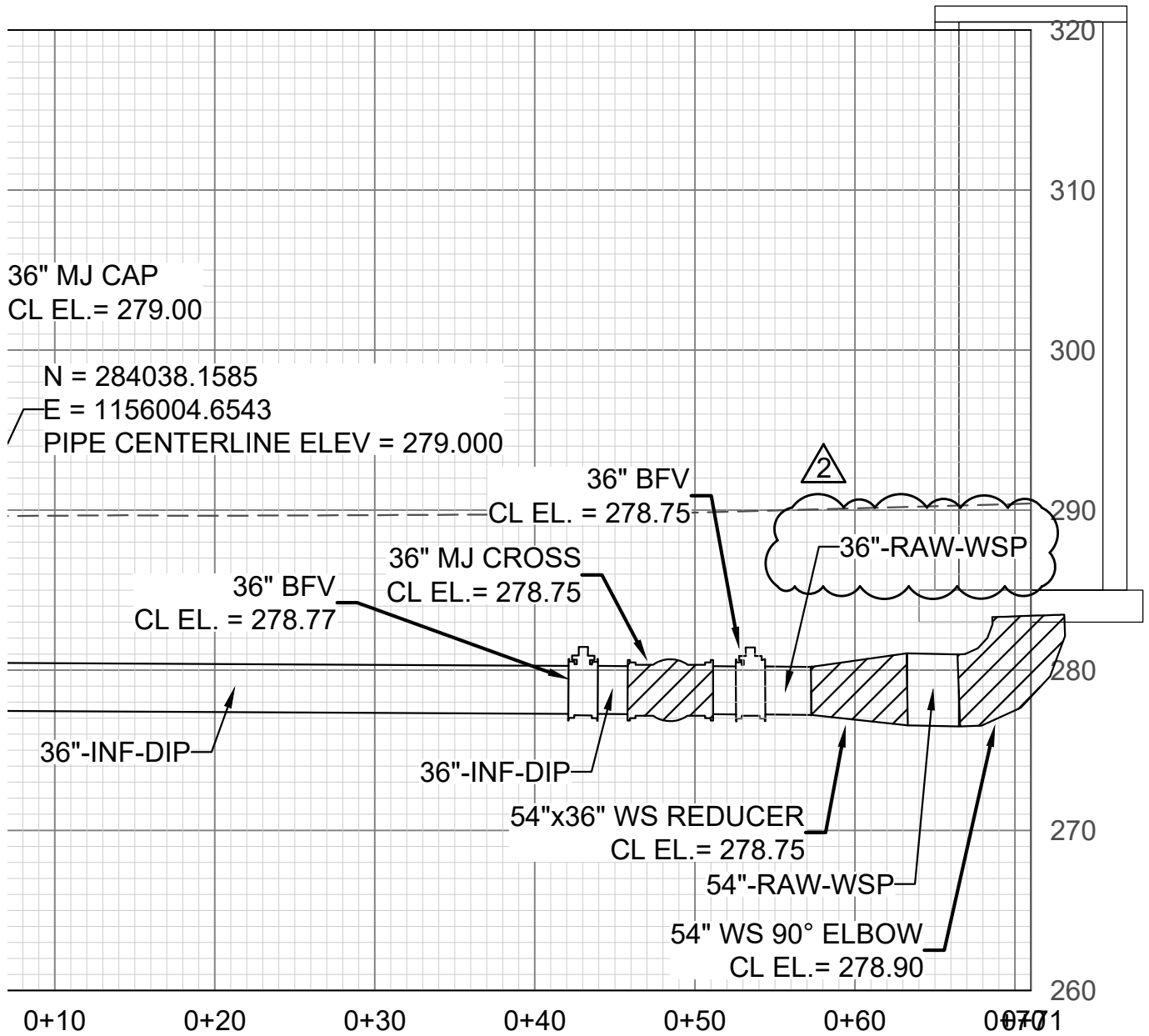


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CONWAY CORPORATION ROGER Q. MILLS JR. WATER TREATMENT PLANT 8 MGD EXPANSION & IMPROVEMENTS RAW WATER BLENDING STRUCTURE GRADING PLAN AND SECTION

DESIGNED: CAJ	CRIST JOB NO. 2135	DATE 5/28/24	ADD. NO. 2
DRAFTED: MAB	GARVER JOB NO. 19W01300	SCALE: NOT TO SCALE	REF SHEET 10-C200
CHECKED: CAJ			

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2

36"-INF-DIP & 36"/54"-INF-WSP
PROFILE
SCALE = 1" = 10' H
1" = 4' V



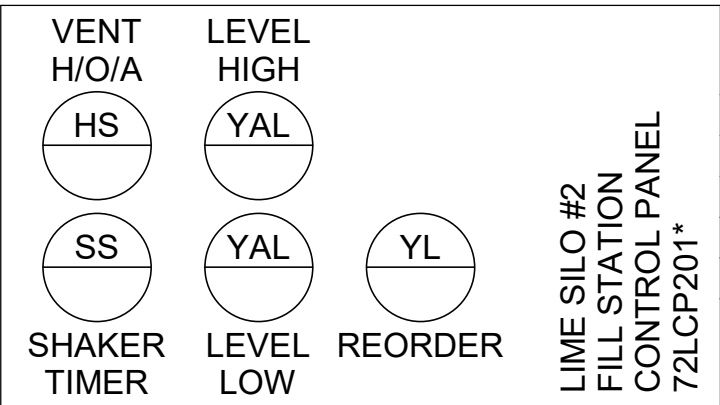
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CONWAY CORPORATION			
ROGER Q. MILLS JR. WATER TREATMENT PLANT			
8 MGD EXPANSION & IMPROVEMENTS			
RAW WATER BLENDING STRUCTURE PLAN AND PROFILE 1			
DESIGNED: CAJ	CRIST JOB NO. 2135	DATE 5/28/24	ADD. NO. 2
DRAFTED: MAB	GARVER JOB NO. 19W01300	SCALE: NOT TO SCALE	REF SHEET 10-C300
CHECKED: CAJ			

- NOTES:
- SIGNAL LINES TO EQUIPMENT INTENDED ONLY TO INDICATE A REQUIRED ELECTRICAL CONNECTION. REFER TO PLAN SHEETS, CONTROL SCHEMATICS, AND I/O LISTS FOR ADDITIONAL INFORMATION ABOUT NUMBER AND TYPES OF SIGNAL WIRING.
 - EQUIPMENT TAGS WITH "X", INSERT EQUIPMENT NUMBER.
 - EQUIPMENT TAGS AND NAMES CONTAINING " * " ARE MANUFACTURER SUPPLIED AS PART OF EQUIPMENT PACKAGE.

HMI
LEVEL

PLC
LEVEL

MCC/CP
LEVEL



TRUCK FILL STATION

LIME FEED STORAGE
SYSTEM #2*

HYDRATED LIME
STORAGE SILO #2

BIN
ACTIVATOR

BATCH TANK #2

SCALE

08-I723
TO HYDRATED LIME
DAY TANKS

REV	DATE	DESCRIPTION	BY
2	05/17/24	ADD 02	



0 1"
1" = 1"
THIS LINE MEASURES 1"
WHEN PLOTTED FULL
SIZE

DESIGNED BY:
JCW

DRAWN BY:
WBW

CHECKED BY:
JCW

DATE:
MAY 2024



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CONWAY CORPORATION
**ROGER Q. MILLS WTP IMPROVEMENTS
8 MGD EXPANSION & IMPROVEMENTS**
ADDENDUM NO. 02

LIME SILO AND MIXING TANK 2 P&ID

CEI JOB NO.:
2135
GARVER JOB NO.:
19W01300
DRAWING NUMBER
08-I722
SHEET
NUMBER **050**

NOTES:

1. SIGNAL LINES TO EQUIPMENT INTENDED ONLY TO INDICATE A REQUIRED ELECTRICAL CONNECTION. REFER TO PLAN SHEETS, CONTROL SCHEMATICS, AND I/O LISTS FOR ADDITIONAL INFORMATION ABOUT NUMBER AND TYPES OF SIGNAL WIRING.
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3. EQUIPMENT TAGS AND NAMES CONTAINING " * " ARE MANUFACTURER SUPPLIED AS PART OF EQUIPMENT PACKAGE.

KEYNOTES:

- 1 FROM PAC FEED CONTROL PANEL TO FIELD INSTRUMENTATION.
- 2 FROM PAC FEED CONTROL PANEL TO SLURRY PUMP.

HMI
LEVEL

PLC
LEVEL

MCC/CP
LEVEL

08-1724
FROM PAC STORAGE

W2
FROM PLANT WATER
SUPPLY

WATER SUPPLY
PANEL*

725
PI
401*

725
PS
401*

725
FIT
401*

725
FE
401*

M

S

725SV401*

725
LIT
001*

725
LE
001*

725M001*

M

PAC SLURRY TANK

PAC SLURRY SYSTEM*

725P101*

725P201*

725P301*

725
PI
101*

725
PS
101*

725
PI
201*

725
PS
201*

725
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301*

725
PS
301*

725
FS
101*

725
FS
201*

725
FS
301*

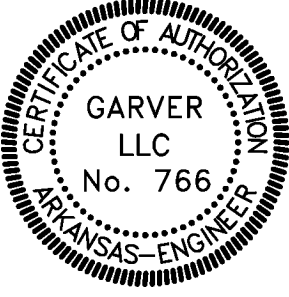
08-1151
TO PAC
CONTACTORS

08-1151
TO PAC
CONTACTORS

PLC72-11*

720P72-11*

REV	DATE	DESCRIPTION	BY
2	05/17/24	ADD 02	



Digitally Signed 05/17/2024

0
1"
1" = 1"
THIS LINE MEASURES 1"
WHEN PLOTTED FULL
SIZE

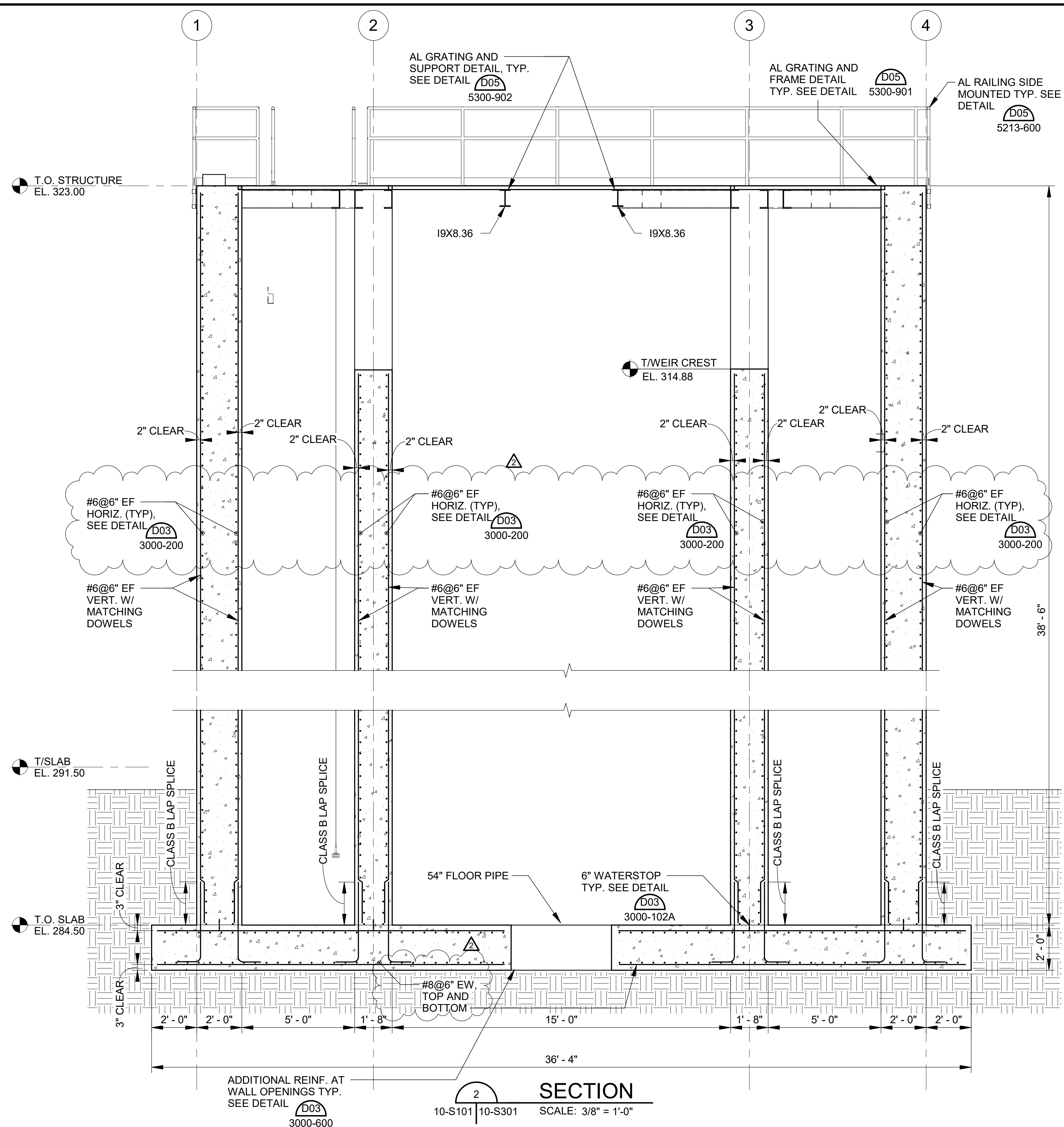
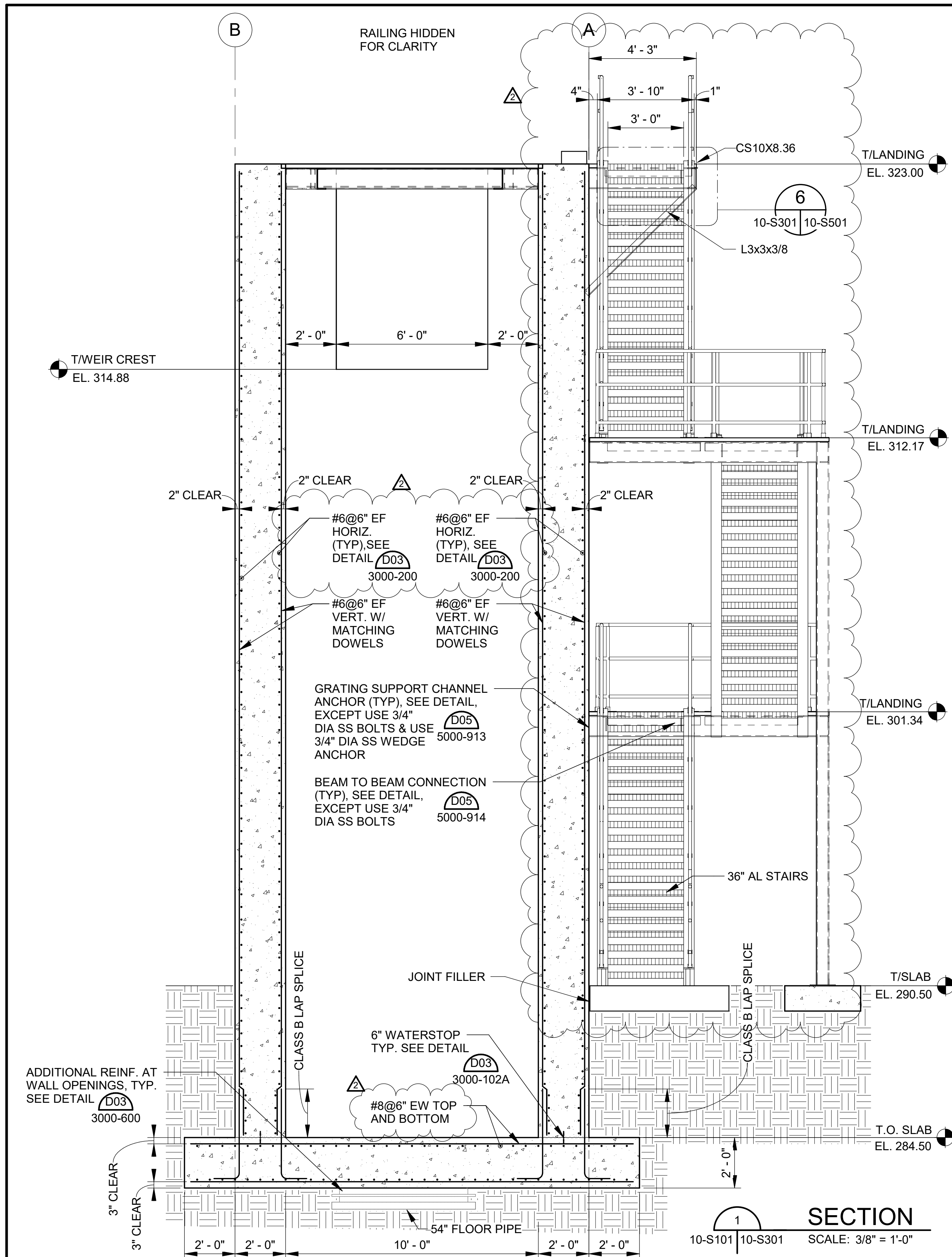
DESIGNED BY: JCW
DRAWN BY: WBW
CHECKED BY: JCW
DATE: MAY 2024



CONWAY CORPORATION
ROGER Q. MILLS WTP IMPROVEMENTS
8 MGD EXPANSION & IMPROVEMENTS
ADDENDUM NO. 02

PAC FEED AND STORAGE P&ID 2

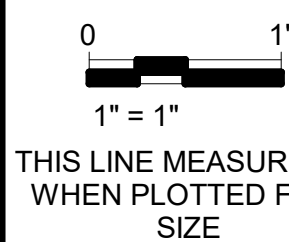
CEI JOB NO.: 2135
GARVER JOB NO.: 19W01300
DRAWING NUMBER
08-1725
SHEET NUMBER
053



REV	DATE	DESCRIPTION	BY
2	05/17/24	ADD 02	



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DESIGNED BY:	HB
DRAWN BY:	DMK
CHECKED BY:	KAM
DATE:	MAY 2024



CRIST ENGINEERS, INC.
CONSULTING ENGINEERS
1 EXECUTIVE CENTER COURT
LITTLE ROCK, ARKANSAS 72211
TELEPHONE: (501) 664-1552
FAX: (501) 664-8579
WWW.CRISTENGINEERS.COM

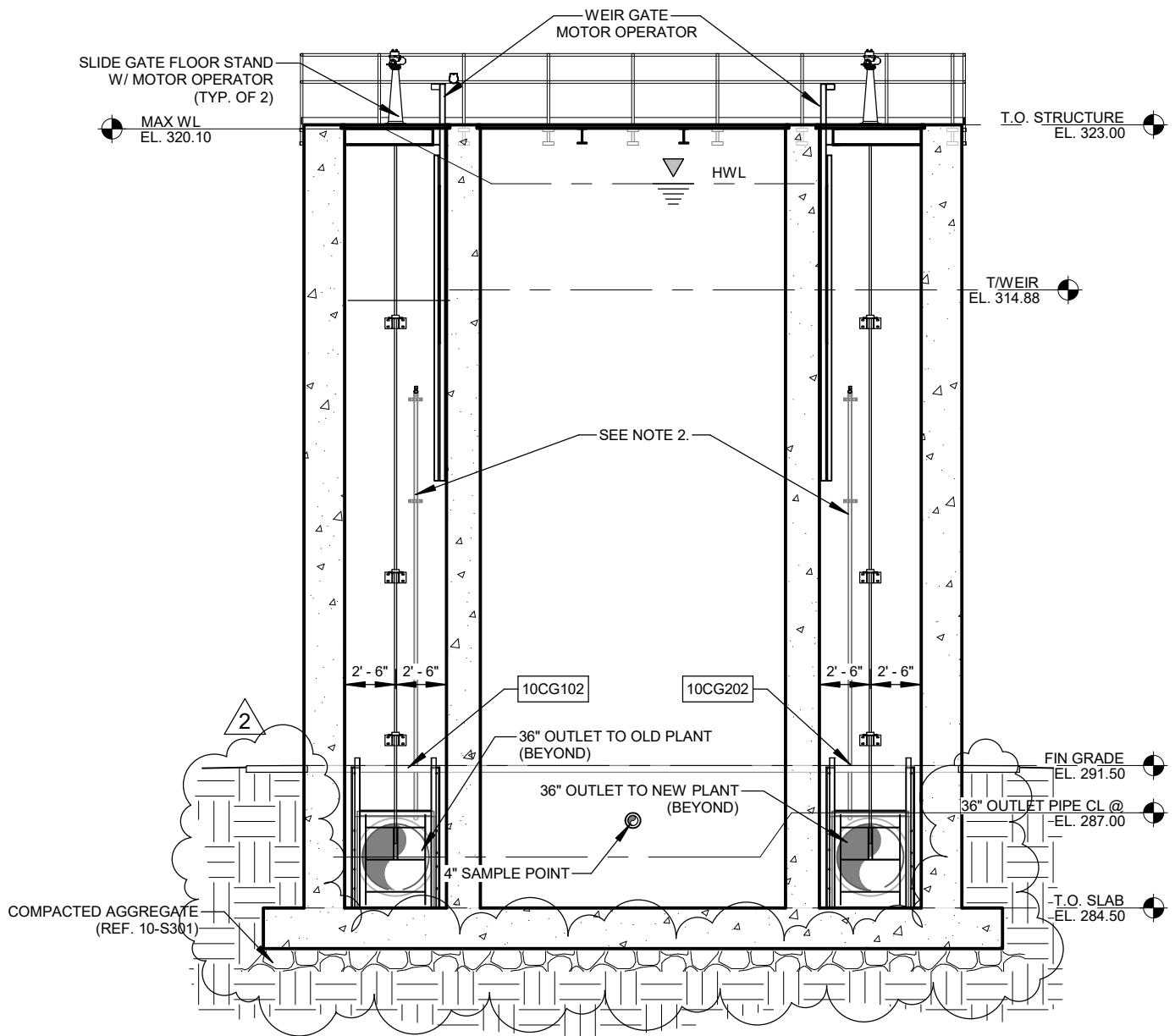


4701 NORTHSORE DR.
NORTH LITTLE ROCK, ARKANSAS 72118
TELEPHONE: (501) 376-3633
FAX: (501) 372-8042
WWW.GARVERUSA.COM

CONWAY CORPORATION
ROGER Q MILLS JR. WATER TREATMENT PLANT
8 MGD EXPANSION & IMPROVEMENTS

RAW WATER BLENDING STRUCTURE SECTIONS

CEI JOB NO.:
2135
GARVER JOB NO.:
19W01300
DRAWING NUMBER
10-S301
SHEET
NUMBER **068**



SECTION - TYPICAL
10-P101 | 10 - P301 SCALE: 1/8" = 1'-0"



THIS LINE MEASURES 1"
WHEN PLOTTED



CRIST ENGINEERS, INC.
CONSULTING ENGINEERS
1 E. ROUTE 100
LITTLE ROCK, ARKANSAS 72211
TELEPHONE: (501) 664-1502
FAX: (501) 664-8879
WWW.CRISTENGINEERS.COM

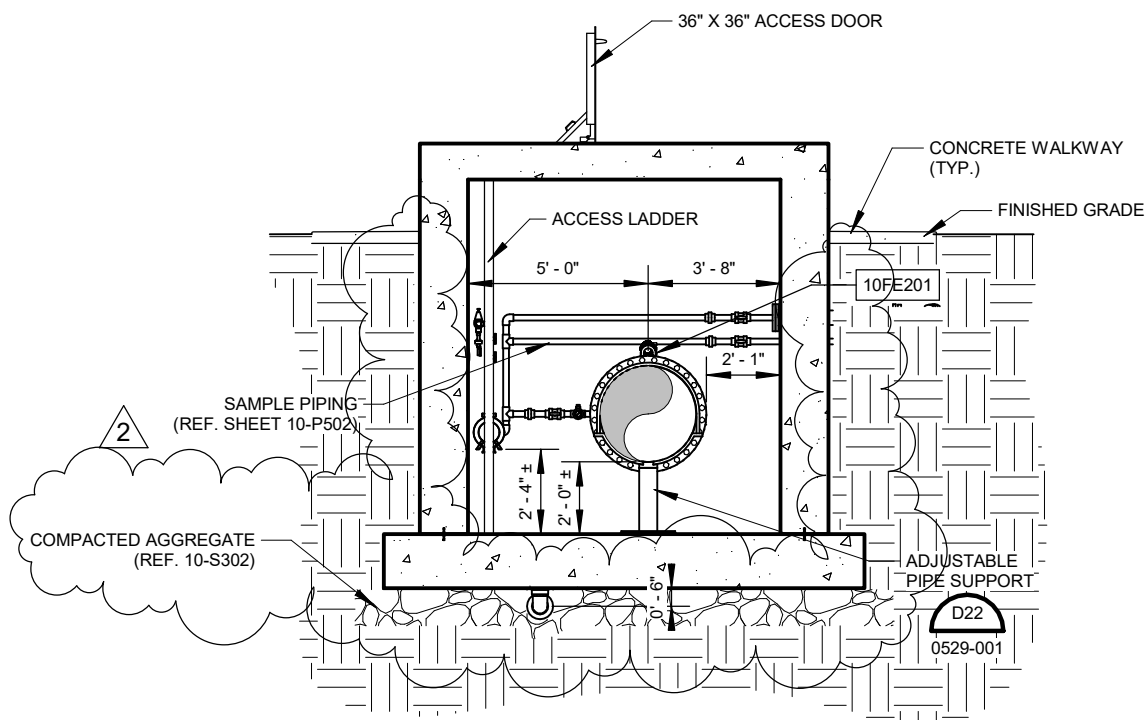


GARVER
4701 NORTHSHORE DR.
NORTH LITTLE ROCK, ARKANSAS 72118
TELEPHONE: (501) 372-3633
FAX: (501) 372-8042
WWW.GARVERUSA.COM

CONWAY CORPORATION
**ROGER Q MILLS JR. WATER TREATMENT PLANT
8 MGD EXPANSION & IMPROVEMENTS**

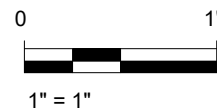
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DESIGNED: CAJ	CRIST JOB NO. 2135	DATE: 05/28/24	ADD. NO. 2
DRAFTED: KEG	GARVER JOB NO. 19W01300	SCALE: 1/8" = 1'-0"	REF SHEET 10-P301
CHECKED: CAJ			



SECTION B - VAULT (TYP.)

10-P102 | 10 - P303 SCALE: 3/16" = 1'-0"



THIS LINE MEASURES 1" WHEN PLOTTED

	CRIST ENGINEERS, INC. CONSULTING ENGINEERS 3 EXECUTIVE CENTER COURT LITTLE ROCK, ARKANSAS 72211 TELEPHONE: (501) 664-1552 FAX: (501) 664-8679 WWW.CRISTENGINEERS.COM		GARVER 4701 NORTHSIDE DR. NORTH LITTLE ROCK, ARKANSAS 72218 TELEPHONE: (501) 376-3633 FAX: (501) 372-8642 WWW.GARVERUSA.COM
CONWAY CORPORATION ROGER Q MILLS JR. WATER TREATMENT PLANT 8 MGD EXPANSION & IMPROVEMENTS RAW WATER METER VAULTS SECTIONS			
DESIGNED: CAJ	CRIST JOB NO. 2135	DATE: 05/28/24	ADD. NO. 2
DRAFTED: KEG	GARVER JOB NO. 19W01300	SCALE: 3/16" = 1'-0"	REF SHEET 10-P303
CHECKED: CAJ			



SCALE: 1/8" = 1'-0"



2
10-E102

SCALE: 1/8" = 1'-0"

1. REFER TO SHEET 08-1102 FOR MORE INFORMATION REGARDING METER VAULTS. CONTRACTOR SHALL FURNISH AND INSTALL ALL EQUIPMENT SHOWN FOR BOTH METER VAULTS, UNLESS NOTED OTHERWISE.
2. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL CONDUIT, WIRING, TERMINATIONS, DISCONNECTS, CONTROL RELAYS, CONTROL ENCLOSURES AND OTHER ITEMS AS NECESSARY FOR A COMPLETE AND FUNCTIONAL INSTALLATION. CONTRACTOR SHALL REFER TO THE SPECIFICATIONS AND OTHER SECTIONS OF THE PLANS FOR ITEMS AS MAY BE REQUIRED.
3. SOME CONDUIT RUNS OMITTED FOR CLARITY. COORDINATE ALL CONDUIT ROUTING OF SUPPLIED EQUIPMENT WITH ENGINEER PRIOR TO INSTALLATION.
4. CONDUIT ROUTING AS SHOWN IS DIAGRAMMATIC IN NATURE AND SHOWN FOR REFERENCE ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING NUMBER OF REQUIRED CONDUITS AND PLACEMENT OF THESE CONDUITS. THE CONTRACTOR SHALL DEVELOP AND SUBMIT A CONDUIT ROUTING PLAN FOR REVIEW PRIOR TO INSTALLATION.
5. SIGNAL AND CONTROL CONDUCTORS OF LIKE VOLTAGES MAY BE COMBINED IN A SINGLE CONDUIT. MULTI-CONDUCTOR CONTROL AND SIGNAL CABLE MAY BE SUBSTITUTED FOR INDIVIDUAL CONDUCTORS.
6. VERIFY LOCATIONS OF ALL EQUIPMENT PRIOR TO INSTALLATION.

[illegible]

Digitally Signed 05/17/2024



DESIGNED BY:	LCB
DRAWN BY:	GBA
CHECKED BY:	JCV
DATE:	MAY 2024



4701 NORTHSORE DR.
NORTH LITTLE ROCK, ARKANSAS 72118
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CONWAY CORPORATION

ROGER Q MILLS JR. WATER TREATMENT PLANT

8 MGD EXPANSION & IMPROVEMENTS

ADDENDUM NO. 02

RAW WATER BLENDING STRUCTURE - NORTH METER VAULT POWER
PLAN

CEI JOB NO.:
2135
GARVER JOB NO.:
19W01300
DRAWING NUMBER
10-E102
SHEET
NUMBER **088**

2

CONDUIT #	DESCRIPTION	SIZE	CONDUCTORS	TYPE	FROM EQUIPMENT	TO EQUIPMENT
10LP1-L1	10FIT101 SUPPLY	1"	2-#12, #12G	120VAC	10LP1	10FIT101
10LP1-L2	10FIT201 SUPPLY	1"	2-#12, #12G	120VAC	10LP1	10FIT201
10LP1-L3	NORTH METER VAULT RECEP.	1"	2-#12, #12G	120VAC	10LP1	NORTH METER REC.
10LP1-L4	SOUTH METER VAULT RECEP.	1"	2-#12, #12G	120VAC	10LP1	SOUTH METER REC.
10LP1-L5	RAW WATER STRUCTURE RECEPS	1"	2-#12, #12G	120VAC	10LP1	RAW WATER REC.
10LP1-L6	SAMPLE PUMP STARTER	1"	2-#10, #10G	120VAC	10LP1	10LCP001
10LP1-L7	HEAT TRACE CONTROLLER SUPPLY	1"	2-#12, #12G	120VAC	10LP1	HEAT TRACE CONTROLLER
10PSH001-C1	SAMPLE PUMP PRESSURE CONTROL	1"	2-#14, #14G	CONTROL	10PSH001	10LCP001
10LCP001-C1	SAMPLE PUMP LCP TO PLC	1"	2-#12, #12G	CONTROL	10LCP001	PLC72-10
10LCP001-L1	SAMPLE PUMP SUPPLY	1"	2-#10, #10G	120VAC	10LCP001	10PMP201

1

10-E601

FACILITY 10 CONDUIT SCHEDULE

SCALE: NONE

REV	DATE	DESCRIPTION	BY
2	05/17/24	ADD 02	

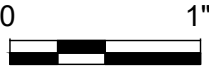


GARVER
LLC
No. 766



STATE OF ARKANSAS
* * *
LICENSED
PROFESSIONAL
ENGINEER
* * *
No. 22116
HUNTER WICK

Digitally Signed 05/17/2024



0 1"

1" = 1"

THIS LINE MEASURES 1"
WHEN PLOTTED FULL
SIZE

DESIGNED BY: DES

DRAWN BY: DRW

CHECKED BY: CHK

DATE: MAY 2024



CRIST ENGINEERS, INC.
CONSULTING ENGINEERS
1 EXECUTIVE CENTER COURT
LITTLE ROCK, ARKANSAS 72211
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4701 NORTHSHORE DR.
NORTH LITTLE ROCK, ARKANSAS 72118
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FAX: (501) 372-8042
WWW.GARVERUSA.COM

CONWAY CORPORATION

ROGER Q MILLS JR. WATER TREATMENT PLANT
8 MGD EXPANSION & IMPROVEMENTS

ADDENDUM NO. 02

RAW WATER BLENDING STRUCTURE ELECTRICAL SCHEDULES

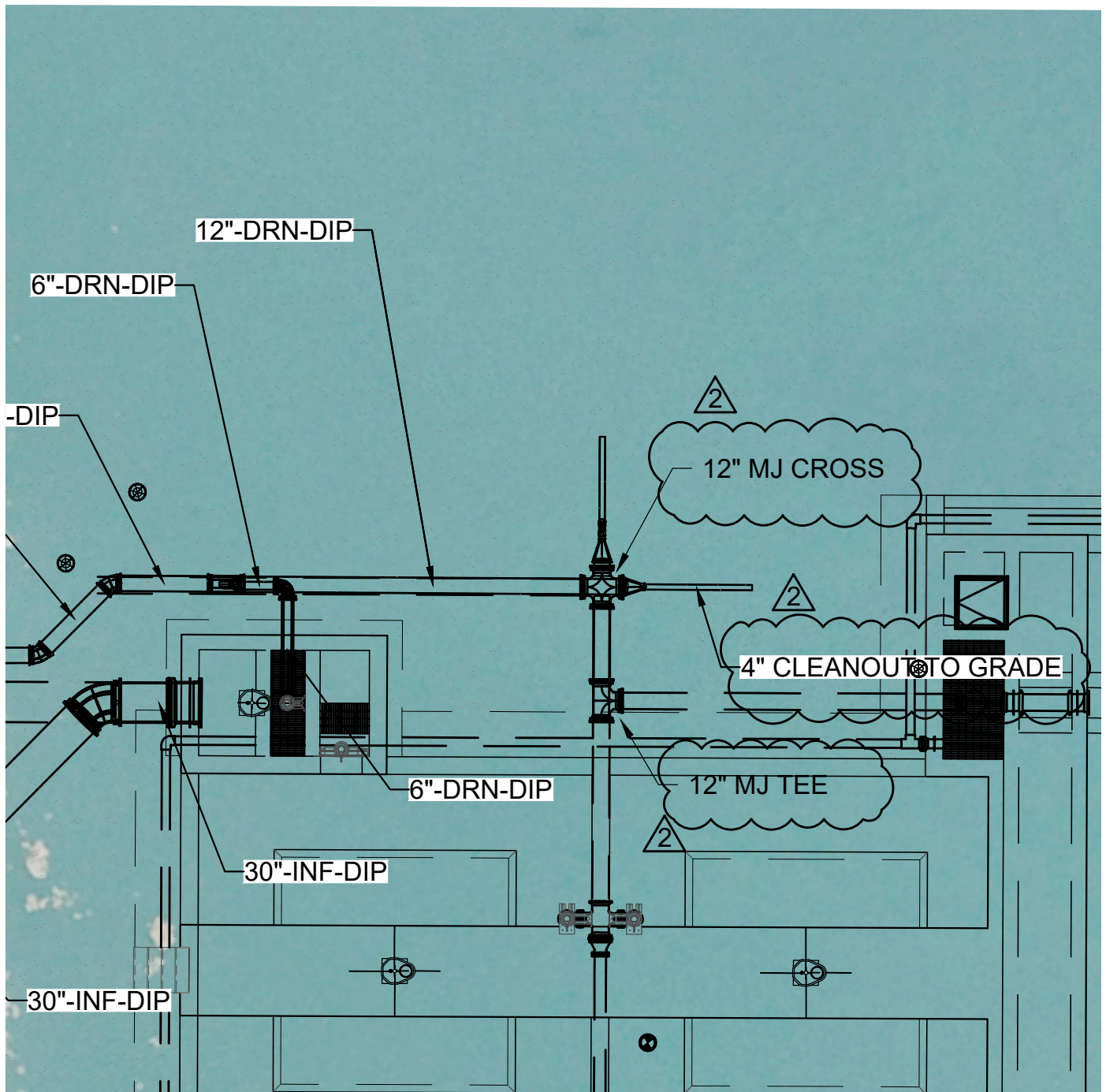
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GARVER JOB NO.: 19W01300

DRAWING NUMBER 10-E601

SHEET NUMBER 89

P:\2021 Projects\2135 - Conway Corporation RQM\WTP Design Memorandum\06 - CADD\02 - Civil\2135 - 3d yard piping.dwg



FLOCC INFLUENT AND DRAIN

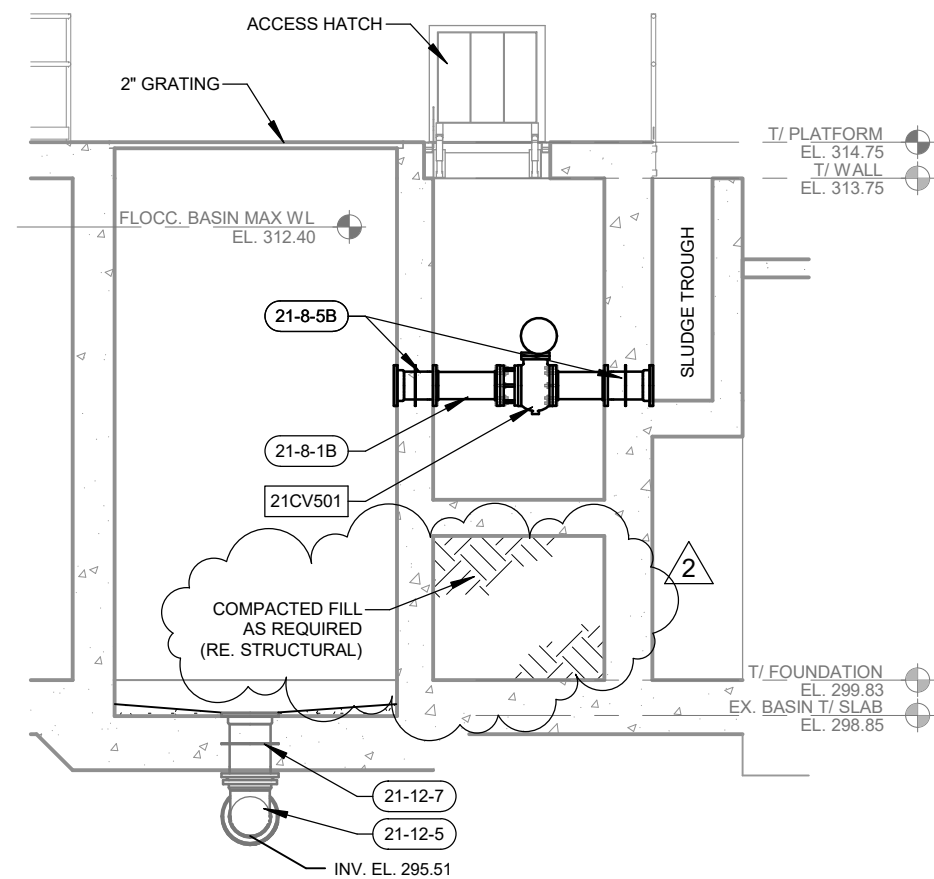
PLAN

SCALE = #####

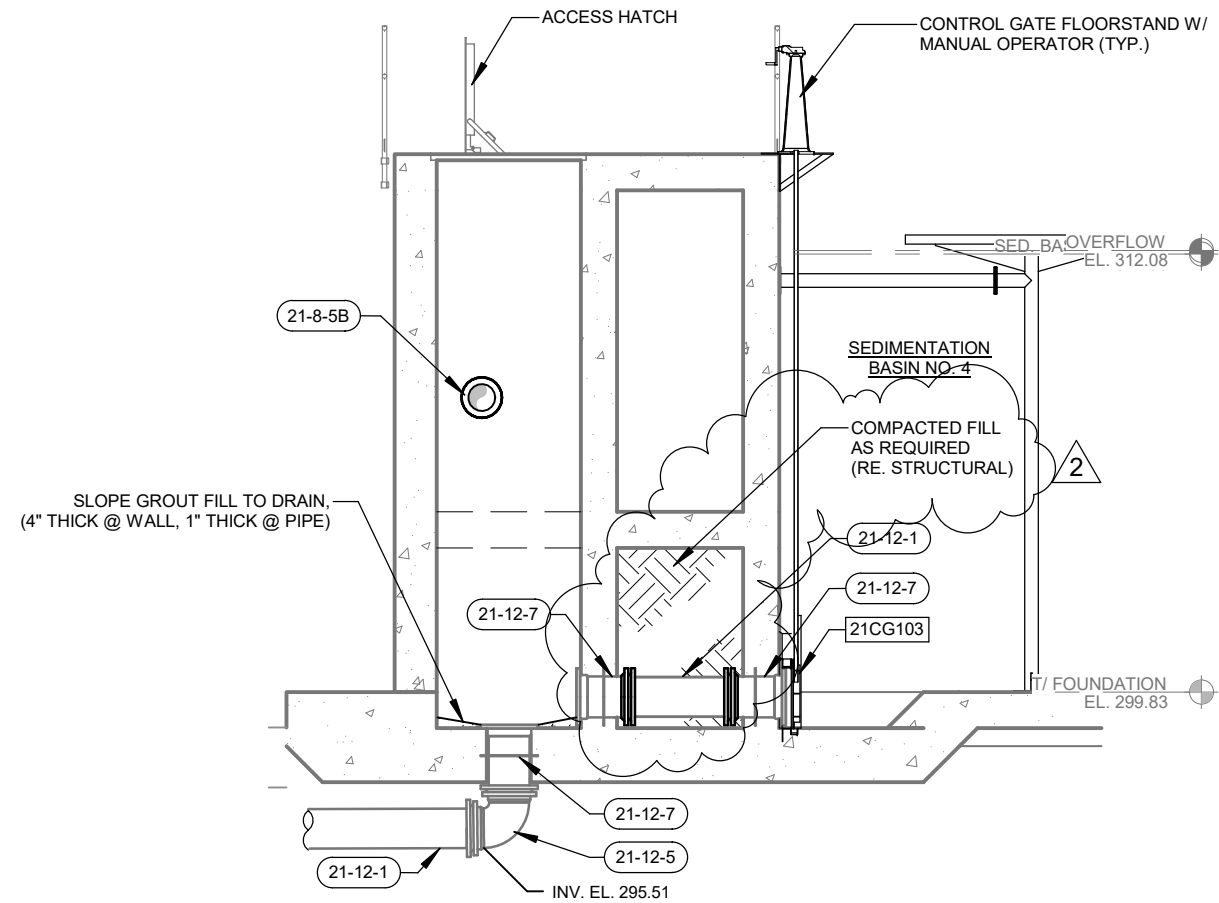


1" = 1"

		CRIST ENGINEERS, INC. CONSULTING ENGINEERS 1 EXECUTIVE CENTER COURT LITTLE ROCK, ARKANSAS 72211 TELEPHONE: (501) 664-5552 WWW.CRISTENGINEERS.COM				GARVER 4701 NORTHSORE DRIVE NORTH LITTLE ROCK, ARKANSAS 72118 TELEPHONE: (501) 376-3633 WWW.GARVERUSA.COM	
CONWAY CORPORATION							
ROGER Q. MILLS JR. WATER TREATMENT PLANT							
8 MGD EXPANSION & IMPROVEMENTS							
NEW PLANT FLOCCULATION PIPING PLAN AND PROFILE							
DESIGNED: CAJ	CRIST JOB NO. 2135	DATE	ADD. NO.				
DRAFTED: MAB	GARVER JOB NO. 19W01300	5/28/24	2				
CHECKED: CAJ	SCALE:	NOT TO SCALE		REF SHEET			
				21-C300			



2 SECTION - SLUDGE COLLECTION BASIN A
21-P304 SCALE: 3/16" = 1'-0"



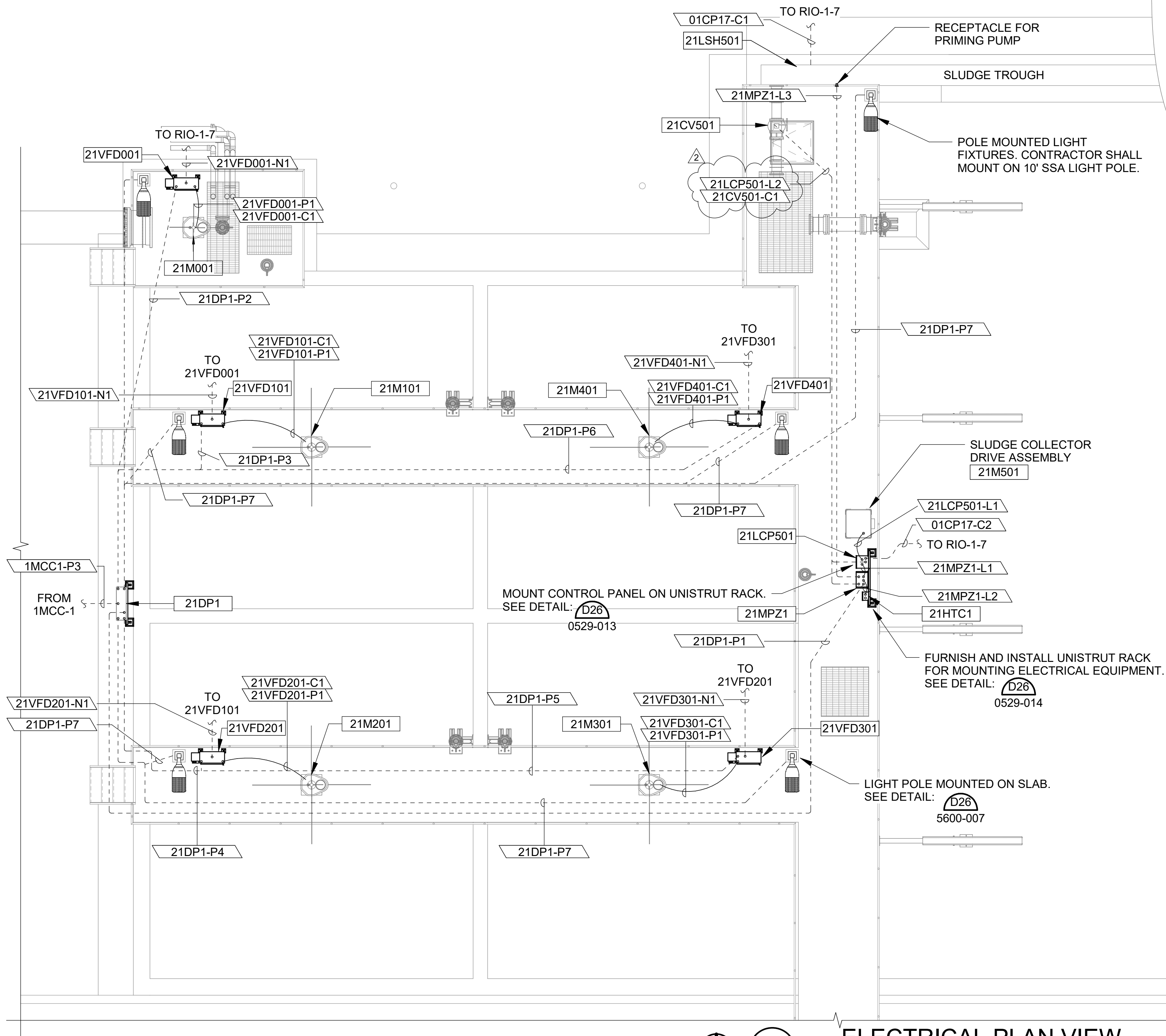
3 SECTION - SLUDGE COLLECTION BASIN B
21-P304 SCALE: 3/16" = 1'-0"



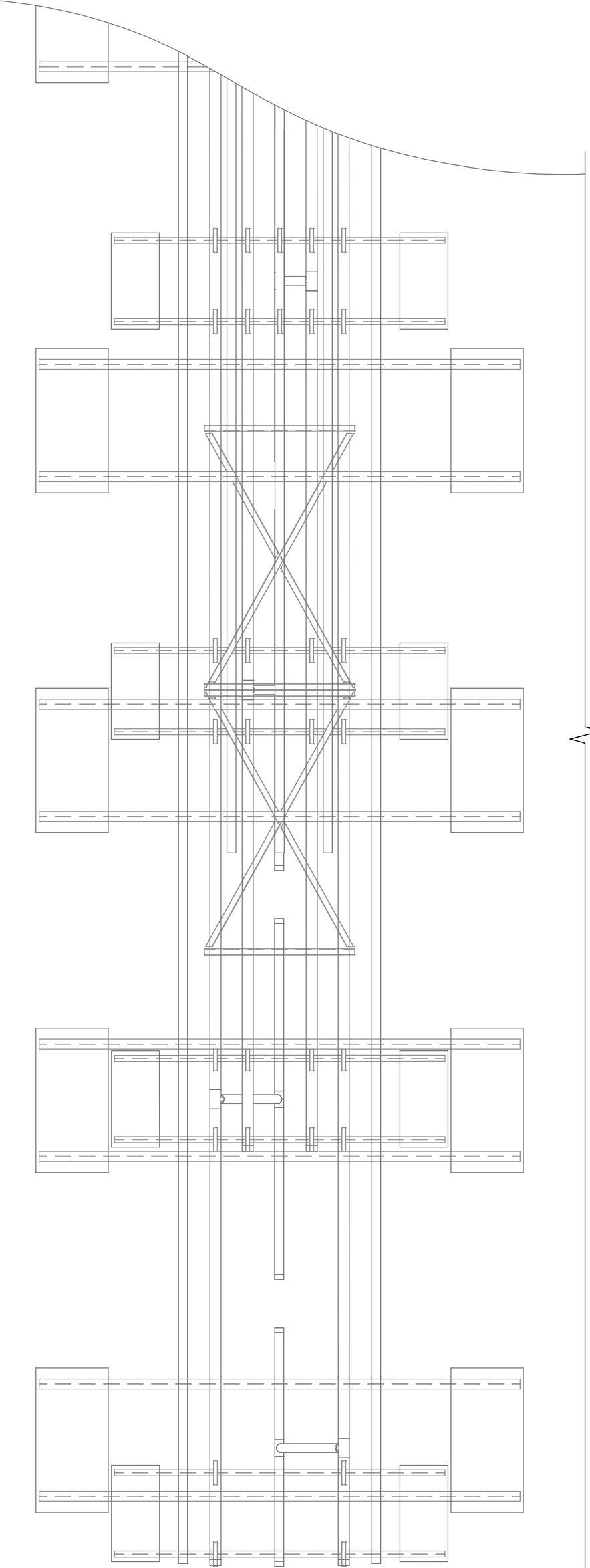
1" = 1"
THIS LINE MEASURES 1"
WHEN PLOTTED

	CRIST ENGINEERS, INC. CONSULTING ENGINEERS 1 EXECUTIVE CENTER COURT LITTLE ROCK, ARKANSAS 72202 TELEPHONE: (501) 664-1552 FAX: (501) 664-8879 WWW.CRISTENGINEERS.COM		GARVER 4715 HORNSHORE DR. NORTH LITTLE ROCK, ARKANSAS 72218 TELEPHONE: (501) 579-3833 FAX: (501) 579-8842 WWW.GARVERUSA.COM
CONWAY CORPORATION ROGER Q MILLS JR. WATER TREATMENT PLANT 8 MGD EXPANSION & IMPROVEMENTS NEW PLANT SEDIMENTATION BASIN NO. 4 ENLARGED PLAN AND SECTIONS 2 SLUDGE COLLECTION BASIN			
DESIGNED: CAJ DRAFTED: KEG CHECKED: CAJ	CRIST JOB NO. 2135 GARVER JOB NO. 19W01300 SCALE: 3/16" = 1'-0"	DATE: 05/28/24 ADD. NO. 2 REF SHEET	21-P304

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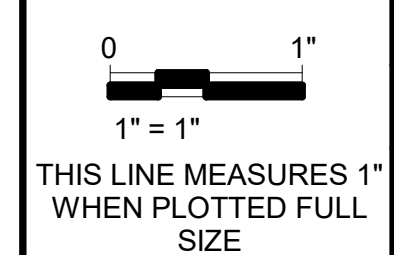
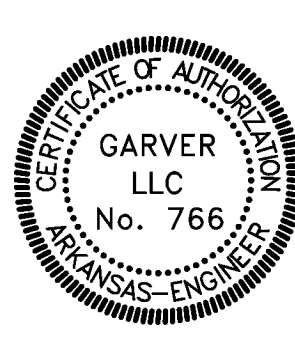


- GENERAL NOTES:**
1. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL CONDUIT, WIRING, TERMINATIONS, DISCONNECTS, CONTROL RELAYS, CONTROL ENCLOSURES AND OTHER ITEMS AS NECESSARY FOR A COMPLETE AND FUNCTIONAL INSTALLATION. CONTRACTOR SHALL REFER TO THE SPECIFICATIONS AND OTHER SECTIONS OF THE PLANS FOR ITEMS AS MAY BE REQUIRED.
 2. SOME CONDUIT RUNS OMITTED FOR CLARITY. COORDINATE ALL CONDUIT ROUTING OF SUPPLIED EQUIPMENT WITH ENGINEER PRIOR TO INSTALLATION.
 3. CONDUIT ROUTING AS SHOWN IS DIAGRAMMATIC IN NATURE AND SHOWN FOR REFERENCE ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING NUMBER OF REQUIRED CONDUITS AND PLACEMENT OF THESE CONDUITS. THE CONTRACTOR SHALL DEVELOP AND SUBMIT A CONDUIT ROUTING PLAN FOR REVIEW PRIOR TO INSTALLATION.
 4. SIGNAL AND CONTROL CONDUCTORS OF LIKE VOLTAGES MAY BE COMBINED IN A SINGLE CONDUIT. MULTI-CONDUCTOR CONTROL AND SIGNAL CABLE MAY BE SUBSTITUTED FOR INDIVIDUAL CONDUCTORS.
 5. VERIFY LOCATIONS OF ALL EQUIPMENT PRIOR TO INSTALLATION.



ELECTRICAL PLAN VIEW
SCALE: 3/16" = 1'-0"
PROJECT NORTH
1
21-E101

REV	DATE	DESCRIPTION	BY
2	05/17/24	ADD 02	



DESIGNED BY: HGW
DRAWN BY: LCB
CHECKED BY: JCW
DATE: MAY 2024

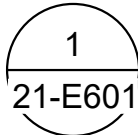


CONWAY CORPORATION
ROGER Q MILLS JR. WATER TREATMENT PLANT
8 MGD EXPANSION & IMPROVEMENTS
ADDENDUM NO. 02
NEW PLANT RAPID MIX/FLOCCULATION/SEDIMENTATION ELECTRICAL POWER PLAN 1

CEI JOB NO.: 2135
GARVER JOB NO.: 19W01300
DRAWING NUMBER
21-E101
SHEET NUMBER **139**

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Last Plotted by: Hawes, Ryan H., Plot Style: 12-3849 Plot Date: 5/17/2024 2:28 PM, Plotter used: None

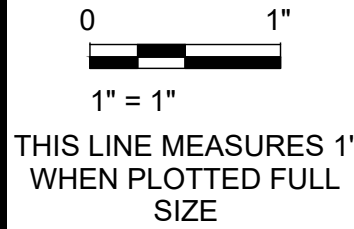
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	21DP1-P2	RAPID MIXER VFD	1"	3-#8, #10G	480VAC	21DP1	21VFD001
	21DP1-P3	FLOC. BASIN 2A VFD	1"	3-#12, #12G	480VAC	21DP1	21VFD101
	21DP1-P4	FLOC. BASIN 2B VFD	1"	3-#12, #12G	480VAC	21DP1	21VFD201
	21DP1-P5	FLOC. BASIN 2C VFD	1"	3-#12, #12G	480VAC	21DP1	21VFD301
	21DP1-P6	FLOC. BASIN 2D VFD	1"	3-#12, #12G	480VAC	21DP1	21VFD401
	21DP1-P7	FLOC. BASIN LIGHTING	1"	2-#12, #12G	277VAC	21DP1	FLOC. BASIN
	21LCP501-L1	SLUDGE COLLECTION DRIVE	1"	2-#12, #12G	120VAC	21LCP501	21M501
	21LCP501-L2	SLUDGE TROUGH MOV	1"	2-#12, #12G	120VAC	21LCP501	21CV501
	21CV501-C1	SLUDGE TROUGH MOV CONTROL	1"	12-#14, #14G	CONTROL	21CV501	21LCP501
	21MPZ1-L1	SLUDGE LCP SUPPLY	1"	2-#10, #10G	120VAC	21MPZ1	21LCP501
	21MPZ1-L2	HEAT TRACE CONTROLLER	1"	2-#12, #12G	120VAC	21MPZ1	21HTC1
	21MPZ1-L3	SLUDGE PRIMING PUMP RECEPTACLE	1"	2-#12, #12G	120VAC	21MPZ1	SLUDGE PRIMING REC.
	21VFD001-C1	RAPID MIXER TEMP HI	1"	2-#14, #14G	CONTROL	21VFD001	21TSH001
	21VFD001-P1	RAPID MIXER	1"	MANUF. SUPPLIED	480VAC	21VFD001	21M001
	21VFD101-C1	FLOC BASIN #2A TEMP HI	1"	2-#14, #14G	CONTROL	21VFD101	21TSH101
	21VFD101-N1	FLOC. #2A DEVICENET	1"	DEVICENET	DEVICENET	21VFD101	21VFD001
	21VFD101-P1	FLOC. BASIN #2A	1"	MANUF. SUPPLIED	480VAC	21VFD101	21M101
	21VFD201-C1	FLOC BASIN #2B TEMP HI	1"	2-#14, #14G	CONTROL	21VFD201	21TSH201
	21VFD201-N1	FLOC. #2B DEVICENET	1"	DEVICENET	DEVICENET	21VFD201	21VFD101
	21VFD201-P1	FLOC. BASIN #2B	1"	MANUF. SUPPLIED	480VAC	21VFD201	21M201
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	21VFD301-N1	FLOC. #2C DEVICENET	1"	DEVICENET	DEVICENET	21VFD301	21VFD201
	21VFD301-P1	FLOC. BASIN #2C	1"	MANUF. SUPPLIED	480VAC	21VFD301	21M301
	21VFD401-C1	FLOC BASIN #2D TEMP HI	1"	2-#14, #14G	CONTROL	21VFD401	21TSH401
	21VFD401-N1	FLOC. #2D DEVICENET	1"	DEVICENET	DEVICENET	21VFD401	21VFD301
	21VFD401-P1	FLOC. BASIN #2D	1"	MANUF. SUPPLIED	480VAC	21VFD401	21M401



FACILITY 21 CONDUIT SCHEDULE

SCALE: NONE

REV	DATE	DESCRIPTION	BY
2	05/17/24	ADD 02	



DESIGNED BY:	HGW
DRAWN BY:	ECB
CHECKED BY:	JCW
DATE:	MAY 2024



CONWAY CORPORATION

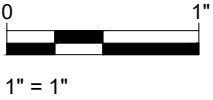
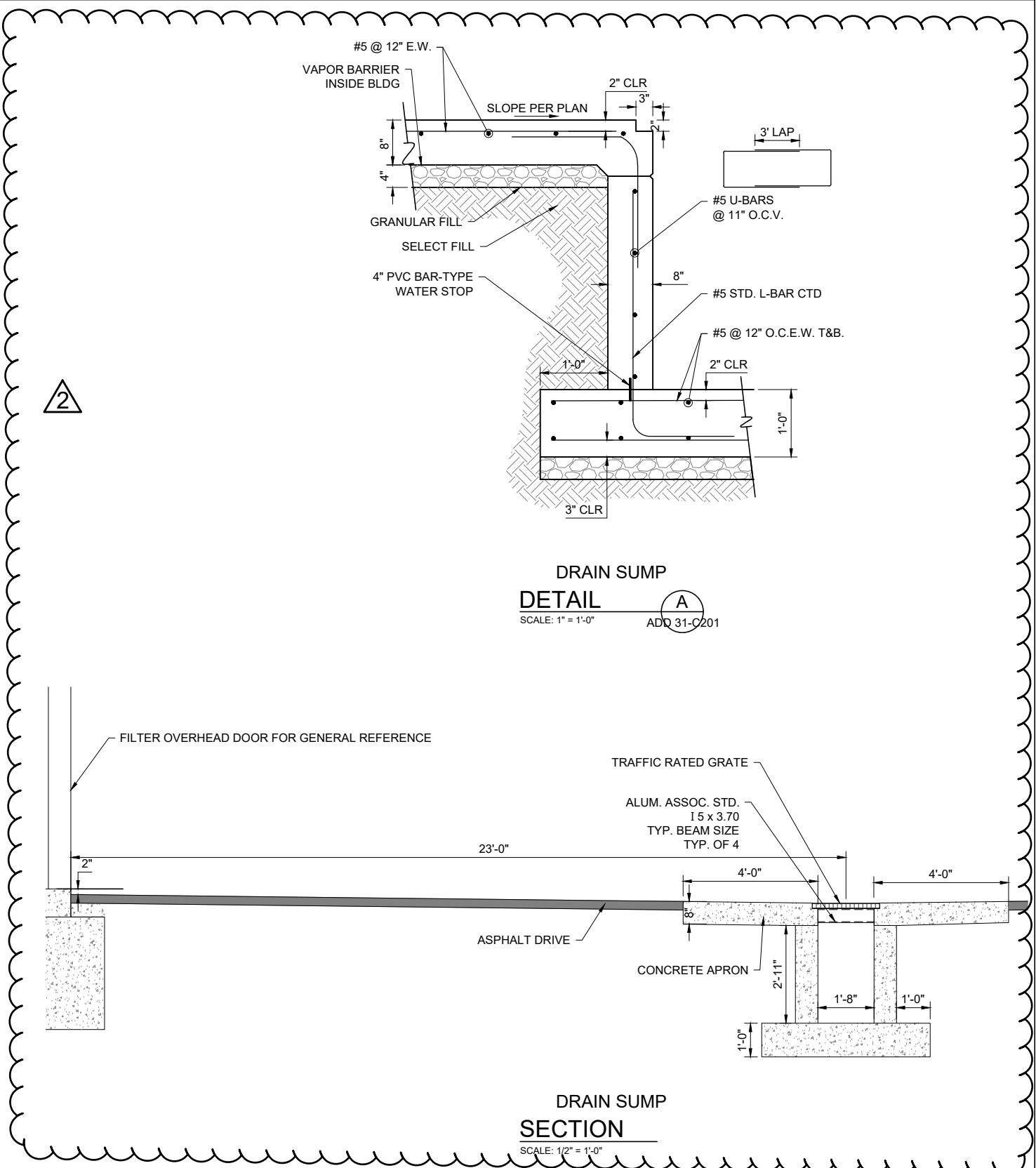
ROGER Q MILLS JR. WATER TREATMENT PLANT
8 MGD EXPANSION & IMPROVEMENTS

ADDENDUM NO. 02

NEW PLANT RAPID MIX/FLOCC./SEDIMENTATION ELEC. CONDUIT SCHEDULE

CEI JOB NO.:	2135
GARVER JOB NO.:	19W01300
DRAWING NUMBER	21-E601
SHEET NUMBER	140

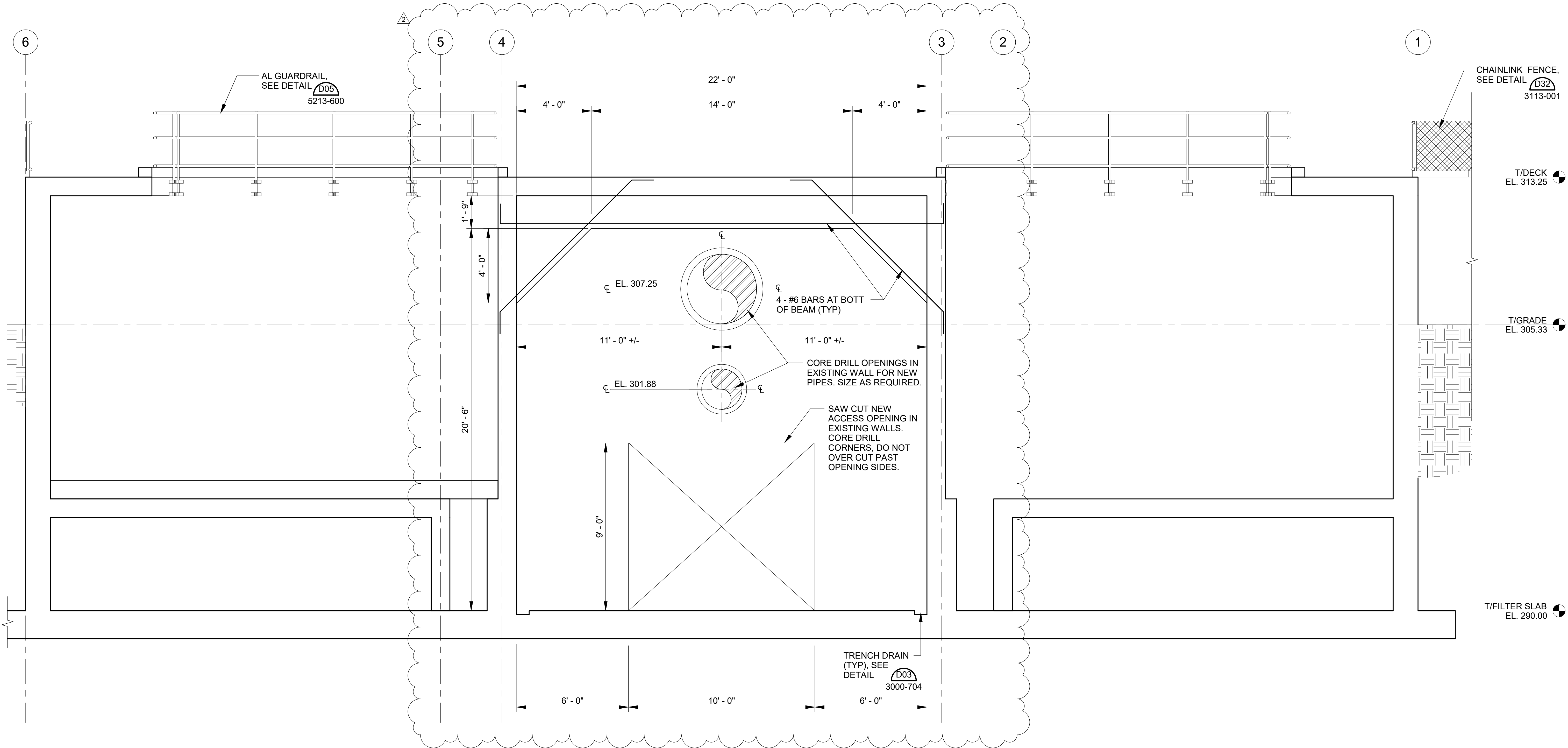
P:\2021 Projects\2135 - Conway Corporation RQM\WTP Design Memorandum\06 - CADD\02 - Civil\2135 - 3d yard piping.dwg



THIS DRAWING IS
REDUCED TO 1/2 SCALE

	CRIST ENGINEERS, INC. CONSULTING ENGINEERS 1 EXECUTIVE CENTER COURT LITTLE ROCK, ARKANSAS 72211 TELEPHONE - (501) 664-1552 WWW.CRISTENGINEERS.COM		GARVER 4701 NORTHSORE DRIVE NORTH LITTLE ROCK, ARKANSAS 72218 TELEPHONE - (501) 376-3653 WWW.GARVERUSA.COM
CONWAY CORPORATION			
ROGER Q. MILLS JR. WATER TREATMENT PLANT			
8 MGD EXPANSION & IMPROVEMENTS			
FILTER BUILDING 2 DRIVE DRAIN PLAN AND PROFILE			
DESIGNED: CAJ	CRIST JOB NO. 2135	DATE	ADD. NO. 2
DRAFTED: MAB	GARVER JOB NO. 19W01300	5/23/24	
CHECKED: CAJ	SCALE: NOT TO SCALE	REF SHEET	31-C201

Revit File: AutodesK Docs\\19\\W01300 - Conway Corp WTP Improvements\\CCWTP_31_NEW PLANT FILTER BUILDING #2_FILTERS 1-8.rvt
Plot Date: 5/15/2024 11:27:05 AM



SECTION
31-S101 | 31-S304 SCALE: 3/8" = 1'-0"

REV	DATE	DESCRIPTION	BY
2	05/17/24	ADD 02	



Digitally Signed 05/16/2024

0 1"
1" = 1"
THIS LINE MEASURES 1"
WHEN PLOTTED FULL
SIZE

DESIGNED BY:	HWE
DRAWN BY:	GBA
CHECKED BY:	KAM
DATE:	MAY 2024



CRIST ENGINEERS, INC.
CONSULTING ENGINEERS
1 EXECUTIVE CENTER COURT
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CONWAY CORPORATION
ROGER Q MILLS JR. WATER TREATMENT PLANT
8 MGD EXPANSION & IMPROVEMENTS

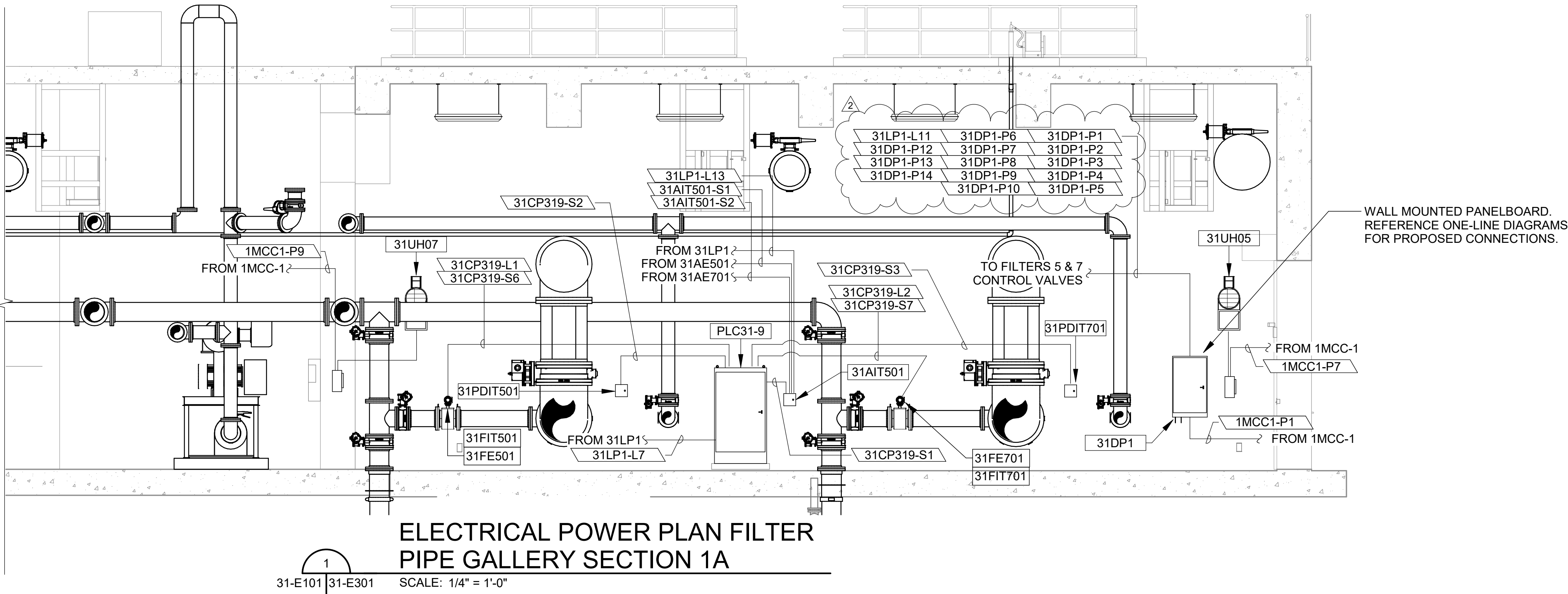
ADDENDUM NO. 02

NEW PLANT FILTER BUILDING #2 SECTIONS 4

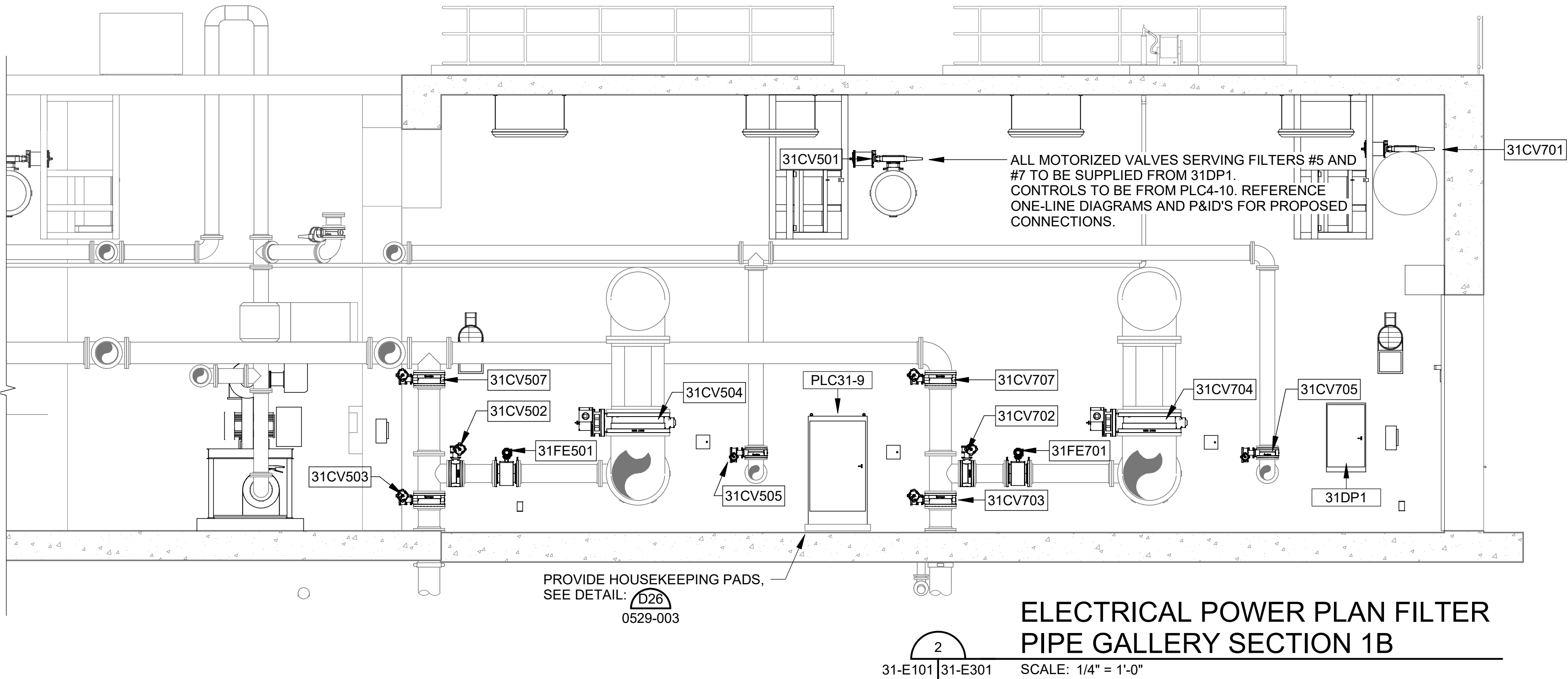
CEI JOB NO.: 2135
GARVER JOB NO.: 19W01300
DRAWING NUMBER 31-S304
SHEET NUMBER 163

GENERAL NOTES:

1. ELECTRICAL CONDUIT ROUTING NOT SHOWN TO PRESERVE DRAWING CLARITY. REFERENCE ONE-LINE DIAGRAMS AND P&ID'S FOR PROPOSED CONNECTIONS.

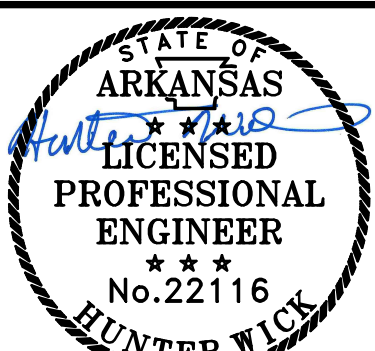
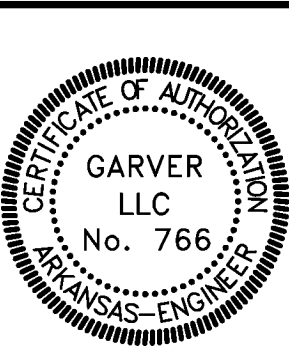


ELECTRICAL POWER PLAN FILTER
PIPE GALLERY SECTION 1A



ELECTRICAL POWER PLAN FILTER
PIPE GALLERY SECTION 1B

REV	DATE	DESCRIPTION	BY
2	05/17/24	ADD 02	



0 1"
1" = 1"
THIS LINE MEASURES 1"
WHEN PLOTTED FULL
SIZE

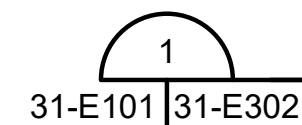
DESIGNED BY: HGW
DRAWN BY: GBA
CHECKED BY: JCW
DATE: MAY 2024



CONWAY CORPORATION
ROGER Q MILLS JR. WATER TREATMENT PLANT
8 MGD EXPANSION & IMPROVEMENTS
ADDENDUM NO. 02
NEW PLANT FILTER BUILDING #2 ELECTRICAL POWER PLAN SECTION 1

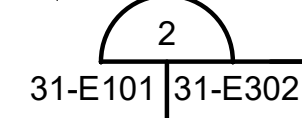
CEI JOB NO.: 2135
GARVER JOB NO.: 19W01300
DRAWING NUMBER
31-E301
SHEET NUMBER **186**

1. ALL ELECTRICAL CONDUIT ROUTING NOT SHOWN TO PRESERVE DRAWING CLARITY. REFERENCE ONE-LINE DIAGRAMS AND P&ID'S FOR PROPOSED CONNECTIONS.



ELECTRICAL POWER PLAN FILTER PIPE GALLERY SECTION 2A

SCALE: 1/4" = 1'-0"



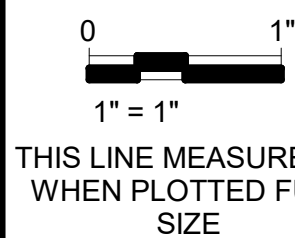
ELECTRICAL POWER PLAN FILTER PIPE GALLERY SECTION 2B

SCALE: 1/4" = 1'-0"

REV	DATE	DESCRIPTION	BY
2	05/17/24	ADD 02	



Digitally Signed 05/17/2024



THIS LINE MEASURES 1"
WHEN PLOTTED FULL
SIZE

DESIGNED BY:	HGW
DRAWN BY:	GBA
CHECKED BY:	JCW
DATE:	MAY 2024



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ROGER Q MILLS JR. WATER TREATMENT PLANT
8 MGD EXPANSION & IMPROVEMENTS

ADDENDUM NO. 02

NEW PLANT FILTER BUILDING #2 ELECTRICAL POWER PLAN SECTION 2

CEI JOB NO.:
2135
GARVER JOB NO.:
19W01300
DRAWING NUMBER
31-E302
SHEET
NUMBER **187**

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Last plotted by: Hawes, Ryan H Plot Date: 5/17/2024 2:21 PM Plotter used: None

2

CONDUIT #	DESCRIPTION	SIZE	CONDUCTORS	TYPE	FROM EQUIPMENT	TO EQUIPMENT
31CP318-N1	NEW FILTER 31CP31-8 NETWORK	1"	CAT6	NETWORK	31CP31-8	NETWORK RACK
31CP319-N1	NEW FILTER 31CP31-9 NETWORK	1"	CAT6	NETWORK	31CP31-9	NETWORK RACK
31AIT501-S1	FILTER #5 TURBIDITY SIGNAL	1"	1-PAIR STP	4-20MA	31AIT501	31AE501
31AIT501-S2	FILTER #7 TURBIDITY SIGNAL	1"	1-PAIR STP	4-20MA	31AIT501	31AE701
31AIT601-S1	FILTER #6 TURBIDITY SIGNAL	1"	1-PAIR STP	4-20MA	31AIT601	31AE601
31AIT601-S2	FILTER #8 TURBIDITY SIGNAL	1"	1-PAIR STP	4-20MA	31AIT601	31AE801
31CP318-C10	FILTER #6 MOV 7 CONTROL	1"	12-#14, #14G	CONTROL	31CP31-8	31CV607
31CP318-C11	FILTER #8 MOV 1 CONTROL	1"	12-#14, #14G	CONTROL	31CP31-8	31CV801
31CP318-C12	FILTER #8 MOV 3 CONTROL	1"	12-#14, #14G	CONTROL	31CP31-8	31CV803
31CP318-C13	FILTER #8 MOV 4 CONTROL	1"	12-#14, #14G	CONTROL	31CP31-8	31CV804
31CP318-C14	FILTER #8 MOV 5 CONTROL	1"	12-#14, #14G	CONTROL	31CP31-8	31CV805
31CP318-C15	FILTER #8 MOV 6 CONTROL	1"	12-#14, #14G	CONTROL	31CP31-8	31CV806
31CP318-C16	FILTER #8 MOV 7 CONTROL	1"	12-#14, #14G	CONTROL	31CP31-8	31CV807
31CP318-C17	FILTER #6 LEVEL TRANSMITTER ALARM	1"	2-#14, #14G	CONTROL	31CP31-8	31LIT601
31CP318-C18	FILTER #8 LEVEL TRANSMITTER ALARM	1"	2-#14, #14G	CONTROL	31CP31-8	31LIT801
31CP318-C3	FILTER #6 MOV 2 CONTROL	1"	8-#14, #14G	CONTROL	31CP31-8	31CV602
31CP318-C4	FILTER #8 MOV 2 CONTROL	1"	8-#14, #14G	CONTROL	31CP31-8	31CV802
31CP318-C5	FILTER #6 MOV 1 CONTROL	1"	12-#14, #14G	CONTROL	31CP31-8	31CV601
31CP318-C6	FILTER #6 MOV 3 CONTROL	1"	12-#14, #14G	CONTROL	31CP31-8	31CV603
31CP318-C7	FILTER #6 MOV 4 CONTROL	1"	12-#14, #14G	CONTROL	31CP31-8	31CV604
31CP318-C8	FILTER #6 MOV 5 CONTROL	1"	12-#14, #14G	CONTROL	31CP31-8	31CV605
31CP318-C9	FILTER #6 MOV 6 CONTROL	1"	12-#14, #14G	CONTROL	31CP31-8	31CV606
31CP318-S1	FILTER #6 AND FILTER #8 TURBIDITY SIGNAL	1"	2-PAIR STP	4-20MA	31CP31-8	31AIT601
31CP318-S2	FILTER #6 LOSS OF HEAD SIGNAL	1"	1-PAIR STP	4-20MA	31CP31-8	31PDIT601
31CP318-S3	FILTER #8 LOSS OF HEAD SIGNAL	1"	1-PAIR STP	4-20MA	31CP31-8	31PDIT801
31CP318-S4	FILTER #6 LEVEL TRANSMITTER SIGNAL	1"	1-PAIR STP	4-20MA	31CP31-8	31LIT601
31CP318-S5	FILTER #8 LEVEL TRANSMITTER SIGNAL	1"	1-PAIR STP	4-20MA	31CP31-8	31LIT801
31CP318-S6	FILTER #6 RATE OF FLOW SIGNAL	1"	1-PAIR STP	4-20MA	31CP31-8	31FIT601
31CP318-S7	FILTER #8 RATE OF FLOW SIGNAL	1"	1-PAIR STP	4-20MA	31CP31-8	31FIT801
31CP318-S8	FILTER #6 MOV 2 SIGNAL	1"	2-PAIR STP	4-20MA	31CP31-8	31CV602
31CP318-S9	FILTER #8 MOV 2 SIGNAL	1"	2-PAIR STP	4-20MA	31CP31-8	31CV802
31CP319-C10	FILTER #5 MOV 7 CONTROL	1"	12-#14, #14G	CONTROL	31CP31-9	31CV507
31CP319-C11	FILTER #7 MOV 1 CONTROL	1"	12-#14, #14G	CONTROL	31CP31-9	31CV701
31CP319-C12	FILTER #7 MOV 3 CONTROL	1"	12-#14, #14G	CONTROL	31CP31-9	31CV703
31CP319-C13	FILTER #7 MOV 4 CONTROL	1"	12-#14, #14G	CONTROL	31CP31-9	31CV704
31CP319-C14	FILTER #7 MOV 5 CONTROL	1"	12-#14, #14G	CONTROL	31CP31-9	31CV705
31CP319-C15	FILTER #7 MOV 6 CONTROL	1"	12-#14, #14G	CONTROL	31CP31-9	31CV706
31CP319-C16	FILTER #7 MOV 7 CONTROL	1"	12-#14, #14G	CONTROL	31CP31-9	31CV707
31CP319-C17	FILTER #5 LEVEL TRANSMITTER ALARM	1"	2-#14, #14G	CONTROL	31CP31-9	31LIT501
31CP319-C18	FILTER #7 LEVEL TRANSMITTER ALARM	1"	2-#14, #14G	CONTROL	31CP31-9	31LIT701
31CP319-C3	FILTER #5 MOV 2 CONTROL	1"	8-#14, #14G	CONTROL	31CP31-9	31CV502
31CP319-C4	FILTER #7 MOV 2 CONTROL	1"	8-#14, #14G	CONTROL	31CP31-9	31CV702
31CP319-C5	FILTER #5 MOV 1 CONTROL	1"	12-#14, #14G	CONTROL	31CP31-9	31CV501
31CP319-C6	FILTER #5 MOV 3 CONTROL	1"	12-#14, #14G	CONTROL	31CP31-9	31CV503
31CP319-C7	FILTER #5 MOV 4 CONTROL	1"	12-#14, #14G	CONTROL	31CP31-9	31CV504
31CP319-C8	FILTER #5 MOV 5 CONTROL	1"	12-#14, #14G	CONTROL	31CP31-9	31CV505
31CP319-C9	FILTER #5 MOV 6 CONTROL	1"	12-#14, #14G	CONTROL	31CP31-9	31CV506
31CP319-S1	FILTER #5 AND FILTER #7 TURBIDITY SIGNAL	1"	2-PAIR STP	4-20MA	31CP31-9	31AIT501
31CP319-S2	FILTER #5 LOSS OF HEAD SIGNAL	1"	1-PAIR STP	4-20MA	31CP31-9	31PDIT501
31CP319-S3	FILTER #7 LOSS OF HEAD SIGNAL	1"	1-PAIR STP	4-20MA	31CP31-9	31PDIT701
31CP319-S4	FILTER #5 LEVEL TRANSMITTER SIGNAL	1"	1-PAIR STP	4-20MA	31CP31-9	31LIT501
31CP319-S5	FILTER #7 LEVEL TRANSMITTER SIGNAL	1"	1-PAIR STP	4-20MA	31CP31-9	31LIT701
31CP319-S6	FILTER #5 RATE OF FLOW SIGNAL	1"	1-PAIR STP	4-20MA	31CP31-9	31FIT501

31CP319-S7	FILTER #7 RATE OF FLOW SIGNAL	1"	1-PAIR STP	4-20MA	31CP31-9	31FIT701
31CP319-S8	FILTER #5 MOV 2 SIGNAL	1"	2-PAIR STP	4-20MA	31CP31-9	31CV502
31CP319-S9	FILTER #7 MOV 2 SIGNAL	1"	2-PAIR STP	4-20MA	31CP31-9	31CV702
31DP1-P1	FILTER #5 INFLUENT MOV	1"	3-#12, #12G	480VAC	31DP1	31CV501
31DP1-P10	FILTER #7 EFFLUENT MOV	1"	3-#12, #12G	480VAC	31DP1	31CV703
31DP1-P11	FILTER #7 WASTE MOV	1"	3-#12, #12G	480VAC	31DP1	31CV707
31DP1-P12	FILTER #7 BACKWASH DRAIN MOV	1"	3-#12, #12G	480VAC	31DP1	31CV706
31DP1-P13	FILTER #7 AIRWASH MOV	1"	3-#12, #12G	480VAC	31DP1	31CV705
31DP1-P14	FILTER #7 RATE OF FLOW MOV	1"	3-#12, #12G	480VAC	31DP1	31CV702
31DP1-P2	FILTER #5 BACKWASH SUPPLY MOV	1"	3-#12, #12G	480VAC	31DP1	31CV504
31DP1-P3	FILTER #5 EFFLUENT MOV	1"	3-#12, #12G	480VAC	31DP1	31CV503
31DP1-P4	FILTER #5 WASTE MOV	1"	3-#12, #12G	480VAC	31DP1	31CV507
31DP1-P5	FILTER #5 BACKWASH DRAIN MOV	1"	3-#12, #12G	480VAC	31DP1	31CV506
31DP1-P6	FILTER #5 AIRWASH MOV	1"	3-#12, #12G	480VAC	31DP1	31CV505
31DP1-P7	FILTER #5 RATE OF FLOW MOV	1"	3-#12, #12G	480VAC	31DP1	31CV502
31DP1-P8	FILTER #7 INFLUENT MOV	1"	3-#12, #12G	480VAC	31DP1	31CV701
31DP1-P9	FILTER #7 BACKWASH SUPPLY MOV	1"	3-#12, #12G	480VAC	31DP1	31CV704
31DP2-P1	FILTER #6 INFLUENT MOV	1"	3-#12, #12G	480VAC	31DP2	31CV601
31DP2-P10	FILTER #8 EFFLUENT MOV	1"	3-#12, #12G	480VAC	31DP2	31CV803
31DP2-P11	FILTER #8 WASTE MOV	1"	3-#12, #12G	480VAC	31DP2	31CV807
31DP2-P12	FILTER #8 BACKWASH DRAIN MOV	1"	3-#12, #12G	480VAC	31DP2	31CV806
31DP2-P13	FILTER #8 AIRWASH MOV	1"	3-#12, #12G	480VAC	31DP2	31CV805
31DP2-P14	FILTER #8 RATE OF FLOW MOV	1"	3-#12, #12G	480VAC	31DP2	31CV802
31DP2-P2	FILTER #6 BACKWASH SUPPLY MOV	1"	3-#12, #12G	480VAC	31DP2	31CV604
31DP2-P3	FILTER #6 EFFLUENT MOV	1"	3-#12, #12G	480VAC	31DP2	31CV603
31DP2-P4	FILTER #6 WASTE MOV	1"	3-#12, #12G	480VAC	31DP2	31CV607
31DP2-P5	FILTER #6 BACKWASH DRAIN MOV	1"	3-#12, #12G	480VAC	31DP2	31CV606
31DP2-P6	FILTER #6 AIRWASH MOV	1"	3-#12, #12G	480VAC	31DP2	31CV605
31DP2-P7	FILTER #6 RATE OF FLOW MOV	1"	3-#12, #12G	480VAC	31DP2	31CV602
31DP2-P8	FILTER #8 INFLUENT MOV	1"	3-#12, #12G	480VAC	31DP2	31CV801
31DP2-P9	FILTER #8 BACKWASH SUPPLY MOV	1"	3-#12, #12G	480VAC	31DP2	31CV804
31LP1-L1	FILTER GALLERY LIGHTS	3/4"	2-#12, #12G	120VAC	31LP1	NEW FILTER GALLERY LTG
31LP1-L2	FILTER GALLERY RECEPTACLES	3/4"	2-#12, #12G	120VAC	31LP1	NEW FILTER GALLERY REC.
31LP1-L3	FILTER OUTDOOR WALL LIGHTING	3/4"	2-#12, #12G	120VAC	31LP1	NEW FILTER EXT LTG
31LP1-L4	FILTER EMERGENCY LIGHTING	3/4"	2-#12, #12G	120VAC	31LP1	NEW FILTER GALLERY EMG.
31LP1-L5	FILTER POLE LIGHTS	1"	2-#12, #12G	120VAC	31LP1	NEW FILTER POLE LTG
31LP1-L6	PLC31-8 SUPPLY	3/4"	2-#12, #12G	120VAC	31LP1	PLC31-8
31LP1-L7	PLC31-9 SUPPLY	3/4"	2-#12, #12G	120VAC	31LP1	PLC31-9
31LP1-L8	ROLL UP DOOR ACTUATOR	3/4"	2-#12, #12G	120VAC	31LP1	NEW FILTER BAY DOOR
31LP1-L9	LEVEL TRANSMITTER SUPPLY	3/4"	2-#12, #12G	120VAC	31LP1	31LIT601
31LP1-L10	LEVEL TRANSMITTER SUPPLY	3/4"	2-#12, #12G	120VAC	31LP1	31LIT501
31LP1-L11	LEVEL TRANSMITTER SUPPLY	3/4"	2-#12, #12G	120VAC	31LP1	31LIT801
31LP1-L12	LEVEL TRANSMITTER SUPPLY	3/4"	2-#12, #12G	120VAC	31LP1	31LIT701
31LP1-L13	TURBIDIMETER #1 SUPPLY	3/4"	2-#12, #12G	120VAC	31LP1	31AIT501
31LP1-L14	TURBIDIMETER #2 SUPPLY	3/4"	2-#12, #12G	120VAC	31LP1	31AIT601
31CP318-L1	FILTER #6 MAGNETIC FLOW METER SUPPLY	3/4"	2-#12, #12G	120VAC	31CP31-8	31FIT601
31CP318-L2	FILTER #8 MAGNETIC FLOW METER SUPPLY	3/4"	2-#12, #12G	120VAC	31CP31-8	31FIT801
31CP319-L1	FILTER #5 MAGNETIC FLOW METER SUPPLY	3/4"	2-#12, #12G	120VAC	31CP31-9	31FIT501
31CP319-L2	FILTER #7 MAGNETIC FLOW METER SUPPLY	3/4"	2-#12, #12G	120VAC	31CP31-9	31FIT701
31LIT501-S1	FILTER #5 LEVEL ELEMENT	1"	1-PAIR STP	4-20MA	31LIT501	31LE501
31LIT601-S1	FILTER #6 LEVEL ELEMENT	1"	1-PAIR STP	4-20MA	31LIT601	31LE601
31LIT701-S1	FILTER #7 LEVEL ELEMENT	1"	1-PAIR STP	4-20MA	31LIT701	31LE701
31LIT801-S1	FILTER #8 LEVEL ELEMENT	1"	1-PAIR STP	4-20MA	31LIT801	31LE801

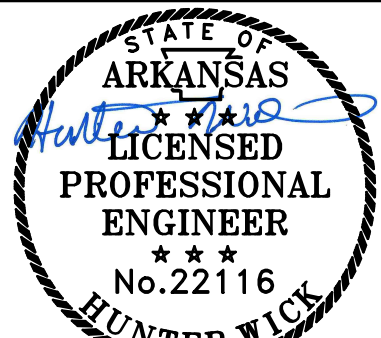
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31-E601

FACILITY 31 CONDUIT SCHEDULE

SCALE: NONE

0 1"
1" = 1"

THIS LINE MEASURES 1"
WHEN PLOTTED FULL
SIZE



Digitally Signed 05/17/2024

DESIGNED BY: HGW
DRAWN BY: ECB
CHECKED BY: JCW
DATE: MAY 2024



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CONWAY CORPORATION
ROGER Q MILLS JR. WATER TREATMENT PLANT
8 MGD EXPANSION & IMPROVEMENTS

ADDENDUM NO. 02

NEW PLANT FILTER BUILDING #2 ELECTRICAL CONDUIT SCHEDULE

CEI JOB NO.: 2135
GARVER JOB NO.: 19W01300
DRAWING NUMBER
31-E601
SHEET NUMBER
191

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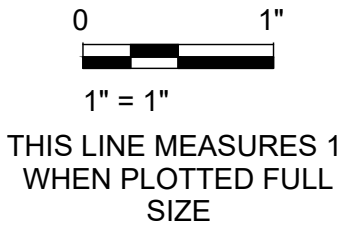
CONDUIT #	DESCRIPTION	SIZE	CONDUCTORS	TYPE	FROM EQUIPMENT	TO EQUIPMENT
5LP1-L1	CHEMICAL ROOM FAN SUPPLY	1"	2-#12, #12G	120VAC	5LP1	60EF01
5MCC1-P1	HIGH SERVICE PUMP #6 EFFLUENT MOV	1"	3-#12, #12G	480VAC	5MCC-1	60CV6
5MCC1-P2	ELECTRICAL ROOM AC #1 SUPPLY	1"	3-#8, #10G	480VAC	5MCC-1	60AC01
5MCC1-P3 (1)	HIGH SERVICE PUMP #6 VFD SUPPLY (SET 1)	CABLE TRAY	3-#300, #4G	480VAC	5MCC-1	60VFD6
5MCC1-P3 (2)	HIGH SERVICE PUMP #6 VFD SUPPLY (SET 2)	CABLE TRAY	3-#300, #4G	480VAC	5MCC-1	60VFD6
5MCC1-P3 (3)	HIGH SERVICE PUMP #6 VFD SUPPLY (SET 3)	CABLE TRAY	3-#300, #4G	480VAC	5MCC-1	60VFD6
5MCC2-P1 (1)	HIGH SERVICE PUMP #4 VFD SUPPLY (SET 1)	CABLE TRAY	3-#300, #4G	480VAC	5MCC-2	60VFD4
5MCC2-P1 (2)	HIGH SERVICE PUMP #4 VFD SUPPLY (SET 2)	CABLE TRAY	3-#300, #4G	480VAC	5MCC-2	60VFD4
5MCC2-P1 (3)	HIGH SERVICE PUMP #4 VFD SUPPLY (SET 3)	CABLE TRAY	3-#300, #4G	480VAC	5MCC-2	60VFD4
5MCC2-P2	ELECTRICAL ROOM AC #2 SUPPLY	1"	3-#8, #10G	480VAC	5MCC-2	60AC02
5MCC2-P3	ELECTRICAL ROOM TRANSFORMER SUPPLY	1"	2-#8, #10G	480VAC	5MCC-2	60TX1
60TX1-L1	ELECTRICAL ROOM LIGHTING PANEL SUPPLY	2"	3-#4, #8G	240VAC	60TX1	60LP1
60LP1-L1	VFD ROOM RECEPTACLES	3/4"	2-#12,#12G	120VAC	60LP1	60
60LP1-L2	OUTDOOR RECEPTACLES	3/4"	2-#12,#12G	120VAC	60LP1	60
60LP1-L3	VFD ROOM LIGHTS	3/4"	2-#12,#12G	120VAC	60LP1	60
60VFD4-C1	HIGH SERVICE PUMP #4 MOV CONTROL	1"	10-#14, #14G	CONTROL	60VFD4	BFV-5-10
60VFD4-N1	HIGH SERVICE PUMP #4 DEVICENET	1"	DEVICENET	DEVICENET	60VFD4	5MCC-2
60VFD4-L1	M-5-4 SPACE HEATER/THERMAL SWITCH	1"	4-#12,#12G	120VAC	60VFD4	M-5-4
60VFD4-P1 (1)	HIGH SERVICE PUMP #4 SUPPLY (SET 1)	4"	3-#500, #4G	480VAC	60VFD4	M-5-4
60VFD4-P1 (2)	HIGH SERVICE PUMP #4 SUPPLY (SET 2)	4"	3-#500, #4G	480VAC	60VFD4	M-5-4
60VFD6-C1	HIGH SERVICE PUMP #6 MOV CONTROL	1"	10-#14, #14G	CONTROL	60VFD6	60CV6
60VFD6-N1	HIGH SERVICE PUMP #6 DEVICENET	1"	DEVICENET	DEVICENET	60VFD6	5MCC-1
60VFD6-L1	60P6 SPACE HEATER/THERMAL SWITCH	1"	4-#12,#12G	120VAC	60VFD6	60P6
60VFD6-P1 (1)	HIGH SERVICE PUMP #6 SUPPLY (SET 1)	4"	3-#500, #4G	480VAC	60VFD6	60P6
60VFD6-P1 (2)	HIGH SERVICE PUMP #6 SUPPLY (SET 2)	4"	3-#500, #4G	480VAC	60VFD6	60P6
PLC55-C1	HIGH SERVICE PUMP #6 VFD CONTROL	1"	14-#14, #14G	CONTROL	PLC5-5	60VFD6
PLC55-C2	HIGH SERVICE PUMP #4 VFD CONTROL	1"	14-#14, #14G	CONTROL	PLC5-5	60VFD4
PLC55-C3	NEW SODIUM TANK CONTAINMENT FLOAT SWITCH	1"	2-#14,#14G	CONTROL	PLC5-5	60LSH201
PLC55-C4	NEW SODIUM TANK CONTAINMENT VALVE OPEN	1"	2-#14,#14G	CONTROL	PLC5-5	60ZSO201
PLC55-S1	HIGH SERVICE PUMP #6 VFD SIGNAL	1"	2-PAIR STP	4-20MA	PLC5-5	60VFD6
PLC55-S2	HIGH SERVICE PUMP #4 VFD SIGNAL	1"	2-PAIR STP	4-20MA	PLC5-5	60VFD4
5MCC2-C1	LOW LEVEL INTERLOCK FOR PUMP #4 VFD	1"	2-#14,#14G	CONTROL	5MCC-2	60VFD4
5MCC2-C2	LOW LEVEL INTERLOCK FOR PUMP #6 VFD	1"	2-#14,#14G	CONTROL	5MCC-2	60VFD6

1
60-E601

FACILITY 60 CONDUIT SCHEDULE

SCALE: NONE

REV	DATE	DESCRIPTION	BY
2	05/17/24	ADD 02	



DESIGNED BY:	HGW
DRAWN BY:	ECB
CHECKED BY:	JCW
DATE:	MAY 2024



CRIST ENGINEERS, INC.
CONSULTING ENGINEERS
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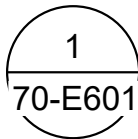
CONWAY CORPORATION
ROGER Q MILLS JR. WATER TREATMENT PLANT
8 MGD EXPANSION & IMPROVEMENTS
ADDENDUM NO. 02
HIGH SERVICE PUMP STATION CONDUIT SCHEDULE

CEI JOB NO.:	2135
GARVER JOB NO.:	19W01300
DRAWING NUMBER	60-E601
SHEET NUMBER	226

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Last plotted by: Hawes, Ryan H., Plot Style: 12-5849 Plot Date: 5/17/2024 2:21 PM, Plotter used: None

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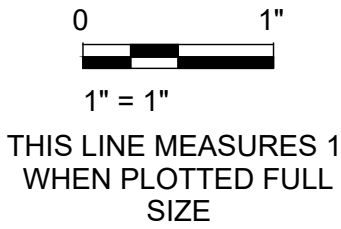
CONDUIT #	DESCRIPTION	SIZE	CONDUCTORS	TYPE	FROM EQUIPMENT	TO EQUIPMENT
01CP17-C1	EFFLUENT CHANNEL & SLUDGE TROUGH LEVEL HI	1"	4-#14, #14G	CONTROL	01CP1-7	21LSH501 & 21LSH601
01CP17-C2	SLUDGE CORRECTION DRIVE CONTROL	1"	20-#14, #14G	CONTROL	01CP1-7	21LCP501
01CP17-C3	ALUM. PUMP #3 CP CONTROL	1"	4-#14, #14G	CONTROL	01CP1-7	70CP301
01CP17-C4	ALUM. PUMP #4 CP CONTROL	1"	4-#14, #14G	CONTROL	01CP1-7	70CP401
01CP17-S1	BACKWASH TANK #2 LEVEL SIGNAL	EXISTING 2"	1-PAIR STP	4-20MA	01CP1-7	50LT201
01CP17-S2	ALUM. PUMP #3 CP SIGNAL	1"	1-PAIR STP	4-20MA	01CP1-7	70CP301
01CP17-S3	ALUM. PUMP #4 CP SIGNAL	1"	1-PAIR STP	4-20MA	01CP1-7	70CP401
01CP17-S4	ALUM. TANK LEVEL TRANSMITTER SIGNAL	1"	1-PAIR STP	4-20MA	01CP1-7	70LIT201
01CP17-S5	NEW PLANT FLOW TRANSMITTER SIGNAL	1"	1-PAIR STP	4-20MA	01CP1-7	70FIT301
1DP-L1	ALUM PUMP #3 STARTER	1"	2-#12, #12G	120VAC	1DP	70CP301
1DP-L2	ALUM PUMP #4 STARTER	1"	2-#12, #12G	120VAC	1DP	70CP401
1DP-L3	01CP1-7 SUPPLY	1"	2-#12, #12G	120VAC	1DP	01CP1-7
1DP-L4	70LIT201 SUPPLY	1"	2-#12, #12G	120VAC	1DP	70LIT201
1DP-L5	31LP1 SUPPLY	1-1/4"	3-#1,#8G	240VAC	1DP	31LP1
1DP-L6	NEW PLANT ALUM TANK HEAT TAPE	1"	2-#12, #12G	120VAC	1DP	NEW ALUM HEAT TAPE
1MCC1-P1	PANEL 31DP1 SUPPLY	2"	4-#1, #8G	480VAC	1MCC-1	31DP1
1MCC1-P10	FILTER VAULT UNIT HEATER #4	1"	3-#12, #12G	480VAC	1MCC-1	31UH08
1MCC1-P11	TRANSFORMER 1TX1 SUPPLY	2-1/2"	2-#4/0, #4G	480VAC	1MCC-1	1TX1
1MCC1-P12	AIR SCOUR BLOWER #2	2-1/2"	3-#250, #4G	480VAC	1MCC-1	31B201
1MCC1-P2	PANEL 31DP2 SUPPLY	2"	4-#1, #8G	480VAC	1MCC-1	31DP2
1MCC1-P3	PANEL 21DP1 SUPPLY	2"	4-#1, #6G	480VAC	1MCC-1	21DP1
1MCC1-P4	FILTER VAULT EXHAUST FAN #1 SUPPLY	1"	3-#12, #12G	480VAC	1MCC-1	PRV-301
1MCC1-P5	FILTER VAULT EXHAUST FAN #2 SUPPLY	1"	3-#12, #12G	480VAC	1MCC-1	31EF01
1MCC1-P6	FILTER VAULT MAKEUP AIR UNIT SUPPLY	2"	3-#2/0, #6G	480VAC	1MCC-1	31MAU01
1MCC1-P7	FILTER VAULT UNIT HEATER #1	1"	3-#12, #12G	480VAC	1MCC-1	31UH05
1MCC1-P8	FILTER VAULT UNIT HEATER #2	1"	3-#12, #12G	480VAC	1MCC-1	31UH06
1MCC1-P9	FILTER VAULT UNIT HEATER #3	1"	3-#12, #12G	480VAC	1MCC-1	31UH07
1MCC1-N1	AIR SCOUR BLOWER #2 DEVICENET	3/4"	DEVICENET	DEVICENET	1MCC1	01CP1-7
21VFD001-N1	RAPID MIXER DEVICENET	1"	DEVICENET	DEVICENET	01CP1-7	21VFD001
1TX1-L1	PANEL 1DP SUPPLY	4"	3-#500, #3G	240VAC	1TX1	1DP
70CP301-L1	NEW PLANT ALUM PUMP #3 SUPPLY	1"	2-#12, #12G	VDC	70CP301	70P301
70CP401-L1	NEW PLANT ALUM PUMP #4 SUPPLY	1"	2-#12, #12G	VDC	70CP401	70P401
70FIT301-S1	NEW PLANT FLOW ELEMENT SIGNAL	1"	1-PAIR STP	4-20MA	70FIT301	70FE301
70LIT201-S1	ALUM. TANK LEVEL ELEMENT SIGNAL	1"	1-PAIR STP	4-20MA	70LIT201	70LE201



FACILITY 70 CONDUIT SCHEDULE

SCALE: NONE

REV	DATE	DESCRIPTION	BY
2	05/17/24	ADD 02	



DESIGNED BY:	HGW
DRAWN BY:	ECB
CHECKED BY:	JCW
DATE:	MAY 2024



CONWAY CORPORATION
ROGER Q MILLS JR. WATER TREATMENT PLANT
8 MGD EXPANSION & IMPROVEMENTS
ADDENDUM NO. 02
CHEMICAL BUILDING ELECTRICAL CONDUIT SCHEDULE

CEI JOB NO.:	2135
GARVER JOB NO.:	19W01300
DRAWING NUMBER	70-E601
SHEET NUMBER	243

File: L:\2019\19W01300 - Conway Corp WTP Improvements\Drawings\90-E601.dwg Last Save: 5/17/2024 2:05 PM Last saved by: RHawes
Last plotted by: Hawes, Ryan H. Plot Style: --- Plot Scale: 1:2.5849 Plot Date: 5/17/2024 2:21 PM Plotter used: None

DESCRIPTION	CONDUIT #	BREAKER		CKT #	PHASE	CKT #	BREAKER		CONDUIT #	DESCRIPTION
		POLE	AMP.				AMP.	POLE		
10FIT101 SUPPLY	10LP1-L1	1	20	1	A	2	20	1	10LP1-L2	10FIT201 SUPPLY
NORTH METER VAULT RECEP.	10LP1-L3	1	20	3	B	4	20	1	10LP1-L4	SOUTH METER VAULT RECEP.
RAW WATER STRUCTURE RECEP.	10LP1-L5	1	20	5	A	6	30	1	10LP1-L6	SAMPLE PUMP STARTER
HEAT TRACE CONTROLLER	10LP1-L7	1	30	7	B	8	20	1		SPARE
SPARE		1	20	9	A	10	20	1		SPARE
SPARE		1	20	11	B	12	20	1		SPARE
SPARE		1	20	13	A	14	20	1		SPARE
SPARE		1	20	15	B	16				
SPARE		1	20	17	A	18	20	1		SPARE
SPACE				19	B	20				
SPACE				21	A	22				SPACE
SPACE				23	B	24				SPACE

1
90-E601

10LP1 PANEL SCHEDULE

SCALE: NONE

DESCRIPTION	CONDUIT #	BREAKER		CKT #	PHAS E	CKT #	BREAKER		CONDUIT #	DESCRIPTION
		POLE	AMP.				AMP.	POLE		
VFD ROOM RECEPTACLES	60LP1-L1	1	20	1	A	2	20	1	60LP1-L2	OUTDOOR RECEPTACLES
VFD ROOM LIGHTS	60LP1-L3	1	20	3	B	4	20	1		SPARE
SPARE		1	20	5	A	6	20	1		SPARE
SPARE		1	20	7	B	8	20	1		SPARE
SPARE		1	30	9	A	10	20	1		SPARE
SPARE		1	20	11	B	12	20	1		SPARE
SPARE		1	20	13	A	14	20	1		SPARE
SPARE		1	20	15	B	16	20	1		SPARE
SPARE		1	20	17	A	18	20	1		SPARE
SPARE		1	20	19	B	20	20	1		SPARE
SPARE		1	20	21	A	22	20	1		SPARE
SPARE		1	20	23	B	24	20	1		SPARE
SPARE		1	20	25	A	26	20	1		SPARE
SPARE		1	20	27	B	28	20	1		SPARE
SPARE		1	20	29	A	30	20	1		SPARE
SPARE		2	20	31	B	32	20	2		SPARE
				33	A	34				
SPARE		2	30	35	B	36	30	2		SPARE
				37	A	38				
SPACE				39	B	40				SPACE
SPACE				41	A	42				SPACE

2
90-E601

60LP1 PANEL SCHEDULE

SCALE: NONE

DESCRIPTION	CONDUIT #	BREAKER		CKT #	PHAS E	CKT #	BREAKER		CONDUIT #	DESCRIPTION
		POLE	AMP.				AMP.	POLE		
FILTER GALLERY LIGHTS	31LP1-L1	1	20	1	A	2	20	1	31LP1-L2	RECEPTACLES
FILTER OUTDOOR WALL LIGHTS	31LP1-L3	1	20	3	B	4	20	1	31LP1-L4	EMERGENCY LIGHT
FILTER POLE LIGHTS	31LP1-L5	1	20	5	C	6	20	1	31LP1-L6	PLC31-8 SUPPLY
PLC31-9 SUPPLY	31LP1-L7	1	20	7	A	8	20	1	31LP1-L8	ROLL UP DOOR ACTUATOR
LEVEL TRANSMITTER SUPPLY (31LIT601)	31LP1-L9	1	20	9	B	10	20	1	31LP1-L10	LEVEL TRANSMITTER SUPPLY (31LIT501)
LEVEL TRANSMITTER SUPPLY (31LIT801)	31LP1-L11	1	20	11	C	12	20	1	31LP1-L12	LEVEL TRANSMITTER SUPPLY (31LIT701)
TURBIDIMETER #1 SUPPLY (31AIT501)	31LP1-L13	1	20	13	A	14	20	1	31LP1-L14	TURBIDIMETER #2 SUPPLY (31AIT601)
SPARE		1	20	15	B	16	20	1		SPARE
SPARE		1	20	17	C	18	20	1		SPARE
SPARE		1	20	19	A	20	20	1		SPARE
SPARE		1	20	21	B	22	20	1		SPARE
SPARE		1	20	23	C	24	20	2		SPARE
SPARE		1	20	25	A	26				
SPARE		2	20	27	B	28	20	2		SPARE
				29	C	30				
SPARE		2	20	31	A	32				SPACE
				33	B	34				SPACE
SPACE				35	C	36				SPACE
SPACE				37	A	38				SPACE
SPACE				39	B	40				SPACE
SPACE				41	C	42				SPACE

1
90-E601

31LP1 PANEL SCHEDULE

SCALE: NONE

DESCRIPTION	CONDUIT #	BREAKER		CKT #	PHAS E	CKT #	BREAKER		CONDUIT #	DESCRIPTION
		POLE	AMP.				AMP.	POLE		
10LP1 SUPPLY	72LP1-L1	2	60	1	A	2	20	1	72LP1-L2	LIME & PAC BLDG OUTDOOR LIGHTS
LIME & PAC ELEC ROOM LIGHTS	72LP1-L3	1	20	5	C	6	20	2	72LP1-L4	72CU01
PAC AIR COMPRESSOR	72LP1-L5	1	20	7	A	8			72LP1-L6	ROLL-UP DOOR ACTUATOR #1
72CP72-10 SUPPLY	72LP1-L7	1	20	9	B	10	20	1	72LP1-L8	ROLL-UP DOOR ACTUATOR #2
LIME ROOM LIGHTING	72LP1-L9	1	20	11	C	12	20	1	72LP1-L10	PAC ROOM LIGHTING
OLD ALUM PLANT HEAT TRACE	72LP1-L11	1	20	13	A	14	20	1	72LP1-L12	71LIT201 SUPPLY
INDOOR RECEPTACLES CKT #1	72LP1-L13	1	20	15	B	16	20	1	72LP1-L14	OUTDOOR RECEPTACLES CKT #1
INDOOR RECEPTACLES CKT #2	72LP1-L15	1	20	17	C	18	20	1	72LP1-L16	OUTDOOR RECEPTACLES CKT #2
SPARE		1	20	19	A	20	20	1		SPARE
SPARE		1	20	21	B	22	20	1		SPARE
SPARE		1	20	23	C	24	20	2		SPARE
SPARE		1	20	25	A	26				
SPARE		2	20	27	B	28	20	2		SPARE
				29	C	30				
SPARE		2	20	31	A	32				SPACE
				33	B	34				SPACE
SPACE				35	C	36				SPACE
SPACE				37	A	38				SPACE
SPACE				39	B	40				SPACE
SPACE				41	C	42				SPACE

3
90-E601

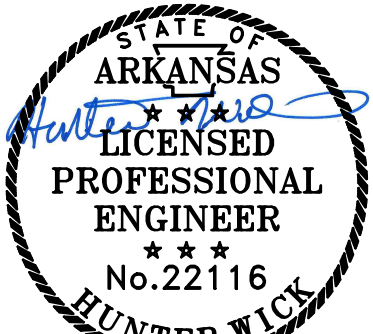
72LP1 PANEL SCHEDULE

SCALE: NONE

KEY NOTES:

- 1 CONTRACTOR SHALL COORDINATE BREAKER AND CONDUCTOR SIZES WITH TANK MANUFACTURER AND ADJUST AS REQUIRED.

REV	DATE	DESCRIPTION	BY
2	05/17/24	ADD 02	



0 1"
1" = 1"
THIS LINE MEASURES 1" WHEN PLOTTED FULL SIZE

DESIGNED BY: HGW
DRAWN BY: LCB
CHECKED BY: JCW
DATE: MAY 2024



CONWAY CORPORATION
ROGER Q MILLS JR. WATER TREATMENT PLANT
8 MGD EXPANSION & IMPROVEMENTS
ADDENDUM NO. 02

ELECTRICAL PANEL SCHEDULES

CEI JOB NO.: 2135
GARVER JOB NO.: 19W01300
DRAWING NUMBER
90-E601
SHEET NUMBER **317**

File: L:\2019\19W01300 - Conway Corp WTP Improvements\Drawings\90-E601.dwg Last Save: 5/17/2024 2:05 PM Last saved by: RH:Hawes
Last plotted by: Hawes, Ryan H Plot Style: --- Plot Scale: 1/2"=8'49 Plot Date: 5/17/2024 2:21 PM Plotter used: None

- 2
- GENERAL NOTES:
1.

REFER TO CONDUIT SCHEDULES FOR CONDUIT AND CONDUCTOR SIZES.
2.

CONSTRUCT DUCT BANKS IN ACCORDANCE WITH SPECIFICATIONS AND STANDARD DETAILS.
3.

DUCT BANK SECTIONS ARE PROVIDED FOR REFERENCE ONLY. CONTRACTOR SHALL REVIEW PLAN SHEETS FOR INDIVIDUAL STRUCTURES AND VERIFY CONDUITS THAT MAY BE REQUIRED.
4.

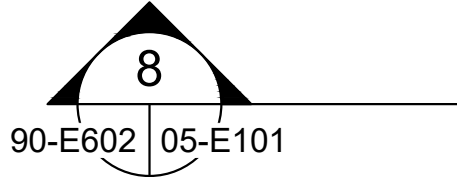
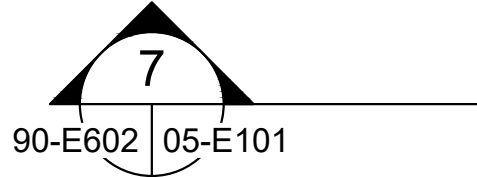
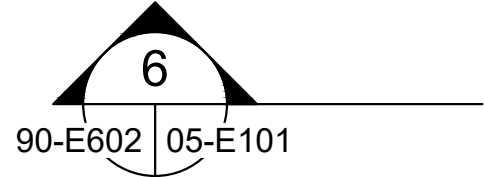
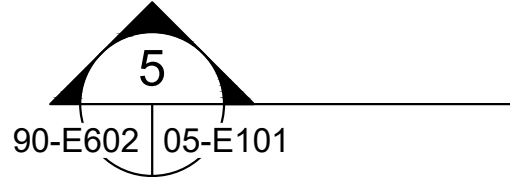
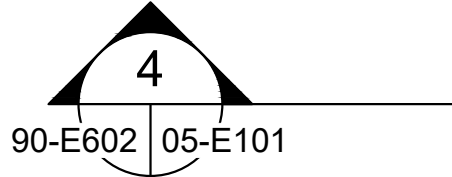
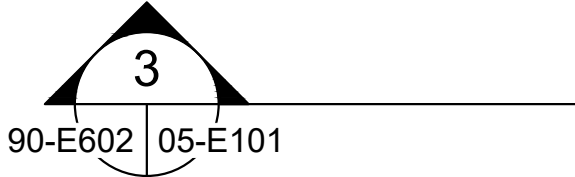
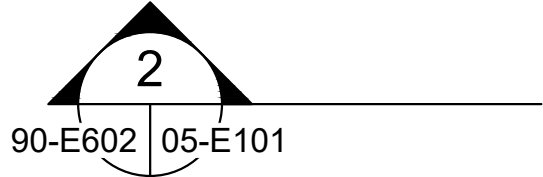
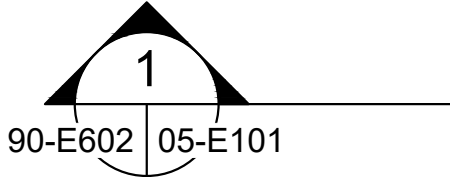
NOT ALL DUCT BANKS ON PROJECT SITE ARE DEPICTED. CONTRACTOR SHALL COORDINATE THE REQUIRED DUCT BANKS BETWEEN AND WITHIN FACILITIES AS REQUIRED FOR A COMPLETE INSTALLATION.
5.

DUCT BANK SECTIONS SHOWN SEPARATED BASED ON POWER/CONTROL/SIGNAL PURPOSES. SECTIONS MAY BE POURED IN SAME TRENCH FOLLOWING SPACING GUIDELINES FOUND IN STANDARD DETAILS.
6.

CONDUIT ARRANGEMENTS IN DUCT BANK SECTIONS SHOWN FOR REFERENCE ONLY. CONTRACTOR MAY MODIFY ARRANGEMENT FOLLOWING SPACING GUIDELINES FOUND IN STANDARD DETAILS.
7.

FOR SECTIONS WHERE NO SPARE CONDUITS ARE DEPICTED, CONTRACTOR SHALL PROVIDE ONE (1) SPARE CONDUIT EQUIVALENT TO THE LARGEST SIZE CONDUIT IN THAT DUCT BANK.

05EPB05--21			05EPB05--50			05EPB05--70			05EPB05--72			72 UTILITY--72			72--10			72--15			72--71	
CONDUIT	SIZE		CONDUIT	SIZE		CONDUIT	SIZE		CONDUIT	SIZE		CONDUIT	SIZE		CONDUIT	SIZE		CONDUIT	SIZE		CONDUIT	SIZE
01CP17-C1	1"		01CP17-S1	EXISTING 2"		72CP7210-N4	1"		72CP7210-N4	1"		UTIL1-P1 (SET 1)	3"		72CP7210-C1	1"		15VFD101-N1	1"		71LIT201-S1	1"
01CP17-C2	1"					72CP7210-N5	1"		72CP7210-N5	1"		UTIL1-P1 (SET 2)	3"		72CP7210-C14	1"		72CP7210-C10	1"		71ZSO101-C1	1"
1MCC1-P3	2"					01CP17-C1	1"								72CP7210-C2	1"		72CP7210-C11	1"		72LP1-L11	1"
21VFD001-N1	1"					01CP17-C2	1"								72CP7210-C3	1"		72CP7210-C12	1"		72LP1-L12	1"
						01CP17-S1	EXISTING 2"								72CP7210-C4	1"		72CP7210-C13	1"			
						1MCC1-P3	2"								72CP7210-C5	1"		72CP7210-C8	1"			
						21VFD001-N1	1"								72CP7210-C6	1"		72CP7210-C9	1"			
															72CP7210-C7	1"		72DP1-P2	2"			
															72CP7210-S1	1"						
															72CP7210-S10	1"						
															72CP7210-S11	1"						
															72CP7210-S12	1"						
															72CP7210-S2	1"						
															72CP7210-S3	1"						
															72CP7210-S4	1"						
															72CP7210-S5	1"						
															72CP7210-S6	1"						
															72CP7210-S7	1"						
															72CP7210-S8	1"						
															72CP7210-S9	1"						
															72DP1-P8	2"						
															10CP300-C1	1"						
															72DP2-P10	1"						
															72DP2-P11	1"						
															72DP2-P12	1"						
															72DP2-P13	1"						
															72DP2-P8	1"						
															72DP2-P9	1"						
															72LP1-L1	2"						
															10LCP1-C1	1"						



REV	DATE	DESCRIPTION	BY
2	05/17/24	ADD 02	

CERTIFICATE OF AUTHORIZATION

GARVER
LLC
No. 766

ARKANSAS-ENGINEER

STATE OF
ARKANSAS

LICENCED
PROFESSIONAL
ENGINEER

No.22116

HUNTER WICK

Digitally Signed 05/17/2024

01"

THIS LINE MEASURES 1"
WHEN PLOTTED FULL
SIZE

DESIGNED BY:
HGW

DRAWN BY:
LCB

CHECKED BY:
JCW

DATE:
MAY 2024

Crist

ENGINEERS

CRIST ENGINEERS, INC.
CONSULTING ENGINEERS
1 EXECUTIVE CENTER COURT
LITTLE ROCK, ARKANSAS 72111
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G

GARVER

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CONWAY CORPORATION

ROGER Q MILLS JR. WATER TREATMENT PLANT
8 MGD EXPANSION & IMPROVEMENTS

ADDENDUM NO. 02

ELECTRICAL DUCT BANK SECTIONS

CEI JOB NO.:
2135

GARVER JOB NO.:
19W01300

DRAWING NUMBER
90-E602

SHEET
NUMBER 318

INDEX OF STANDARD DETAILS

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D03	3000-100C	STANDARD HOOK AND REINFORCING LAP SPICE
D03	3000-101	STANDARD COVER FOR REINFORCING STEEL
D03	3000-102A	FLAT RIBBED WATERSTOP DETAIL
D03	3000-102B	STRIP-TYPE WATERSTOP DETAIL
D03	3000-105	SPLASH BLOCK DETAIL
D03	3000-110	CHIPPED OUT CONCRETE DETAIL
D03	3000-127	TYPICAL FOUNDATION CONSTRUCTION JOINT
D03	3000-200	TYP REINF. WALL, GRADE BEAM, & FOUNDATION INTERSECTION/CORNER REINFORCING
D03	3000-201	WALL JOINT TO FOUNDATION JOINT
D03	3000-202	WALL VERTICAL CONSTRUCTION JOINT
D03	3000-205	PIPE CARRIER TRENCH DETAIL
D03	3000-601	CONSTRUCTION JOINT
D03	3000-600	ADDITIONAL REINF. AT WALL OPENINGS
D03	3000-601	TYPICAL ADDITIONAL REINF. AT SUSPENDED SLAB OPENINGS
D03	3000-602	STANDARD CHAMFER AT CONCRETE
D03	3000-606	EXPANSION JOINT-WALL
D03	3000-607	TOP OF WEIR WALL DETAIL
D03	3000-700	CONSTRUCTION JOINT-CORNER
D03	3000-701	CONSTRUCTION JOINT-TEE
D03	3000-703	CONSTRUCTION JOINT AT FUTURE EXPANSION
D03	3000-704	DRAINAGE GROOVE AT WALL
D03	3000-800	PIPE COLLAR DETAIL
D03	3000-801	TYPICAL PIPE SUPPORT PEDESTAL ON CONCRETE
D03	3000-1000	EQUIPMENT BASE DETAIL
D03	3000-1001	ANCHOR BOLT DETAIL
D03	3300-901	GENERATOR FOUNDATION

DIVISION 04 - MASONRY		
DIVISION	DETAIL SECTION	DETAIL DESCRIPTION
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D04	0421-002	HEAD OF WALLS DETAILS
D04	0421-003	TYP BASE OF WALL DETAIL
D04	0751-004	ROOF COPING DETAIL @ MASONRY PARAPET WALL
D04	2200-002A	TYPICAL CMU LINTEL BEAMS
D04	2200-003	TYPICAL CMU BOND BEAM DETAIL
D04	2200-004	TYPICAL CMU BOND BEAM CORNER REINFORCEMENT
D04	2200-005	TYPICAL CMU WALL REINFORCEMENT
D04	2200-104A	CMU SQUARE OPENING REINFORCING
D04	2200-201	NON-LOAD BEARING CMU WALL SUPPORT DETAIL
D04	2200-203	ROOF DECK TO MASONRY WALL CONNECTION
D04	2200-205	ROOF DECK ON INTERIOR MASONRY WALL
D04	2200-300	REINF. AT OPENINGS DETAIL
D04	2200-302	TYPICAL CMU BOND BEAM INTERSECTION REINFORCEMENT
D04	2200-304	TYPICAL WALL REINFORMENT AT WALL JOIST DETAIL
D04	2200-306	PLAN MASONRY JOINT
D04	2200-307	TYPICAL CONNECTION AT CMU WALL INTERSECTION
D04	2200-308	TYP CMU OVERHEAD DOOR JAMB
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DIVISION 05 - METALS		
DIVISION	DETAIL SECTION	DETAIL DESCRIPTION
D05		
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D05	5000-401	DECK OPENING REINFORCEMENT DETAIL
D05	5000-500	PIPE RESTRAINTS
D05	5000-501	SUSPENDED EQUIPMENT BRACING
D05	5000-800	SINGLE ALUMINUM HATCH
D05	5000-801	DOUBLE ALUMINUM HATCH
D05	5000-802	LADDER SAFTEY EXTENSION DEVICE
D05	5000-803	LADDER RUNG DETAIL
D05	5000-804	LADDER BRACKET DETAILS
D05	5000-805	STANDARD LADDER DETAILS
D05	5000-807	LADDER BASE FLANGE DETAIL
D05	5000-900	FLOOR OPENING COVER PLATE
D05	5000-901	CONNECTION DETAILS
D05	5000-902	CONNECTION DETAIL NOTES
D05	5000-907	BEAM TO WALL CONNECTION DETAIL
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D05	5000-912	GRATE SUPPORT ANCHOR CONNECTION DETAIL
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D05	5000-915	BEAM TO WALL CONNECTION DETAIL
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D05	5000-917	BEAM TO BEAM CONNECTION DETAIL
D05	5000-918	CHANNEL TO WALL CONNECTION DETAIL
D05	5000-920	BEAM SINGLE PLATE SHEAR CONNECTION - STEEL
D05	5100-700	TYPICAL OSHA TYPE STAIRS SIDEMOUNT BRACKET ELEVATION
D05	5100-703	HEAD OF STAIR AT LANDING PLATFORM
D05	5100-704	HEAD OF STAIR AT CONCRETE WALL OR SLAB
D05	5100-705	BASE OF STAIRS AT CONCRETE SLAB OR LANDING PAD

DIVISION 05 - METALS		
DIVISION	DETAIL SECTION	DETAIL DESCRIPTION
D05	5100-706	TYPICAL STAIR HANDRAIL ELEVATION
D05	5100-707	SECTION
D05	5110-101	TYPICAL STAIR SUPPORT TOWERS
D05	5120-001	STEEL DOUBLE ANGLE BOLTED CONNECTION VERTICAL BOLT LINES
D05	5120-002	STEEL SINGLE PLATE SHEAR CONNECTION
D05	5120-101	BEAM TO MASONRY WALL CONNECTION
D05	5120-102	BEAM TO MASONRY WALL CONNECTION
D05	5120-103	DETAIL- TRUSS ROOF TO CMU
D05	5120-104	DECKING LEDGE SUPPORT ANGLE DETAIL
D05	5120-105	ANCHOR BOLTS IN MASONRY
D05	5213-100	TEE FITTING DETAIL
D05	5213-101	TOEBOARD DETAILS
D05	5213-102	SPLICE LOCK
D05	5213-103	TYPICAL WALL RAIL DETAIL
D05	5213-105	SIDE MOUNT BRACKET
D05	5213-106	STAIR STRINGER BASE FLANGE DETAIL
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D05	5213-108	EXPANSION JOINT SPLICE
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D05	5213-110	TYPICAL SAFETY CHAIN DETAIL
D05	5213-112	TYPICAL WIDE FLANGE DETAIL
D05	5213-113	DETAILS
D05	5213-116	TOEBOARD DETAILS
D05	5213-117	SIDE MOUNT BRACKET
D05	5213-118	BASE FLANGE DETAIL CONCRETE STAIR
D05	5213-120	FLOOR MOUNT SINGLE BRACKET
D05	5213-139	VERTICAL GRAB BARS
D05	5213-600	OSHA TYPE GUARDRAIL
D05	5213-701	WALL MOUNTED HANDRAIL
D05	5300-901	TYPICAL GRATING AND FRAME DETAIL
D05	5300-902	TYPICAL GRATING AND SUPPORT DETAILS
D05	5300-904	TYPICAL GRATING DETAIL AND FRAMING DETAIL

DIVISION 07 - THERMAL & MOISTURE PROTECTION		
DIVISION	DETAIL SECTION	DETAIL DESCRIPTION
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D07	7100-002	ROOF DRAIN SCUPPER FOR BUILT-UP AND SINGLE PLY ROOFING
D07	7100-003	CONDUCTOR HEAD
D07	7100-004	DOWNSPOUT
D07	7100-005	PARAPET DETAILS
D07	7100-006	SINGLE-PLY ROOFING
D07	7200-001	EQUIPMENT CURB @ SINGLE-PLY ROOFING

DIVISION 08 - OPENINGS		
DIVISION	DETAIL SECTION	DETAIL DESCRIPTION
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D08	1613-100A	SINGLE FLUSH DOOR WITH VIEW PARTIAL VISION PANEL GLAZED GLASS
D08	1613-100B	TYP SINGLE FLUSH DOOR TYPE
D08	1613-100C	DOUBLE FLUSH DOORS WITH PARTIAL VISION PANELS GLAZED GLASS
D08	1613-100D	DOUBLE FLUSH DOORS
D08	1613-100E	DOUBLE FLUSH DOORS WITH PARTIAL VISION PANELS GLAZED GLASS HINED TRANSOM PANEL
D08	1613-100F	TYP DOUBLE FLUSH TRANSOM DOOR TYPE
D08	1613-100G	DOUBLE FLUSH DOORS WITH PARTIAL VISION PANELS GLAZED GLASS
D08	1613-201	TYPICAL PERSONEL DOOR @ MASONRY WALL w/ VENEER
D08	1613-204	TYPICAL DOOR JAMB @ EXTERIOR MASONRY WALL
D08	1613-217	TYP HEAD INT CONCRETE DOOR DETAIL
D08	1613-218	TYPICAL JAMB @ INT CONCRETE DOOR DETAIL
D08	3322-100C	TYP OVERHEAD DOOR TYPE
D08	3323-100M	DOOR/FRAME TYPE M
D08	3323-300	OVERHEAD DOOR HEAD DETAIL
D08	3323-303	TYPICAL OVERHEAD DOOR JAMB DETAIL
D08	3323-306	TYP SILL EXT OVERHEAD DOOR DETAILS
D08	3323-307	TYPICAL DOOR JAMB @ EXTERIOR CMU
D08	3323-308	OVERHEAD DOOR HEAD DETAIL @ EXTERIOR MASONRY WALL
D08	7100-206	TYP SILL EXT DOOR DETAIL
D08	9000-001	COMBINATION LOUVER MOUNTING DETAIL
D08	9000-002	STATIONARY LOUVER WITH INSULATED DAMPER
D08	9000-800	TYP HEAD EXT LOUVER DETAIL
D08	9000-803	TYPICAL LOUVER JAMB DETAIL
D08	9000-806	TYP SILL EXT LOUVER DETAIL

DIVISION 22 - PLUMBING		
DIVISION	DETAIL SECTION	DETAIL DESCRIPTION
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D22	0529-004	WALL MOUNTED PIPE SUPPORT
D22	0529-008	PIPE HANGER
D22	0529-009	PIPE HANGER WITH CONTINUOUS CHANNEL PIPE SUPPORT
D22	0529-013	NON-ADJUSTABLE FLOOR MOUNTED PIPE SUPPORT
D22	0529-017	STAINLESS STEEL STRUT CHANNEL PIPE SUPPORT



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DIVISION	DETAIL SECTION	DETAIL DESCRIPTION
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D23	0000-004	WALL EXHAUST FAN DETAIL
D23	0000-005	FLOOR DRAIN DETAIL
D23	0000-006	FLOOR CLEANOUT DETAIL
D23	0529-001	DUCT HANGER SUPPORT BEAM
D23	0529-003	DUCT SUPPORTS DETAILS
D23	0529-004	WALL MOUNTED VERTICAL DUCT SUPPORT
D23	2381-002	TYPICAL CONDENSING/HEAT PUMP UNIT DETAIL
D23	2381-004	CONDENSATE DRAIN DETAIL
D23	3423-007	WALL MOUNTED PROPELLER TYPE EXHAUST FAN INSTALLED IN METAL BLDG
D23	3423-035	ROOF MOUNTED CENTRIFUGAL DOWN BLAST EXHAUST FAN
D23	3423-036	FAN CURB ON CONCRETE ROOF DETAIL
D23	3713-001	WALL MOUNTED INTAKE OPENING INSTALLATION IN CMU WALL
D23	8127-002	TYPICAL CONDENSING/HEAT PUMP UNIT DETAIL

DIVISION 26 - ELECTRICAL		
DIVISION	DETAIL SECTION	DETAIL DESCRIPTION
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D26	0526-010	DRY TYPE DISTRIBUTION TRANSFORMER GROUNDING DETAIL
D26	0526-013	TYPICAL GROUND ROD WITH TEST WELL INSTALLATION
D26	0529-001	CONDUIT AND JUNCTION BOX SUPPORT DETAIL
D26	0529-002	TYPICAL PAD MOUNTING ELECTRICAL EQUIPMENT DETAIL
D26	0529-002B	TYPICAL PAD MOUNTING ELECTRICAL EQUIPMENT W/ LEGS DETAIL
D26	0529-003	ELECTRICAL CONCRETE HOUSEKEEPING PAD DETAIL
D26	0529-004	CONCRETE HOUSEKEEPING CURB DETAIL
D26	0529-008	HEAVY DUTY ELECTRICAL EQUIPMENT RACK DETAIL
D26	0529-009	TYPICAL RACK BASEPLATE DETAIL
D26	0529-010	CONTROL STATION INSTALLATION DETAIL
D26	0529-011	TYPICAL ELECTRICAL EQUIPMENT MOUNTING DETAIL - SIDE VIEW
D26	0529-012	TYPICAL ELECTRICAL EQUIPMENT MOUNTING DETAIL- FRONT VIEW
D26	0529-013	TYPICAL SUN SHIELD FOR CONTROL PANEL AND INSTRUMENTS
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D26	0529-016	TYPICAL CONDUIT INSTALLATION AT WALKWAY DETAIL
D26	0533-017	CONDUIT WALL PENETRATION SEAL DETAIL
D26	0543-012	CONCRETE ENCASED ELECTRICAL DUCT DETAIL
D26	0543-013	UNDERGROUND DETECTABLE WARNING TAPE DETAIL
D26	0543-014	ELECTRICAL PULLBOX DETAIL
D26	0543-015	TYPICAL DUCTBANK SPACING AND COUPLNG DETAIL
D26	0553-002	TYPICAL ENGRAVED NAMEPLATE DETAIL
D26	2612-002	UTILITY TRANSFORMER PAD DETAIL
D26	5600-003	TYPICAL ELEVATED CONCRETE BASE DETAIL
D26	5600-007	LIGHT POLE MOUNTING ON ELEVATED SLAB DETAIL

DIVISION 32 - EXTERIOR IMPROVEMENTS		
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D32	1216-001-AR	TYPICAL SECTION - ASPHALT PAVEMENT AR
D32	1313-002-AR	CONCRETE PAVING AR
D32	3113-001	TYPICAL FENCE DETAIL

DIVISION 40 - PROCESS INTEGRATION		
DIVISION	DETAIL SECTION	DETAIL DESCRIPTION
D40		
D40	0513-004	CHEMICAL FILL STATION
D40	0513-006	PRESSURE SWITCH & INDICATOR W/ANNULAR SEAL INSTALLATION
D40	0513-007	TYPICAL PRESSURE INDICATOR INSTALLATION
D40	0557-023	MOTOR OPERATED VALVE TYPICAL ELECTRICAL DETAIL
D40	2339-001	DUCTILE IRON PIPE - BURIED EXTERIOR WALL PENETRATION
D40	2339-002	WELDED STEEL PIPE - BURIED EXTERIOR
D40	2339-003	DUCTILE IRON PIPE- BURIED EXTERIOR
D40	2339-008	PVC PIPE TO FLEXIBLE TUBING TRANSITION
D40	2339-009	SUMP WALL PENETRATION DETAIL
D40	2339-010	PVC CARRIER PIPE-ELBOW
D40	2339-011	PULL-BOX/FLEXIBLE CHEMICAL LINES
D40	2339-017	HOSE BIB INSTALLATION - INTERIOR LOCATIONS
D40	2343-001	BURIED VALVE BOX AND OPERATORS
D40	2343-002	BURIED ELECTRIC PLUG VALVE
D40	2343-004	MUD VALVE
D40	2343-005	AIR VACUUM AND AIR RELEASE VALVE FOR VARIOUS SIZES
D40	2343-007P	TYPICAL VALVE INSTALLATION
D40	2343-008P	TYPICAL VALVE BOX DETAIL
D40	2400-001	PIPE WALL PENETRATION SEAL
D40	2400-004	FLOOR PIPE
D40	2400-006	EXPOSED EXTERIOR/INTERIOR PIPE CONNCECTION
D40	2400-007	PIPE PENETRATION - EXISTING WALL
D40	2400-009	PIPE ENCASEMENT
D40	2400-011	ULTRASONIC SENSOR INSTALLATION
D40	2400-012	CHEMICAL INJECTION QUILL
D40	2400-014	CHEMICAL FLUSHING CONNECTION
D40	2400-015	FLUSHING CONNECTION
D40	2400-016	AIR RELEASE WITH GOOSENECK
D40	7000-001	TYPICAL INSTRUMENT SURGE PROTECTION DETAIL
D40	7213-002	ULTRASONIC LEVEL ELEMENT INSTALLATION TANK DETAIL
D40	7276-001	WETWELL INSTRUMENTATION MOUNTING DETAIL
D40	7553-001	FILTER EFFLUENT TURBIDIMETER INSTALLATION DETAIL



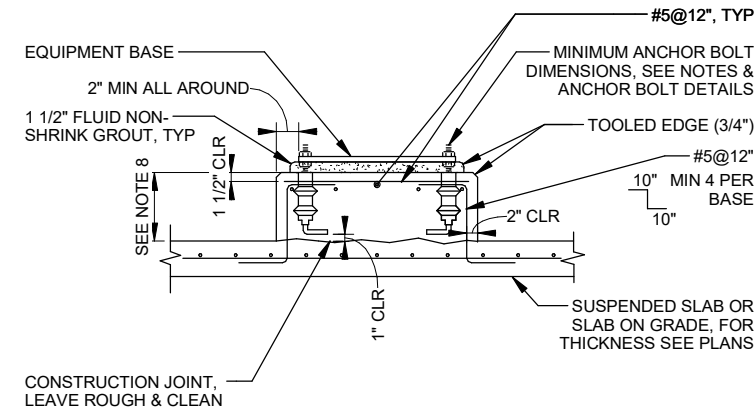
CONWAY CORPORATION
CONWAY, AR
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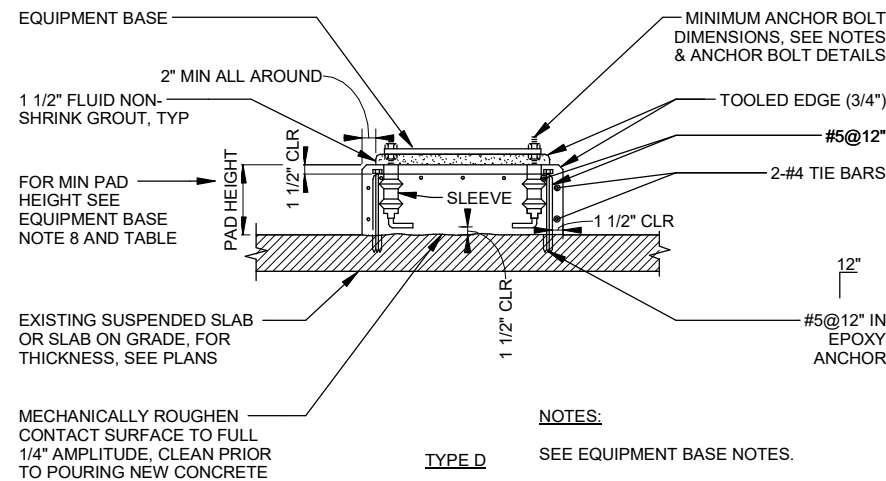
DATE: 5/1/2024



NOTES:

1. SEE EQUIPMENT BASE NOTES.
2. SEE TYPE B NOTES.

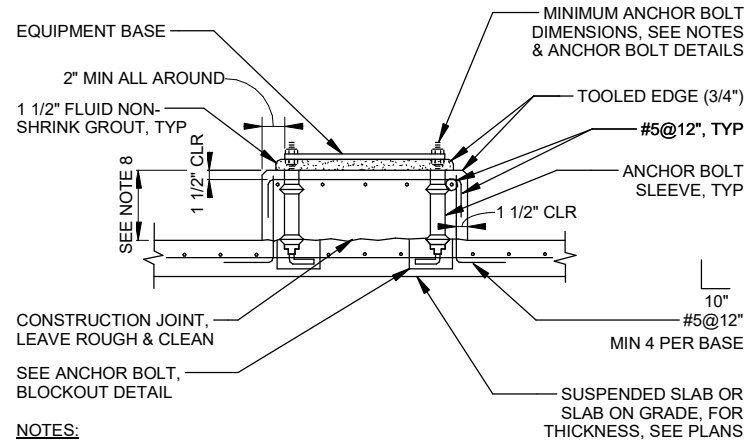
TYPE A



NOTES:

- SEE EQUIPMENT BASE NOTES.

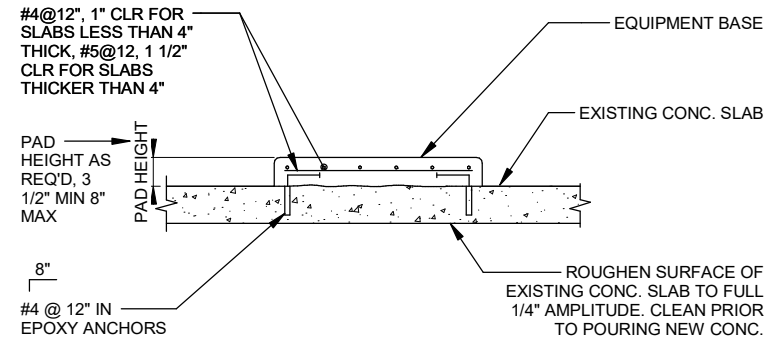
TYPE D



NOTES:

1. SEE EQUIPMENT BASE NOTES.
2. USE TYPE B BASE IN PLAVE OF TYPE A WHERE REQUIRED BY EQUIPMENT OR STUCTURE GEOMETRY. SEE NOTE 8.

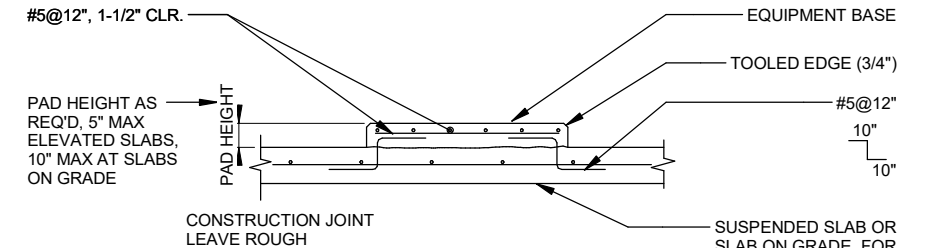
TYPE B



NOTES:

- ANCHOR EQUIPMENT TO CONCRETE USING SST CONCRETE ANCHORS SPECIFIED.

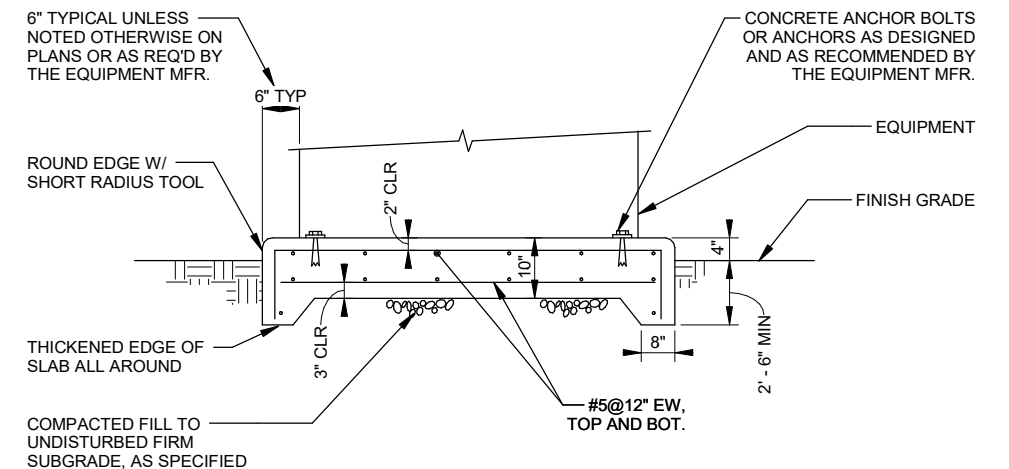
TYPE E



NOTES:

1. SEE EQUIPMENT BASE NOTES.
2. ANCHOR EQUIPMENT TO CONCRETE USING SST CONCRETE ANCHORS OR ANCHOR BOLTS SPECIFIED
3. PAD SHALL BE 6\"/>

TYPE C



NOTES:

- VERIFY PAD SIZE WITH EQUIPMENT MANUFACTURER PRIOR TO CONSTRUCTION.

TYPE F

EQUIPMENT BASE NOTES:

1. PAD SIZE SHALL BE MINIMUM INDICATED OR AS SHOWN ON THE PLANS. VERIFY ALL PAD SIZE REQUIREMENTS WITH SHOP DRAWINGS OF ACTUAL EQUIPMENT FURNISHED AND OBTAIN ENGINEER'S APPROVAL OF FINAL DIMENSIONS.
2. THE SIZE, NUMBER, TYPE, LOCATION, AND THREAD PROJECTION OF THE ANCHOR BOLTS SHALL BE DETERMINED BY THE EQUIPMENT MANUFACTURER, AND SHALL BE AS APPROVED BY THE ENGINEER. ANCHOR BOLTS SHALL BE HELD IN POSITION WITH A ONE PIECE TEMPLATE, MATCHING THE BASE PLATE, WHILE PAD IS BEING POURED.
3. ANCHOR BOLT A MINIMUM MOVEMENT OF 1/2\"/>

ANCHOR BOLT DIA (IN.)	1/2	5/8	3/4	7/8	1	1 1/4	1 3/8	1 1/2	1 3/4	2
MIN PAD HT (IN.)	7	8 1/2	10	11	12 1/2	15	16 1/2	18	21	24

5. EQUIPMENT BASES SHALL BE INSTALLED LEVEL UNLESS SPECIFIED OTHERWISE.
6. WEDGES OR SHIMS SHALL BE USED TO SUPPORT THE BASE WHILE THE NON-SHRINK GROUT IS PLACED. TEMPORARY LEVELING NUTS SHALL BE BACKED OFF. IF LEFT IN THE WEDGES OR SHIMS SHALL NOT BE EXPOSED TO VIEW.
7. HEIGHT OF PADS SHALL BE MINIMUM REQUIRED FOR ANCHOR BOLT CLEARANCE TO KEEP ANCHOR BOLT OUT OF SLAB (SEE TABLE BELOW). WHERE EQUIPMENT OR PIPING ELEVATION REQUIRE A PAD HEIGHT LESS THAN THE MINIMUM SHOW, USE TYPE B WITH BLOCKOUT.
8. TYPE "D" PADS MAY BE SUBSTITUTED FOR TYPE "A" PADS FOR LOCATIONS APPROVED IN WRITING BY THE ENGINEER.
9. SEE ANCHOR BOLT AND BLOCKOUT DETAILS.

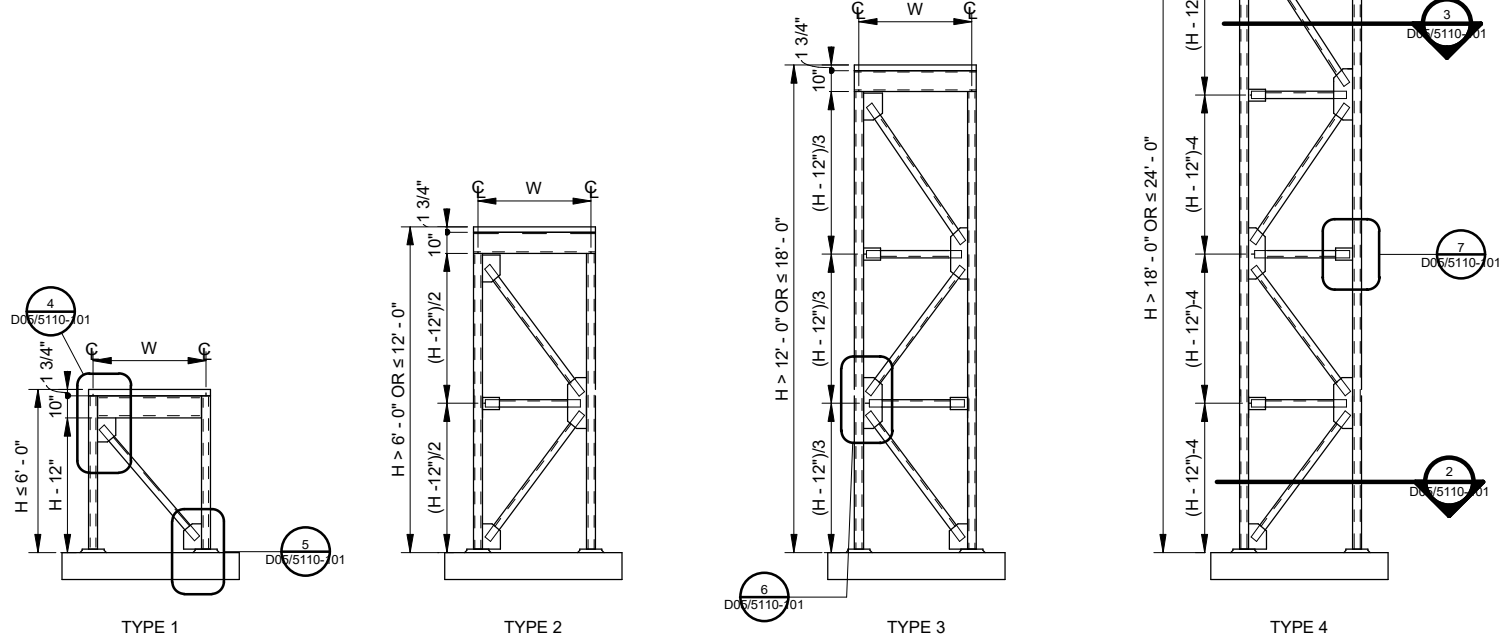
CONWAY CORPORATION	
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EQUIPMENT BASE DETAIL		DIVISION	D03
		SECTION - DETAIL NO.	3000-1000
		DATE:	5/1/2024

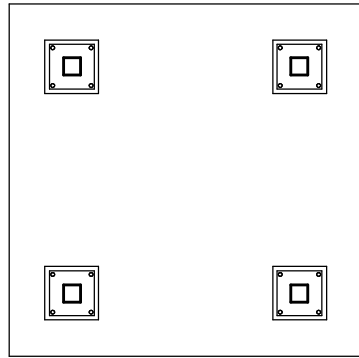


NOTES:

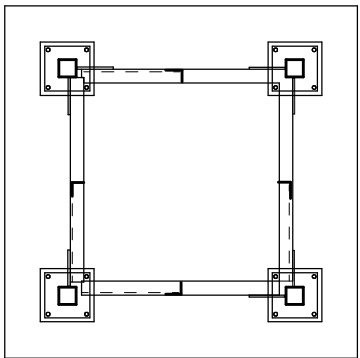
1. W SHALL EQUAL THE STAIR TREAD WIDTH PLUS 1' - 6", 4' - 6" MIN.
2. STAIR STRINGERS SHALL BE CENTERED ON TOWER WIDTH.
3. ALL FOUR TOWER SIDES TO BE BRACED AS SHOWN.



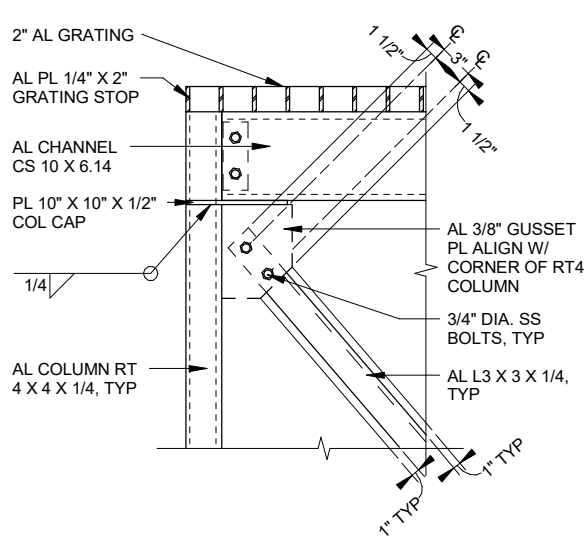
1 TYPICAL STAIR SUPPORT TOWERS
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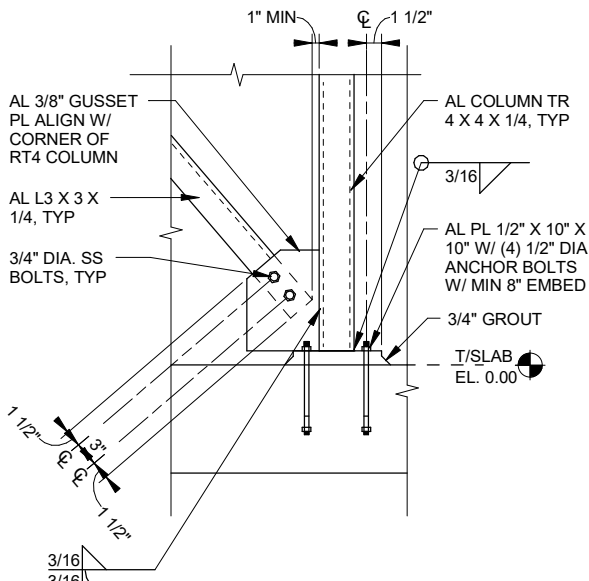
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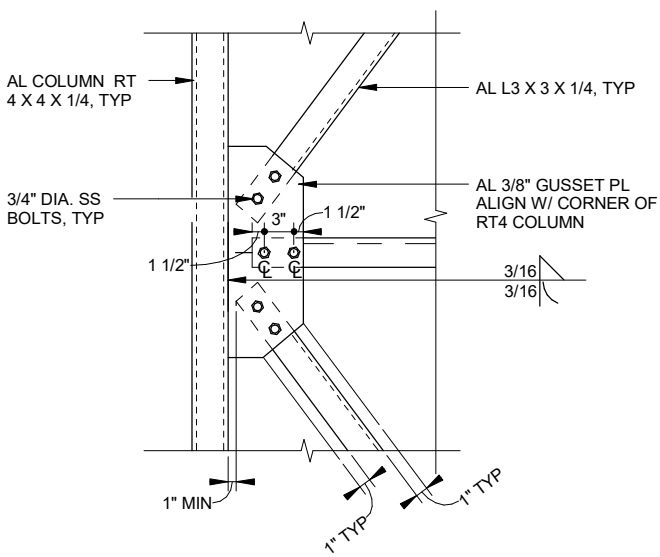
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SCALE: NTS



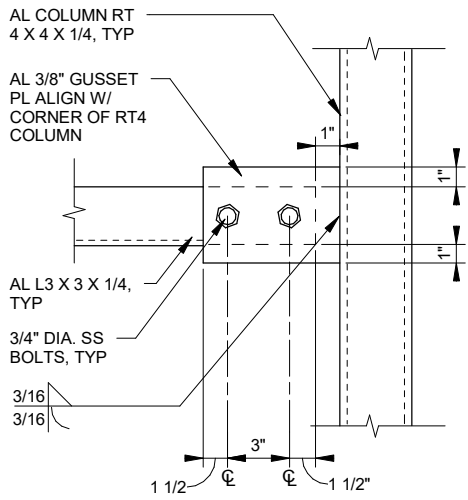
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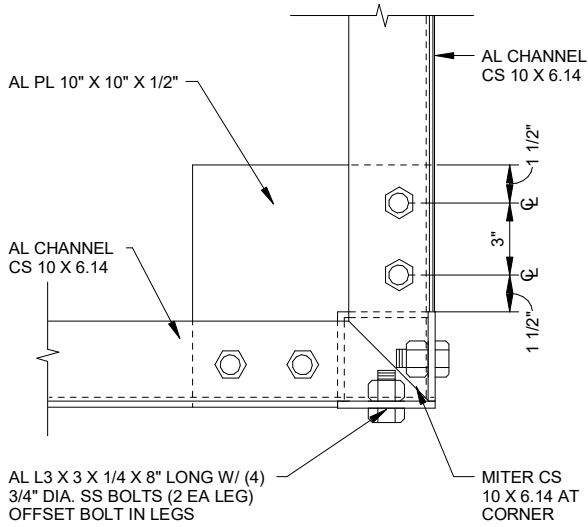
5 DETAIL
SCALE: NTS



6 DETAIL
SCALE: NTS



7 DETAIL
SCALE: NTS



8 DETAIL
SCALE: NTS

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TYPICAL STAIR SUPPORT
TOWERS

DIVISION

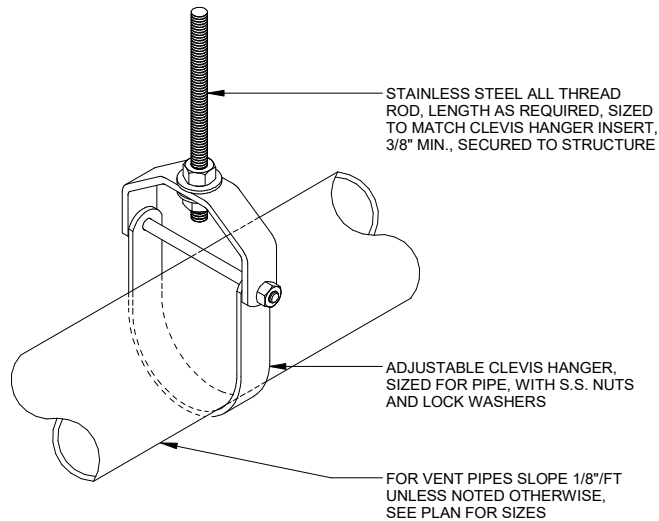
D05

SECTION - DETAIL NO.

5110-101

DATE: 5/1/2024





ALL THREAD MINIMUM SUPPORT ROD SIZE							
PIPE SIZE	≤ 6"	8"	10"-12"	14"	16"-18"	20"	24"
ALL-THREAD SIZE	3/8"	1/2"	5/8"	3/4"	7/8"	1"	1-1/4"

STEEL AND DUCTILE IRON SUPPORT SPACING (MAXIMUM)							
PIPE SIZE	≤ 1"	1 1/2" - 2 1/2"	3"-4"	6"-8"	10"-12"	14"-18"	20"-24"
SPACING (FEET)	6	8	10	12	14	16	18

STAINLESS STEEL SUPPORT SPACING				
PIPE SIZE	1"-6"	8"-12"	14"-16"	18"-24"
SPACING (FEET)	8	10	12	14

NOTES:

1. FOR COPPER PIPING, MAXIMUM SUPPORT SPACING 2 FEET LESS PER SIZE. SIZE SHOWN IN ABOVE TABLE, WITH 1" AND SMALLER PIPE SUPPORTED EVERY 5'-0".
2. FOR PVC PIPE, REDUCED SUPPORT SPACING PER MANUFACTURER RECOMMENDATION FOR FLOW TEMPERATURE IN PIPE.
3. FOR TRAPEZE HANGER TAKE SPACING OF SMALLEST SIZE ON TRAPEZE.
4. UTILIZE PURLIN BEAM CLAMPS FOR ATTACHMENT TO STRUCTURE.

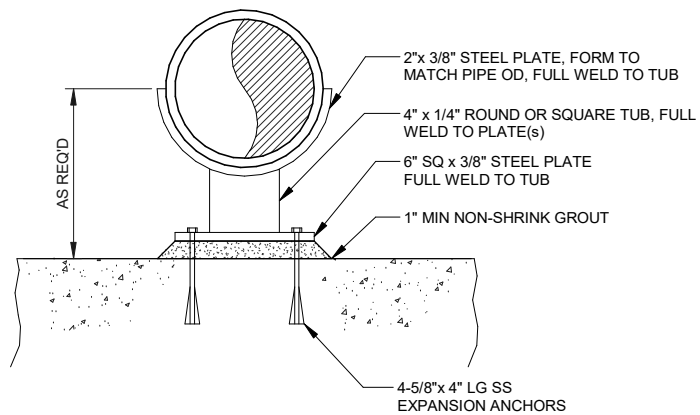


CONWAY CORPORATION
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 ROGER Q MILLS JR. WATER TREATMENT
 PLANT - 8 MGD EXP & IMPROVEMENTS

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DETAIL NOT TO SCALE

REV	DATE	DESCRIPTION	BY
PIPE HANGER			DIVISION D22
			SECTION - DETAIL NO. 0529-008
			DATE: 5/1/2024



CONWAY CORPORATION
 CONWAY, AR
 ROGER Q MILLS JR. WATER TREATMENT
 PLANT - 8 MGD EXP & IMPROVEMENTS

JOB NO.: 19W01300

DETAIL NOT TO SCALE

REV	DATE	DESCRIPTION	BY
NON-ADJUSTABLE FLOOR MOUNTED PIPE SUPPORT			DIVISION D22
			SECTION - DETAIL NO. 0529-013
			DATE: 5/1/2024

1/2" Ø X 4" EXPANSION ANCHOR
BOLT, 304SS 2" FROM EACH EAND
AND 16" SPACING

STAINLESS STEEL 12 GA, 7/8" 1
5/8" STRUT CHANNEL

STAINLESS STEEL SINGLE PIECE
PIPE STRAP, SIZED TO
ACCOMMODATE PIPE O.D. PLUS
INSULATION, AS REQUIRED.

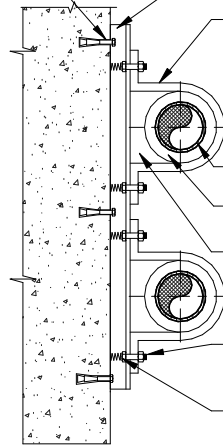
PIPE

PIPE INSULATION,
AS REQUIRED

SPACER BLOCK

STAINLESS STEEL HEX
HEAD CAP SCREW, TYP

STAINLESS STEEL
CHANNEL NUT WITH
SPRING.



STAINLESS STEEL STRUT CHANNEL PIPE SUPPORT

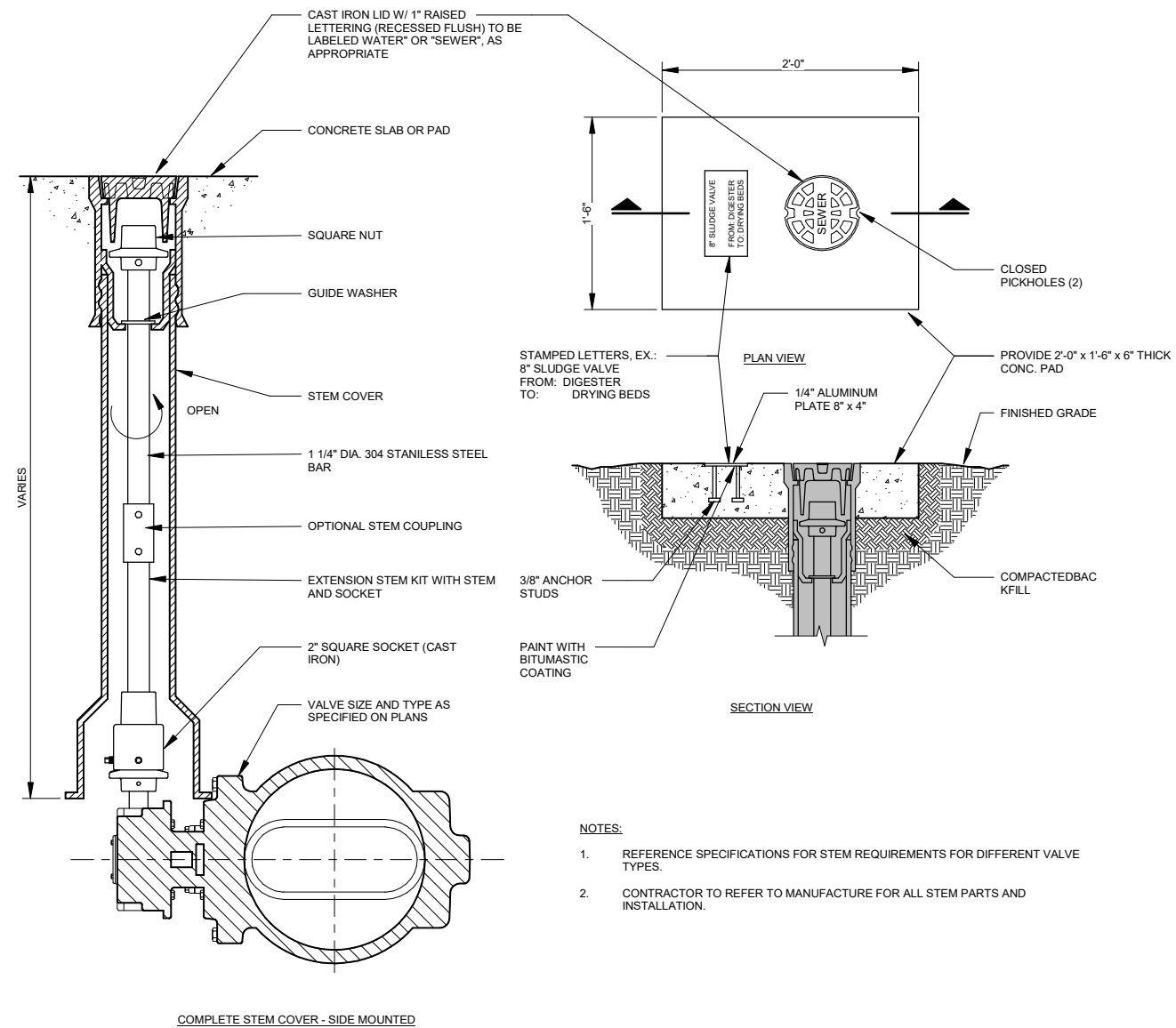
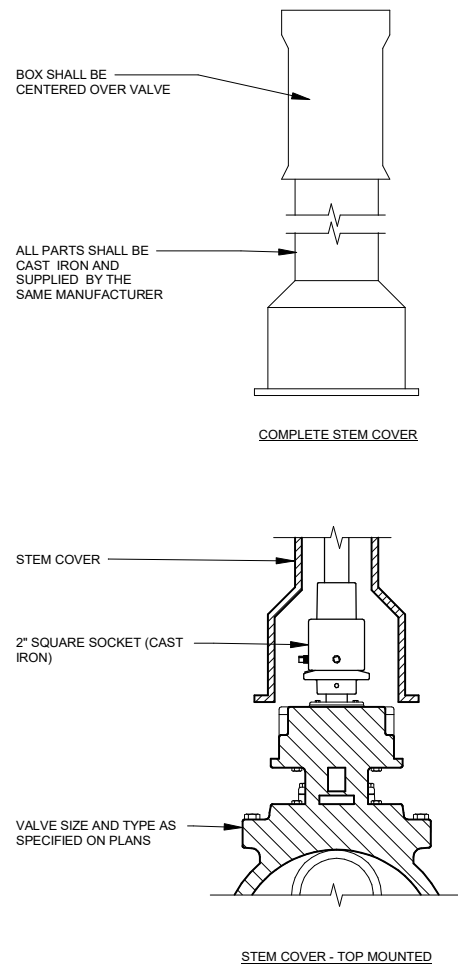
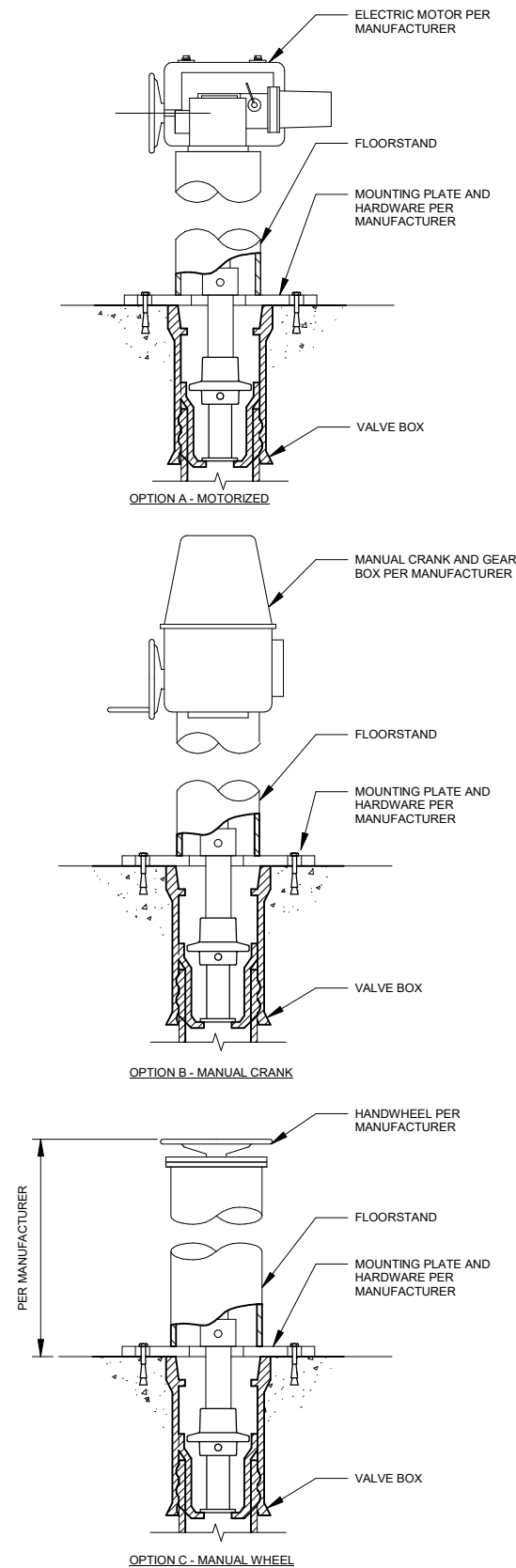


CONWAY CORPORATION
CONWAY, AR
ROGER Q MILLS JR. WATER TREATMENT
PLANT - 8 MGD EXP & IMPROVEMENTS

JOB NO.: 19W01300

DETAIL NOT TO SCALE

REV	DATE	DESCRIPTION	BY
STAINLESS STEEL STRUT CHANNEL PIPE SUPPORT			DIVISION D22
			SECTION - DETAIL NO. 0529-017
			DATE: 5/1/2024



CONWAY CORPORATION		REV	DATE	DESCRIPTION	BY
CONWAY, AR		BURIED VALVE BOX AND OPERATORS			DIVISION
ROGER Q MILLS JR. WATER TREATMENT PLANT - 8 MGD EXP & IMPROVEMENTS					D40
					SECTION - DETAIL NO.
JOB NO.: 19W01300		2343-001			DATE: 5/1/2024



